

CHAPTER VI

AI and Medical Development: A Review of the Morals of the Catholic Church

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Abstrak

Over the past few decades, artificial intelligence (AI) has grown significantly and affected every aspect of life, including medicine. Artificial intelligence has been used to generate several innovative technologies that can enhance the standard of healthcare, including medical research, diagnosis, and therapy. But the advancement of AI also brings up some ethical issues, particularly in light of the Catholic Church. The magazine covers the ethical examination of medical advancements and artificial intelligence by the Catholic Church. First, a summary of the advancements in healthcare and artificial intelligence is given. After that, the moral doctrine of the Catholic Church regarding artificial intelligence is examined. This includes fundamental moral principles, bioethical principles, and ethical principles about medicine. The final section of the journal discusses how the moral teachings of the Catholic Church can be applied to the advancement of artificial intelligence and medicine.

Keywords: Artificial Intelligence (AI), Medical Development, Moral Of The Catholic Church.

Introduction

The intersection of artificial intelligence (AI) and medical development presents profound ethical challenges, especially when viewed from the moral perspective of the Catholic Church. The Catholic Church, as a religious institution with strong moral and ethical guidelines, has historically been instrumental in guiding its people through various moral and ethical issues. Rapid developments in AI and medical technology open the door to the possibility of tremendous transformation in healthcare but also raise complex questions related to human rights, human dignity, and the ethical values held by the Catholic Church.

Advances like automated algorithm-based diagnostics, the creation of genetic medicines, and the use of robots in surgery have been made possible by the

expansion of medical technology and artificial intelligence. The use of these technologies raises serious ethical issues including those about morality, autonomy, and society's long-term effects, even while they have the potential to save lives and improve quality of life.

The Catholic Church frequently emphasizes fundamental moral principles, such as respect for human dignity, moral duty for others, and the use of technology in life's values, in the context of medical advancements driven by artificial intelligence. Therefore, it is vital to comprehend how the Catholic Church's moral teachings

Literatur Review

Ethics of Artificial Intelligence

In the medical context, the implementation of Artificial Intelligence (AI) should be subject to widely recognized ethical principles. (Cowls et al., 2019) presents a significant concept in his research, namely. Good AI Society, where the main focus of Artificial Intelligence is to generate a positive impact that is ethically and socially sustainable. present a significant concept in their research, the Good AI Society, where the main focus of AI is to generate ethically and socially sustainable positive impact. They emphasize the importance of strengthening values such as transparency, accountability, and fairness at every stage of AI development.

This thinking underscores the urgency of adopting moral values as a key foothold in guiding the development of medical technology. (Jobin et al., 2019) also adds an ethical dimension by discussing the role of ethics in overcoming biases that are often inherent in AI algorithms, reflecting human prejudices. They encourage the integration of ethics from the design and development stages of AI to ensure fairness in every decision made by the system. Thus, attention to moral values is essential in preventing the reproduction of biases and ensuring equitable implementation of technology in the medical environment (Sinibaldi et al., 2020).

Further studies by (Mittelstadt et al., 2019) explored the concept of explainability as a key element in maintaining transparency and accountability of AI (Cowls et al., 2019; Mittelstadt et al., 2019). To maintain transparency and accountability in AI development, there needs to be a deep understanding of the moral and ethical values in the use of this technology. The argument highlights that the ethics of AI are not limited to machine-generated decisions, but also to the ability of humans to understand and discuss these decisions (Combi et al., 2022).

In other words, ethical integrity in AI applications involves the ability of users and stakeholders to develop a substantial understanding of the decisions made by the technology.

By involving the concepts of Good AI Society, ethical management in design and development, and the importance of explainability, this set of concepts forms a comprehensive foundation to ensure that the application of AI in the medical field complies with high moral and ethical standards (Siau & Wang, 2020). According to experts' views, Good AI Society refers to the principles of law enforcement and regulation that can ensure the security and privacy of patient data. Ethical management in design focuses on the decision-making process behind the technology so that it does not conflict with human values (Kiseleva et al., 2022).

In addition, explainability is needed to explain how AI systems achieve certain results so that they can be understood by medical practitioners and patients more transparently (Haibe-Kains et al., 2020). Thus, the implementation of AI in the medical field will be in line with the demands of a high level of morality and professionalism as a means of improving the welfare of society as a whole. The implementation of AI technology in the medical field has great potential to improve the quality of healthcare, but it also raises several ethical challenges that need to be taken seriously. One of the things that need to be emphasized is the importance of ensuring that AI algorithms do not reinforce or reproduce biases that already exist in the healthcare system (Green, 2018). In addition, there needs to be a mechanism that ensures that decisions generated by AI technology can be explained and accounted for transparently.

The Catholic Church's Moral Perspective

In exploring the moral perspective of the Catholic Church, the literature on ethics and the Church's moral teachings play a key role in shaping views on contemporary issues. In this case, the Church sees the need to emphasize the dignity of life, human rights, and moral principles that the Catholic Church holds dear (Sugiarto et al., 2022). In *Veritatis Splendor* (1993), Pope John Paul II affirmed the importance of moral truth and emphasized that humans have a moral responsibility to understand and follow natural law (John Paul II, 1993). This reference became the basis for many studies that considered the ethical implications of modern technology, including Artificial Intelligence in the medical field. Catholic theologians and ethicists such as Charles E. Curran and Lisa Sowle Cahill have made significant contributions to this literature. Curran emphasizes the

relevance of Catholic moral teaching in the context of modern moral pluralism, while Cahill highlights the role of Catholic social teaching in guiding responses to social and technological change (Sinibaldi et al., 2020); McCarthy et al., 2020).

In the context of medical technology, Gilbert Meilaender, a theological ethicist, raises critical questions about the use of Artificial Intelligence in human life. He highlights the importance of ensuring that medical technology does not replace the dignity of life and human freedom (Meilaender, 2020). In addition, according to Paul Scherz as found in the Catechism of the Catholic Church, it emphasizes the need to protect the dignity of life, human rights, and principles of social justice in the face of technological progress (Davis & Scherz, 2021). The Church also highlights the moral responsibility to use Artificial Intelligence ethically and ensure that humans remain at the center of attention in the development of medical technology.

This view is reinforced by Paul Scherz, who emphasizes the need to protect the dignity of life, human rights, and principles of social justice in the face of technological advances (Davis & Scherz, 2021). The Church also highlights the moral responsibility to use AI ethically, to ensure that humans remain at the center of attention in the development of medical technology. Experts emphasize the need to maintain human values in the use of medical technology for the good of all.

Medical Development and Bioethics

Rapid medical developments, especially those involving advanced technologies such as Artificial Intelligence (AI), pose new complexities in the realm of bioethics (Sanhaji & Hizbullah, 2023). Several studies underline the involvement of ethics in every stage of medical development using AI technology. According to (Mercer et al., 2021), bioethics is the study of moral principles relating to human life and life sciences. In the context of medical development, bioethics provides a theoretical basis for assessing the ethical implications of the application of advanced medical technologies. Scholarly views, such as (Harris, 2019), highlight that bioethics in medical development needs to consider the impact on human dignity, justice, and universal moral principles. In this literature, the need for balance between medical progress and underlying ethical values is emphasized.

The Catholic Church's view is reflected in the work of the *Josephinum Journal of Theology*. The Catholic Church affirms that medical developments must be in line with the moral principles upheld by Catholic teaching, including the right

to life and human dignity (Garrigou-Lagrange & Rini, 2011). The reference work (Pope Pius XII, 1957) on Catholic bioethics states that the protection of life and humanity should be the top priority in modern medical developments. Systematically, this literature illustrates how important the involvement of bioethics is in the views of experts and the Catholic Church towards medical developments. Bioethics becomes an important moral guide in navigating the challenges and decisions that arise along with the advancement of medical technology, especially in the use of Artificial Intelligence in the health domain.

Medical technology, particularly the use of AI, is becoming an increasingly relevant subject in medical ethics discussions. The importance of ensuring that the use of medical technology does not supersede human dignity and freedom has become a focus of attention for experts and the Catholic Church (Hazel Markwell, 2005). Scholars such as Gilbert Meilaender and Paul Scherz highlight the need to protect the dignity of life, human rights, and principles of social justice in the face of advances in medical technology.

This view is also reflected in the work of the *Josephinum Journal of Theology* which emphasizes that medical developments must be in line with the moral principles held dear by Catholic teaching, including the right to life and human dignity. Thus, experts and the Catholic Church systematically emphasize how important the involvement of bioethics is in their views on the development of medical technology. The existence of bioethics is crucial in formulating moral guidance in facing the challenges and decisions that arise along with advances in medical technology, especially in the context of the use of Artificial Intelligence in the health domain.

Discussion

The Catholic Church's View on the Use of AI in Medical Diagnosis

The Catholic Church's view on the use of AI in medical diagnosis is reflected in the holistic Catholic moral and ethical teachings (Hagendorff, 2020). In its view, technology should be used to improve human welfare without compromising fundamental moral values. Pope John Paul II, in his encyclical *Evangelium Vitae*, emphasized that human life is a sacred gift, and every action, including the development of medical technology, must respect and protect the dignity of life (Pope John Paul II, 1995).

In the context of the use of AI in medical diagnosis, the Church highlights the importance of paying special attention to the moral aspects that arise. The

concept of dignity of life and health ethics in the encyclical *Donum Vitae* emphasizes that medical diagnosis should be carried out in good faith, respecting the rights of patients, and considering the ethical consequences of each decision (Kurniati, 2017). Theological scholars such as (Richard M. Gula, 1987) point out that Catholic medical ethics places special attention on the welfare of patients and the decisions taken by medical practitioners. In the context of Artificial Intelligence, it is recognized that technology-enhanced medical diagnosis must be applied carefully, maintaining a balance between speed of diagnosis and moral prudence.

Therefore, the Catholic Church's view on the use of AI in medical diagnosis highlights the balance between technological advancement and moral values. Emphasis on human rights, patient welfare, and the ethical responsibilities of medical practitioners are key points in this view. Therefore, the implementation of AI in medical diagnosis should be carried out with good faith, transparency, and high ethical awareness by the teachings of the Catholic Church, which is rich in moral values.

Regarding the experts' views on the use of Artificial Intelligence in the context of medical technology, it can be studied from the perspective of medical ethics. According to the experts, as expressed by Meilaender and Scherz, the importance of ensuring that medical technology, including the use of Artificial Intelligence, does not replace the dignity of life and human freedom is one of the critical points. They highlight the need to protect the dignity of life, human rights, and principles of social justice in the face of advances in medical technology (Davis & Scherz, 2021).

This view is in line with the opinion of the Catholic Church, which emphasizes the need to be in line with the moral principles upheld by Catholic teaching, especially in the aspects of the right to life and human dignity (Garrigou-Lagrange & Rini, 2011; Pope Pius XII, 1957). The involvement of bioethics is important in the views of experts and the Catholic Church towards medical developments, especially in the context of the use of Artificial Intelligence in the health domain.

Systematically, the views of experts and the Catholic Church emphasize how important the involvement of bioethics is in formulating moral guidance in facing the challenges and decisions that arise along with advances in medical technology. In this case, the implementation of AI in medical diagnosis must pay attention to the balance between technological progress and moral values, and

adjust to the ethical principles held by the Catholic Church for the welfare of patients and the continuity of the ethical responsibilities of medical practitioners.

Ethical Use of AI in Medical Therapy

The Catholic Church's view on the use of AI in medical therapy is reflected in the ethical foundation embedded in Catholic moral teaching. In addressing this, the Church focuses on the moral principles that govern medical interventions, viewing them as extensions of a broader moral responsibility to the well-being of humanity.

In the encyclical *Evangelium Vitae*, Pope John Paul II emphasized that every medical action, including therapy, should be directed towards respect for human life and dignity (Pope John Paul II, 1995). In the context of the use of AI in medical therapy, the Church demands that these principles be upheld, and any therapeutic action must take into account moral values involving the physical and spiritual well-being of the patient. This is also important in the view of Jean Porter, highlighting the importance of ethical principles in guiding medical action (Gardiner, 2003). From the perspective of the Catholic Church, medical therapies involving Artificial Intelligence should ensure that every decision and action is in line with moral principles, including the right to life, justice, and social solidarity.

Furthermore, the Encyclical *Dignitas Personae* emphasizes that medical actions, including therapies, must respect the integrity of the patient's person (Gonzalo Miranda, 2009). In using AI technologies for medical therapy, the Church emphasizes the need to understand and pay attention to the individual needs of each patient, distancing itself from approaches that are too mechanistic and do not consider moral and personal dimensions.

The Charter for Health Care Workers as cited by (Yarney et al., 2016), affirms that medical practitioners, including in the use of AI, have a moral responsibility to ensure that the therapy provided is by Catholic moral principles and ethical norms. This includes aspects such as fairness in the distribution of therapy, the obligation to provide quality care, and respect for the integrity of the patient's body.

Therefore, the Catholic Church's view on the use of AI in medical therapy emphasizes the importance of following the moral principles outlined in Catholic moral teaching. In this perspective, medical therapies involving AI should be aligned with ethical values, respect human rights, and prioritize the well-being of patients in both physical and spiritual dimensions.

Ethical Challenges in Medical Research Involving AI

The development and application of AI in medical research bring with it complex ethical challenges. In this context, the Catholic Church as the moral guardian of its people is engaged in responding to these challenges by detailing its views that are powered by ethical and moral principles. In this regard, the Instruction on Certain Bioethical Questions serves as a critical guide in discussing and addressing the ethical challenges that arise (Personae, 2008). Church teaching also emphasizes fundamental moral values, especially regarding the dignity of life and human rights. In involving AI in medical research, the Church considers the need for caution and respect for the integrity of human life. Pope John Paul II's encyclical *Evangelium Vitae* states that every life has inestimable value and cannot be compromised. Therefore, medical research involving AI must ensure that human rights and the dignity of life are respected (Pope John Paul II, 1995).

From a philosophical perspective, scholars such as (Beauchamp & Childress, 2001) propose bioethical principles, among which are the principles of justice, autonomy, and harmlessness. In the context of medical research with AI, the principles of justice encourage the fair distribution of the benefits and burdens of research among all participants and groups. The principle of autonomy emphasizes the right of participants to provide informed consent and control the use of their data. Meanwhile, the principle of no harm requires research to yield maximum benefit and avoid disproportionate risk.

Other bioethicists, such as (Benjamin, 2016), highlight the potential for reproduction and reinforcement of bias in AI algorithms. This view reflects the Church's concerns regarding the need to address the social and ethical impacts of inequalities that could arise in AI-based medical research. The Catholic Church encourages that any research and implementation of medical technology prioritizes justice and avoids inequalities that may disadvantage certain groups.

In terms of theology, the Church's moral principles include special attention to God's role in creation and salvation. The Church emphasizes that medical research with AI should be conducted with an awareness of religious and moral principles. The encyclical *Dignitas Personae* emphasizes that any action involving human life must be carried out with respect for the divine plan and God's role as Creator (Gonzalo Miranda, 2009).

Scholarly studies, as outlined by (Cowls et al., 2019), highlight the concept of Good AI Society. They emphasize the need for values such as transparency, accountability, and fairness in AI research. This view is in line with that of the

Church, which supports the application of medical technology by reinforcing moral values and ensuring that the impact is ethically and socially positive.

Through a systematic and holistic approach, the Catholic Church makes a valuable moral contribution to addressing the ethical challenges in AI-based medical research. By guiding its people and providing value-rich moral guidance, the Church plays a role in shaping the development of medical technology so that it is always in line with high ethical principles.

Moral Responsibility of the Catholic Church in Medical Technology Development

The moral responsibility of the Catholic Church in the development of medical technologies, particularly those involving AI, reflects a deep concern for ethical principles and moral values. The Church faces the critical task of ensuring that the development of medical technology remains in line with the moral principles espoused in Catholic teaching. In his encyclical *Laudato Si*, Pope Francis voiced concerns about the ecological and social impacts of technological development, emphasizing the importance of ecological justice and sustainability (McGrail, 2019). In this context, the Catholic Church has a moral responsibility to evaluate the environmental, social, and ethical impacts of the development of medical technologies, including AI.

Theological scholars, such as Philip Sheldrake cited (Peat, 2005), highlight also the importance of the Church's involvement in guiding technological development in line with moral and ethical values. They emphasize that the Church should serve as a moral guide for its people and provide ethical direction in every phase of medical technology development involving Artificial Intelligence.

The views of experts and the Catholic Church on the development of medical technology, especially the use of Artificial Intelligence in the realm of health, are reflected in efforts to maintain human values. The involvement of bioethics is crucial in formulating moral guidelines in facing the challenges and decisions that arise along with the advancement of medical technology. Bioethics becomes an important moral guide in navigating the implementation of Artificial Intelligence in medical diagnosis, to ensure that the use of medical technology remains in line with the moral principles upheld by Catholic teachings, including the right to life and human dignity.

The protection of life and humanity must be a top priority in modern medical developments. In this context, experts and the Catholic Church have

systematically emphasized how important the involvement of bioethics is in their views on the development of medical technology. Thus, the ethical and moral views of these experts and the Catholic Church provide a deep and systematic view in ensuring that the use of medical technology, including Artificial Intelligence, does not replace human dignity and freedom ((Meilaender, 2020); (Davis & Scherz, 2021)).

Conclusion

The Catholic Church's view on the use of AI in medical diagnosis focuses on holistic Catholic moral and ethical teachings. These teachings demand that technology should be used to improve human welfare without compromising fundamental moral values. Pope John Paul II, in his encyclical *Evangelium Vitae*, emphasized that every action, including the development of medical technology, must respect and protect the dignity of life. In the context of the use of AI in medical diagnosis, the Church emphasizes the importance of attention to moral aspects. The concept of dignity of life and health ethics in the encyclical *Donum Vitae* demands that medical diagnosis be carried out in good faith, respect the rights of the patient, and consider the ethical consequences of each decision. Theologians such as Richard M. Gula emphasize the need for a balance between speed of diagnosis and moral prudence.

Church sources, such as the Charter for Health Care Workers, affirm the ethical responsibilities of health professionals, including in the use of diagnostic technologies. In the Church's view, health practitioners must be defenders of the dignity of life and ensure that AI is used by Catholic moral principles. In conclusion, the Catholic Church's view highlights the balance between technological advancement and moral values. Human rights, patient welfare, and the ethical responsibilities of medical practitioners are the main focus. Therefore, the implementation of Artificial Intelligence in medical diagnosis should be done in good faith, with transparency, and high ethical awareness by the teachings of the Catholic Church, which is rich in moral values.

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