



REVIEW

Ethics in the professional practice of imaging specialists

La ética en la práctica profesional de los especialistas en Imagenología

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ABSTRACT

Introduction: it constitutes an unavoidable need to maintain the complementation of ethics and the Imaging specialty as fundamental sciences during professional practice.

Objective: to describe the role of ethics in the field of Imaging for the proper development of professional practice.

Methods: an electronic search of publications and systematic reviews of the literature was carried out during the months of June and July of the year 2023, in the electronic databases Pubmed, Medline and SciELO, using the Google Scholar search engine, with the descriptors: “ethics and medical ethics”, “Imagenology” and “ethics and Imaging”. A total of 56 sources in the referred databases were reviewed, of which 31 bibliographic references were used.

Results: imaging specialists must comply with ethical obligations, like other health professionals, including respect for privacy, medical secrecy, confidentiality, as well as the practice of informed consent. These professionals are exposed to ethical conflicts during their professional practice, so they must be technically and scientifically prepared, which will also allow them to face the ethical dilemma of medico-legal Imaging, during which they must pay special attention to the indication of imaging studies for this purpose, when they do not provide any benefit to the patient.

Conclusions: imaging specialists who assist in patient care must ensure behavior in accordance with the ethical standards that govern the practice of this profession.

Keywords: Confidentiality; Informed Consent; Respect; Ethics; Medical Ethics.

RESUMEN

Introducción: constituye una necesidad ineludible mantener la complementación de la ética y la especialidad Imagenología como ciencias fundamentales durante el ejercicio profesional.

Objetivo: describir el papel de la ética en el ámbito de la Imagenología para el buen desarrollo de la práctica profesional.

Métodos: se realizó una búsqueda electrónica de publicaciones y revisiones sistemáticas de la literatura durante los meses junio y julio del año 2023, en las bases de datos electrónicas *Pubmed*, *Medline* y *SciELO*, utilizando el buscador *Google Académico*, con los descriptores: “ética y ética médica”, “Imagenología” y “ética e Imagenología”. Se revisaron un total de 56 fuentes en las bases de datos referidas, de las cuales se utilizaron 31 referencias bibliográficas.

Resultados: los especialistas en Imagenología deben cumplir deberes éticos al igual que el resto de los profesionales de la salud, los incluye el respeto a la intimidad, el secreto médico, la confidencialidad, así como la práctica del consentimiento informado. Estos profesionales están expuestos a conflictos éticos

durante su práctica profesional por lo que deben estar preparados técnica y científicamente, lo que le permitirá además enfrentar el dilema ético de la Imagenología médico-legal, durante el que deberá prestar especial atención a la indicación de estudios imagenológicos con este fin, cuando estos no aportan ningún beneficio al paciente.

Conclusiones: los especialistas en Imagenología que asiste en el cuidado de los pacientes, deben asegurar un comportamiento acorde a las normas éticas que rigen la práctica de esta profesión.

Palabras clave: Confidencialidad; Consentimiento Informado; Respeto; Ética; Ética Médica.

INTRODUCTION

Ethics is the philosophical study of morality. It is one of the oldest theoretical disciplines and emerged as an integral part of philosophy during the formation of slave society.⁽¹⁾

Undoubtedly, ethics comprises a set of moral obligations that delineate what is right in our actions and choices. Ethical principles are in direct opposition to incorrect and misguided actions that violate established moral norms within society, based on professional standards and common sense.⁽²⁾

Many professions have established professional ethics that are closely related to normative science, ethical dilemmas, and even philosophy. It has been established that ethical practices in various professions provide guidance for professionals in the workplace, resulting in positive outcomes.⁽³⁾

Bioethics is the branch of ethics that provides principles for appropriate action in matters related to life. Its purpose is to differentiate between what should and should not be done in actions that affect human life.

Bioethics applied to medical actions is also known as medical bioethics. The significance of medical bioethics lies in the necessity to regulate medical actions in a world where scientific discoveries and technological advances are occurring rapidly, opening up new possibilities for action.⁽⁴⁾

Imaging techniques, ranging from X-rays to positron emission tomography, play a crucial role in healthcare, both in diagnosis and intervention.

Imaging is a medical branch that uses images to diagnose and treat injuries and diseases. It originated in the late 19th century when Wilhelm Roentgen discovered X-rays in 1895. This breakthrough earned him the Nobel Prize in Physics in 1901.⁽⁵⁾

Imaging plays a vital role in healthcare. This branch of medicine has various applications, such as identifying injuries or fractures caused by trauma (using X-rays), detecting breast cancer early (via mammography), monitoring fetal development and detecting possible abnormalities (using ultrasound), or using radiopharmaceuticals for timely diagnosis of endocrine tumors.⁽⁶⁾

Imaging specialists, along with other medical professionals, encounter ethical and professional dilemmas in their daily practice. These dilemmas may be unfamiliar to them. However, imaging specialists often face unique ethical challenges in clinical practice due to the distinct nature of their physician-patient interaction compared to other specialties.⁽⁷⁾

The objective of this research is to provide a description of the role of ethics in Imaging to ensure the proper development of professional practice.

METHODS

In June and July of 2023, an electronic search for publications and systematic literature reviews was conducted using *Google Scholar* and the electronic databases *PubMed*, *Medline*, and *SciELO*. The following descriptors were used: "ethics and medical ethics", "Imaging", and "ethics and Imaging". Descriptors were combined for the search.

The review included 56 sources from the referenced databases. Out of these, 31 bibliographic references in English and Spanish were selected. These references consist of articles from various electronic journals.

The study included full-text articles published in English and Spanish, as well as cross-sectional, case-control, and cohort studies. Additionally, studies focused on updating content related to ethics and Imaging were also included. Excluded from the study were references that only contained abstracts in the databases and editorials.

RESULTS AND DISCUSSION

Ethical duties of the imaging specialist: Respect for privacy

Privacy refers to the personal space that an individual reserves for a select group of people, usually consisting of family and friends. Its boundaries are not exact and vary depending on different circumstances. A person's intimacy or privacy refers to those actions and feelings that are not accessible to the public. It is important to note that privacy is protected by law, particularly in response to government or corporate advancements.⁽⁸⁾

Imaging specialists should take necessary steps in their professional practice to protect the privacy of patients.

It is always an ethical duty to respect the modesty, privacy, and dignity of the patient, regardless of their level of consciousness. This includes avoiding unnecessary exposure of intimate parts of their body during the acquisition of diagnostic images, particularly when other patients and staff are nearby.⁽⁹⁾

These specialists are responsible for creating an environment in which all personnel attending to the patient feel morally obligated to provide humane care, and respect their privacy.

Privileged communication

Privileged communication is the legal obligation and moral duty of healthcare professionals to remain silent about everything they have seen, heard, discovered, or done in the course of their profession. For thousands of years, the practice of medicine has held a unique promise of silence.⁽¹⁰⁾

Privileged communication refers to the facts or actions that a person becomes aware of through their profession, whether directly or indirectly.⁽¹¹⁾

Imaging specialists must also adhere to privileged communication to ensure patients that all information related to their life, illness, and imaging results will be kept confidential. During the doctor-patient relationship, all information generated, including the act of seeking consultation, is considered privileged. Imaging specialists have a professional duty to maintain discretion regarding the information they obtain in the practice of their profession.⁽¹²⁾

The reputation of doctors in general, and imaging specialists in particular, is largely attributed to their seriousness, discretion, and honest and thoughtful approach to professional matters. Privileged communication in medical practice is essential to inspire trust in the profession and its practitioners, and to protect the honor and peace of mind of patients and their families.⁽¹³⁾

Confidentiality

Confidentiality is both a professional duty and a patient right. This means that only those directly involved in the patient's care will have access to their medical records and radiological studies. Its use will be subject to strict ethical and legal rules that prohibit its disclosure beyond the permitted scope.⁽¹⁴⁾

Confidentiality arises from the right to privacy as a value and attribute of information that contains personal data.⁽¹⁵⁾

Imaging specialists, like all physicians, have a legal and ethical responsibility to maintain patient confidentiality. Although clinical physicians have a deeper doctor-patient relationship, the obligation of imaging specialists remains the same.

Imaging specialist-patient relationship can vary from interpreting images, where there is typically no direct contact with the patient, to cases where there is direct contact, such as in an ultrasound or interventional procedure. In both cases, the right to confidentiality is the same.⁽¹⁶⁾

Currently, many hospitals in our country possess robust information systems that enable the acquisition, storage, and transmission of digital images. This has greatly facilitated online access to medical records, clinical diagnoses, images, and radiological reports, among other benefits. Imaging specialists are now part of a new culture of medical work that involves faster transfer and remote access of information. However, this may compromise security and lead to a loss of information privacy.⁽¹⁷⁾

This technology allows doctors to access confidential information remotely. However, it is crucial for doctors to be fully aware of their responsibility in handling information and respecting confidentiality to avoid breaching privileged communication.⁽¹⁸⁾

It is crucial to ensure the confidentiality, security, and ethical use of personal information included in medical records, such as images and radiological reports. This includes the publication of images in medical literature, presentations, and social media, with a focus on ensuring patient confidentiality. Transferring information for scientific research, teaching purposes, or in the context of audits does not violate confidentiality, as long as the provided information does not reveal the patient's identity.⁽¹⁹⁾

Informed consent in Imaging

Informed consent means “the consent of a patient or their family (in the case of a minor or incompetent person) to undergo a surgical or medical procedure, or to authorize participation in a clinical study, which is given after properly understanding the significance of the medical information received and the risks involved.”⁽²⁰⁾

Informed consent is a crucial component of the imaging specialists' practice. It is useful when conducting examinations that involve some risk, such as interventional procedures or less invasive procedures that require the use of a contrast agent (e.g., urethrocytography, barium enema of the colon, hysterosalpingography, etc).⁽²¹⁾

Imaging specialists have a responsibility to provide reliable and understandable information to patients or

their families in order to respect their rights. It is advisable for these specialists to assume this responsibility as a routine practice. They must be ready to perform this task and collaborate as a team. Imaging specialists should serve as the primary intermediary with the patient.

In many countries, informed consent in imaging is especially used for interventional procedures (not always). Often, it is incomplete and done quickly, and the patient only fills out or signs a form minutes before the procedure. The primary objective of physicians is to protect themselves against potential lawsuits or demonstrate compliance with quality process standards.⁽²²⁾

Physicians who pressure patients into signing consent forms are violating the principle of autonomy. Imaging specialists should take extra precautions in cases where there is insufficient knowledge of the informed consent process and when collaborative decision-making regarding treatment is not a common practice.⁽²³⁾

Potential ethical conflicts that imaging specialists face in their professional practice

Medical bioethics evaluates basic medical actions in the doctor-patient relationship based on four fundamental principles: autonomy, beneficence, non-maleficence, and justice. Additionally, respect for privacy, confidentiality, and truthfulness are also essential in the relationship between imaging specialist and patient.⁽²⁴⁾

Technological advancements and dehumanization of medicine have a significant impact on specialties such as Imaging. In the medical practice of this specialty, ethical conflicts may arise, including those related to technological advancements such as the indiscriminate use of imaging methods, remote image transmission, and interpretation. Other conflicts may involve the doctor-patient relationship or issues concerning patients' rights and responsibilities, such as informed consent, autonomy, privacy, intimacy, privileged communication, confidentiality, modesty, and dignity.⁽²⁵⁾

Imaging specialists have a significant ethical responsibility when it comes to prescribing imaging studies. Some of these studies may pose risks to the patient, while others result in unnecessary expenses for healthcare institutions. Additionally, there are imaging exams prescribed to protect the physician from criticism or a potential complaint, known as "defensive medicine."⁽²⁶⁾ Effective communication and proper interpersonal relationships are crucial for establishing a good relationship between imaging specialists and their patients. This, in turn, enhances the quality of medical care and helps prevent any potential ethical conflicts.⁽²⁷⁾

The need for training in medical ethics and bioethics from undergraduate to postgraduate levels, for residents and specialists in Imaging, is highlighted by the aforementioned elements. This training should be ongoing and include professional development and academic training.

Medical-legal Imaging: An ethical dilemma for imaging specialists

Medical-legal imaging studies are a common practice in the medical field. Individuals undergo these studies by order of a judge, rather than for medical reasons. They occur in various healthcare settings and involve different types of exposures. The common characteristic among them is that they are not related to individuals' health. These types of studies include radiological estimation of bone age and studies to detect drug trafficking within the body (body packing).⁽²⁸⁾

Imaging in this case does not provide any medical benefit to the patient. Instead, it exposes their body to radiation solely to resolve a legal question. The balance between risks and benefits is a constant dilemma for imaging specialists.⁽²⁹⁾

A medical or imaging examination conducted for the purpose of preventing a serious crime or in defense of public health does not violate the right to personal privacy. Even though a body search may be considered an intrusion into the right to personal privacy, it can be justified to protect other constitutionally protected goods and rights.⁽³⁰⁾

The imaging specialist should carefully consider the indication for imaging studies when there is no direct health benefit to the patient and ensure that the resulting exposure dose is kept as low as reasonably achievable. In these situations, obtaining informed consent is mandatory.⁽³¹⁾

CONCLUSIONS

Imaging specialists must practice in a morally acceptable and professional manner, respecting fundamental ethical and bioethical principles of medicine. This includes respecting patient autonomy, dignity, and privacy, as well as maintaining confidentiality of medical actions. Informed consent should play a significant role in the medical practice of imaging specialists, who need to be ethically and scientifically prepared to enhance the quality of medical care and prevent potential ethical conflicts.

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