

Medical Ethics Implementation of Health Services in The Digital Era: A Challenge of Health Revolution

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Abstract:

Technological advances have played an important role in the advancement of health care, resulting in changes in the methods of interaction between doctors and patients, the procedures for establishing disease diagnosis and changes in the management of medical information. The current reliance on technology raises ethical dilemmas, privacy and data protection, medical consent, social inequality, medical consultation, empathy, and sympathy. This study aims to assess various information about the ethical challenges that healthcare workers will face in the digital era. This study was a literature review that uses a descriptive narrative approach. Data were collected online and through electronic media from various sources, including theses, dissertations, scientific publications, and e-books. Ethical challenges faced by health workers start from doctor-patient communication patterns, physical examinations, supporting examinations, diagnosis and even medical information management, which have all evolved towards digitalisation. These ethical challenges include ethical aspects of interaction patterns through telemedicine, medical support examinations, the use of electronic medical records, disease management and maintaining the confidentiality of medical information that is prone to leakage.

Keywords: Medical ethics; Healthcare; Digital Age; Challenges; Healthcare Revolution

INTRODUCTION

Today's advances in technology have brought great changes to all sectors of life, and medicine and health are no exception (Ismiyah et al., 2024). Technological advances have played an important role in the advancement of health services in today's digital era. The development of technology has had an impact on the health revolution, changing the methods of interaction between doctors and patients, procedures for diagnosing diseases, and changes in the management of medical information (Miliyandra et al., 2023). However, with the benefits of tremendous innovation, there are complex ethical challenges that need to be considered. The ethics of the medical profession are an important cornerstone in the use of this technology, while the law also plays a role in regulating and enforcing limits on its use.

The role of doctors as professionals who uphold human, moral, and ethical values is increasing. The values of professional ethics always color the various ways of serving patients or the community, with the aim of improving the doctor-patient relationship to establish cooperation in solving health problems in individuals and society. A doctor carrying out his work is obliged to pay attention to all aspects of health services, such as carrying out medical actions in accordance with the standards of the medical profession, service standards, standard operating procedures, professional ethics, and patient health needs, and a doctor is also required to communicate well with patients and other related parties.

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Patients have the right to know about their illness, so a doctor must provide complete information to patients and/or their families regarding the health problems experienced by patients. The information is in the form of disease diagnosis, efforts that must be made related to the management of the disease, as well as various risks or complications that may be experienced as a result of an action, and other alternative efforts that may be needed. Information related to the consequences that will occur if an action is not taken must also be conveyed to the patient. Information regarding the prognosis of the disease and estimated cost must also be clearly conveyed. In performing every action on a patient, a doctor must first seek the consent of the patient or his family after first conveying information that should be known by the patient or his family, and this must be done to protect doctors from lawsuits (Santosa et al., 2024).

All forms of effort in handling health problems have undergone changes and developments towards digitalization. Changes and developments in health services that occur in all aspects have changed various forms of activities in the medical field, such as medical consultations that could only be done face-to-face between doctors and patients and can now be done through telemedicine (Syamsuddin & Jusliani, 2024). The recording of medical records has been changed to electronic medical records (Belrado et al., 2024). Supporting examinations, both through imaging and laboratory, disease management that relies only on human skills, but now can be done by robots or machines and can be done remotely, the discovery of new drugs, and the access and storage of patient data, all of which have undergone many changes and developments. However, this technological development has ethical and legal challenges. Although these technological developments bring great benefits to society, not all people can experience and utilize these conditions. In low-income countries, access to technology is still very limited, so it is not easy or difficult to rely on technology. The reliance on the use of this technology raises ethical dilemmas; privacy and data protection, medical consent, social inequality, medical consultation, empathy, and sympathy are various challenges that must be faced (Farhud & Zokaei, 2021).

METHODS

This study was a literature review that used a descriptive narrative approach. A literature review summarizes previously published research and academic articles on the subject in an effort to improve the understanding of the subject. In addition, conducting a literature review improves the information search capacity, that is, the ability to effectively scan the literature. The process used in this research is to gather information from literature studies, reading, taking notes, analyzing, collecting concepts or texts, and developing and clarifying the information or texts collected in relation to the main research problem. Data collection was conducted by searching online and through electronic media from various sources, including theses, dissertations, scientific publications, and e-books. Keywords related to the research variables were used when searching for data on Google Scholar, Perplexity and Connected Paper.

RESULTS

Health ethics is currently the most interesting issue to debate because of the increasing technological developments in the medical field and health services. Health services must fulfil ethical standards related to patient autonomy, which are sometimes neglected by some medical personnel, either intentionally or unintentionally (Dharma et al., 2024). Health services used to be done face-to-face, but nowadays, with the development of technology, they can be done online or often called telemedicine. Telemedicine is a more useful technology that can make it easier for people to get health services and disease prevention efforts, and can monitor long-term health. Telemedicine has the potential to create more effective and organized healthcare (Haleem et al., 2021).

Ethical aspects of telemedicine

Telemedicine health services have the potential to minimize or even add to existing problems. On the one hand, telemedicine risks exacerbating inequalities, if the decision to introduce telemedicine has cost-saving goals rather than expanding access to healthcare. On the other hand, telemedicine can facilitate easier communication with medical professionals when individuals have difficulty accessing health services, so communication with health professionals can be done online (Damayanti et al., 2020).

The use of telemedicine is growing rapidly, which could lead to cost savings in healthcare. However, misdiagnosis is one of the risks that can arise. Misdiagnosis can occur in both face-to-face and virtual interactions but through a virtual riskier (Nittari et al., 2020). This is because in making a diagnosis of a disease, a doctor must conduct a history, physical examination and supporting examination. However, the physical examination component is lost when health consultations are virtually conducted. Face-to-face doctor-patient interactions have detailed mechanisms ranging from patient complaints to investigation and compliance standards (Chandwani & Dwivedi, 2015). Despite the high risk of misdiagnosis, legal provisions are neither standardized nor universal. This may result in different standards of service offered by healthcare providers, including a decline in the quality of handling of ethical and legal issues (Kalaivani et al., 2015).

Ethical aspects in electronic medical records

Electronic Medical Records (RME) are new findings that have been widely used in the modern world of health. The use of the RME replaced the previously used manual medical records. RME makes it easier for officers to store, access, and process patient data more quickly and accurately. This system can help health workers make data-based decisions that are emergency. Ethical and legal challenges in the use of electronic medical records in the era of personalized medicine include data security and ownership, legal liability, genomic discrimination, and changes in the relationship between doctors and patients (Budiayanti et al., 2019). Computer security, especially in the health sector, includes six aspects: privacy, confidentiality, integrity, authentication, availability, access control, non-repudiation, and privacy (Nugraheni, 2018). Patient data are medical information that must be kept confidential, and the threat of misuse. Permenkes No.24 of 2022 has set standards for security, confidentiality, and privacy of patient data to address and overcome these challenges (Azalia et al., 2024).

Ethical aspects in ancillary examinations, both imaging and laboratory

Supporting examinations, both in the form of imaging and laboratory examinations, are used to support the diagnosis of diseases and to support or rule out the diagnosis of other diseases. Health workers who carry out their professional services to the community will be related to medical ethics and health law, from the planning process to helping develop the laboratory they manage, and from carrying out the examination process to providing diagnostic support data for medical personnel who will convey professional expertise to patients (Amin, 2017). In the era of digitalization, the emergence of new diagnostic tools and therapeutic interventions is also followed by social changes so that health actors should understand ethical standards so as not to pose a risk to the patient's morning (Damayanti et al., 2020).

Currently, the digital world has penetrated patient-support examinations. The use of digital facilities for laboratory examinations is becoming increasingly widespread. As professionals, healthcare workers must define how they will use it to better serve and protect patients by engaging in the development of procedures and examinations that ensure accurate transmission and interpretation of results and information. Officers should be able to develop technical standards and work closely with the manufacturers and national authorities. Health workers should be able to validate and maintain

systems for teletransmission and interpretation. When interpretation of examination results is done remotely by someone who is not the patient's responsible person, or by a diagnostic algorithm, we need to have a clear definition of professional responsibility and liability (Gouget & Lajonchere, 2000).

Ethical aspects of patient management

Any medical act performed by staff that endangers or seriously injures the patient's body violates applicable laws, regulations, and medical ethics. Medical ethics deals with reasoning, justification, and personal moral conflicts when making ethical decisions. The application of ethical and legal principles must always be upheld by every doctor because it will save doctors from lawsuits and demands and reflect the doctor's personality as a noble profession at all times (Holijah et al., 2023).

The healthcare sector faces several challenges in this era of evolving technology. The digital age has given rise to artificial intelligence (AI) as a solution to challenges in the healthcare sector. The ethical issues that arise can be at individual, interpersonal, group, institutional, sectoral, and societal levels. These ethical levels are categorized as epistemic, normative, or comprehensive. In the digital era, the use of AI in medicine has provided various types of convenience for the prevention, diagnosis, and management of diseases (Dugdale & Braswell, 2021). Among the widely used artificial intelligence techniques for the genetic classification and diagnosis of diabetes mellitus, predicting the results of cancer patient treatment and assessing human movement through neural network techniques. This evolving technology has increased the challenges to patient privacy related to the legal liability of the tools used, medical decision-making errors, and unfair behavior (Khan et al., 2023).

Storage and confidentiality of patient data

In the digital age, maintaining patient confidentiality is a significant challenge for healthcare providers (Ibrahim et al., 2024). Confidentiality of patient health information, maintaining integrity, data management, content quality and consumer protection as well as the commercial interests of the healthcare industry against unethical practices are all important medical and healthcare concerns that must be addressed (Smith & Anderson, 2018). Maintaining patient confidentiality is not only limited to the dissemination of data on electronic media but also to the oral communication of doctors or health workers. Some forms of patient medical records in hospitals or clinics that must be kept confidential are admission profiles, medical billing records, patient profiles, prescription records, referrals, discharges, and follow-up appointments (Tariq & Hackert, 2023).

Respecting patient confidentiality is an ethical and legal responsibility of healthcare professionals. Tegegne's research (2022) revealed that training in medical ethics, direct contact with patients, number of patient visits, and number of ethical dilemmas encountered are significant variables affecting health professionals' attitudes towards patient confidentiality (Tegegne et al., 2022). In a systematic review, Alhammad et al. explored the perspectives and awareness of patients regarding Mobile Health (mHealth) and found that there were concerns about data privacy, confidentiality and security, awareness, facilitators and enablers, and related factors. Patients showed different and aligned perspectives on data privacy, security, and confidentiality and suggested approaches to improve the use of mHealth applications (facilitators), such as protection of personal data, ensuring that health status or medical conditions are not mentioned, brief training or education on data security, and ensuring data confidentiality and privacy (Alhammad et al., 2024).

CONCLUSION

Technological advances have played an important role in the advancement of health services, creating ethical challenges for health workers in providing services to patients. These challenges start from doctor-patient communication patterns, physical examinations, supporting examinations, diagnosis enforcement, and even the management of medical information, which, as a whole, has evolved towards digitization. Therefore, a doctor or health worker must uphold the application of ethical and legal principles because it will save

doctors from lawsuits and demands and reflect the doctor's personality as a noble profession for all times.

Conflict of Interest

All the authors declare that there are no conflicts of interest.

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