

Artificial Intelligence and Islamic Medical Ethics : Opportunities, Challenges, and Ethical Considerations

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Abstract

The integration of Artificial Intelligence (AI) into modern healthcare systems offers a multitude of advantages, including improved diagnostics, precision medicine, and operational efficiency. Yet, its implementation within Islamic contexts introduces distinctive ethical and theological challenges. This article delves into how AI intersects with Islamic medical ethics by exploring its benefits, associated concerns, potential ethical dilemmas, and the scope for harmonisation with Islamic jurisprudential values. Due to the fact that developments in AI are rapid and fast changing, this article seeks to act as a starting point in scholarship this area and by no means offers all the answers; just an introduction into the importance of engaging in AI and potential challenges.

Introduction

Artificial Intelligence is revolutionising healthcare through its capabilities in pattern recognition, machine learning, and data analytics. While these tools provide enormous potential, the values underpinning Islamic medical ethics require deliberate integration of religious principles such as the sanctity of life, the prohibition of harm, the necessity of informed consent, and the accountability of actions.

Islamic medical ethics is rooted in sources including the Qur'an, Sunnah, and centuries of jurisprudential scholarship. Consequently, adopting AI in Muslim societies or among Muslim patients must account for these dimensions (1). There is pre-existing scholarship on the use of ethical AI in healthcare. Raquel Iniesta emphasizes the indispensable role of human oversight in

ensuring this. The "Five Facts" framework she has developed are a good place to start and underscores the necessity of human involvement at every stage of AI development and implementation. Interestingly, this perspective resonates with Islamic medical ethics, which prioritises human dignity, accountability, and the sanctity of life.

The first of the five facts is human oversight and decision-making. In Islamic ethics, the concept of *niyyah* (intention) is paramount. Ensuring that AI systems are tools that aid, rather than replace, human decision-making preserves the moral agency of healthcare providers. Transparency and explain ability is the second.

The principle of *amanah* (trust) in Islam necessitates that

AI systems be transparent and their decision-making processes understandable to both clinicians and patients.

The third is fairness and non-discrimination. Islamic teachings advocate for justice (adl) and equality. AI systems must be designed to avoid biases that could lead to unjust treatment of any patient group.

The fourth is patient autonomy and consent. Respecting patient autonomy aligns with the Islamic value of hurriyyah (freedom). AI applications should support informed consent processes, ensuring patients are aware of and agree to AI involvement in their care.

And finally, the fifth is continuous monitoring and accountability. The Islamic concept of hisbah (accountability) implies that AI systems should be subject to ongoing evaluation to they adhere to ethical standards and do not cause harm (2).

Opportunities in the Use of AI in ensure Islamic Medical Ethics

The use of AI in Islamic Medical Ethics brings a multitude of opportunities which will be explored below. AI technologies can enhance healthcare accessibility in under-resourced Muslim communities (the British Muslim community is among the groups with the health inequalities in the UK) (3) by enabling remote diagnostics, telemedicine, and language translation tools tailored to Islamic cultures. This promotes the Islamic principle of justice (adl) by ensuring equitable distribution of healthcare resources (4).

The proper use of AI also leads to enhanced diagnostic accuracy of diseases and subsequent patient outcomes. With AI's ability to analyse massive datasets in a short period of time, diagnostic errors can be minimized. This supports the Islamic imperative of preserving life (hifz al-nafs), one of the five objectives of Shariah law (maqasid al-shariah) (5). AI systems, when properly trained, can outperform humans in the early diagnosis of diseases such as cancer and cardiovascular disorders (4). This is the future of healthcare, as the UK Health Secretary has stated in the past (6).

Moreover, AI can be configured to recognize and suggest treatments in a timely manner that comply with Islamic guidelines—such as avoiding medications derived from haram sources (e.g., porcine ingredients) or recommending gender-sensitive healthcare providers. It ensures treatment remains within Shariah parameters (7).

Enhancement of informed consent processes is another opportunity in the use of AI in Islamic Medical Ethics. AI-powered tools can simplify complex medical jargon into accessible information, thus enabling patients - especially those with limited education or language barriers - to make informed decisions. This supports the principle of consent (ridha) and autonomy in Islamic ethics (1).

Ultimately, the use of AI in these spaces can bring real public benefit (al-maṣlaḥah). AI technologies should aim to serve the public good, addressing societal needs and contributing positively to communities. This aligns with the Islamic objective of promoting welfare and preventing harm within society (8).

The lives saved in the long run by preventable illnesses and the use of AI diagnostics means that it is a phenomenon that has to be utilised. Resisting AI is, in a way, akin to seeing the invention of cars in the early 20th century but insisting on using a horse and carriage instead! Modern technology has to be grasped and harnessed, but as this paper details, there are risks too, and these must be mitigated.

Concerns and challenges in the use of AI in Islamic Medical Ethics

Whilst the benefits are profound, there are admittedly challenges in the use of AI. Like all new technologies, these must be borne in mind, and whilst solutions to all the problems are beyond the scope of this paper, questions are posed below. Challenges should not pose a barrier to engagement; however, just a note of caution.

Algorithmic bias and inequality is a genuine concern. AI models trained on biased datasets can reinforce existing disparities. The output of these systems is dependent on the input, and if the latter is flawed due to poor datasets, inequalities can be re-emphasised. This undermines Islamic teachings on universal human dignity and equity. For example, diagnostic tools developed in Western settings may not perform equally well in diverse Muslim populations (9).

There is also a real risk of a loss of human agency and moral responsibility. Islamic ethics emphasizes intention (niyyah) and accountability (taklif). When decisions are delegated to AI, especially in life-critical contexts, it becomes unclear who bears the moral responsibility—is it the physician who is meant to oversee the treatment of the patient, the developer who imbued the machine with

the programming and knowledge to deliver treatment, or the machine which delivers the treatment? This poses a serious ethical and theological issue (10).

Threats to privacy and confidentiality are another a concern in the use of AI. The handling of patient data by AI systems introduces risks of data breaches and misuse. Islam regards personal information as a trust (amanah) and obliges strict confidentiality. Violating this principle can have legal and spiritual consequences (7). Though this can be mitigated, particularly advanced AI systems will be difficult to control. Ultimately,

AI will outpace the ability of Islamic jurists to issue timely and informed fatwas. This could result in a legal vacuum where practitioners lack clear guidance on the Shariah-compliance of emerging technologies (1).

Moreover, AI systems often operate as "black boxes," producing outputs without transparent reasoning. This lack of clarity poses challenges in medical contexts, where understanding the rationale behind decisions is crucial. In Islamic ethics, accountability is paramount, and the inability to trace AI decisions complicates the assignment of responsibility when errors occur (11). This is an issue which needs to be tackled head on. The clearest possible input is a start.

The use of AI in healthcare necessitates a re-evaluation of informed consent. Patients must be adequately informed about the role of AI in their diagnosis and treatment. In Islamic ethics, ensuring that patients are aware and agreeable to the use of such technologies is essential to uphold their autonomy and dignity (11).

There are other challenges which are broader and not necessarily linked to Islamic Medical Ethics but are worth mentioning regardless. An effective AI system must have advanced cybersecurity protection from malware and other malicious actors.

There is always a possibility that AI can be hacked by others but this can be mitigated. A broader philosophical question must also be posed, though its answer is beyond the scope of this paper; what is the impact of the use of AI on healthcare professionals? The incorporation and use of AI in the delivery of healthcare not only transforms patient care but fundamentally reshapes the role and responsibility of the healthcare professional (12).

Automating certain tasks may cause anxiety amongst the medical community, and this links back to the point

earlier in this article on who bears moral responsibility; the machine, the developer or the doctor?

Ethical Dilemmas

In Islam, life is sacred and it is God who bestows life and takes it away. AI systems predicting futility of treatment raise the question of who authorizes life support withdrawal. Can machine-predicted prognosis override human deliberation grounded in Islamic ethics? There is also a question to be posed with regards to AI in genetic screening and reproductive health.

Predictive algorithms in prenatal care may encourage selective abortion based on disability risk. This challenges Islamic teachings on predestination (qadar) and the acceptance of divine will. Jurists remain divided on the permissibility of such interventions (7).

Thinking in the very long term, gender sensitivity in robotic care is another area that is worthy of consideration. Many Muslims, patients may prefer same-gender caregivers, especially in more intimate areas (gynaecology for example). AI-driven robots or virtual assistants could inadvertently breach norms of modesty and gender segregation, necessitating culturally sensitive design (9). Admittedly, this is not yet on the horizon.

How AI may improve ethical standards in Islamic Medical Practice

The study by Al Kubaisi (13) outlines a foundational framework for AI ethics rooted in the Sunnah of the Prophet Muhammad. This religious source offers guiding principles that can directly inform the ethical use of AI in Islamic Medical Ethics. These principles are not merely theoretical; they offer actionable ethical standards applicable to real-world medical scenarios.

Any AI system used in healthcare must have a design and function that aligns with Shariah principles. For instance, a diagnostic AI should not support or promote treatments that involve prohibited (haram) procedures or substances. As mentioned earlier in the paper, the correct input into systems is crucial. Bias in healthcare AI can lead to unequal treatment, violating the Islamic value of justice ('adl). The Prophet ﷺ (PBUH) said: "All of you are from Adam, and Adam is from dust" — emphasizing human equality.

AI systems must therefore be trained and deployed with safeguards against algorithmic bias that could result in

discriminatory medical outcomes. Safety, Control, and Accountability are also key. Ensuring that AI systems do no harm is supported by the prophetic principle: “There should be neither harm nor reciprocation of harm” (Ibn Majah). AI in healthcare must allow for human oversight, and liability must be clearly defined in cases of error — echoing the Prophet's emphasis on skilled practice and responsibility in actions.

The correct use of AI in Islamic Medical Practice can also work in realising the objectives of Shariah by improving health outcomes (preservation of life), enhancing informed decision-making (preservation of intellect), and safeguarding personal and genetic information (preservation of lineage and property).

In the paper, “A Preliminary Survey of Muslim Experts’ Views on Artificial Intelligence” by Aliff Nawiet al. (14) the survey revealed a general lack of awareness among Muslim experts about the extensive impact of AI on Muslims. This highlights the need for educational initiatives to inform stakeholders about AI's ethical implications, ensuring that AI applications in healthcare are developed and used in ways that are consistent with Islamic values. It seems that the global Muslim population is still unaware of the effects of AI, and with the advent of its use in healthcare at mass scale on the horizon, education in this area is a necessity. With better education and with the aforementioned opportunities, the use of AI in Islamic Medical Ethics is a positive.

The use of AI allows for the creation of a hybrid ethical framework. This model allows for AI systems that not only maximize benefits but also uphold intrinsic Islamic values like justice, compassion, and human dignity, ensuring that AI contributes positively to medical ethics. This blends Islamic ethical reasoning with elements of both deontological (duty-based) and consequentialist (outcome-based) ethics. This integration is key to making AI systems ethically robust and compatible with Islamic values, especially in fields like medical ethics.

Islamic ethics traditionally blends both duties to God (ḥuqūq Allāh) and to others (ḥuqūq al-‘ibād) as well as concern for consequences, particularly through the concept of maṣlaḥa (public welfare) (15). Medical AI often makes recommendations or decisions that can directly impact life, death, and dignity. A hybrid model would ensure that AI doesn't just make “efficient” decisions but also respects moral and religious imperatives. And ultimately avoids purely data-driven decisions by integrating moral reasoning grounded in Shariah principles. An example would be an AI system

used in triage during a healthcare crisis that could be guided not only by maximizing lives saved (utility) but also by ethical priorities like fairness, compassion, and the sanctity of human life. Islamic ethical thought is already hybrid in nature (15) seeing that textual sources such as the Qur'an and Sunnah are used as well as rational tools, otherwise known as Qiyās (analogical reasoning), Istihsān (juristic preference), Maṣlaḥa are utilised too.

These tools would subsequently enable scholars to address novel contexts like AI by applying fixed moral principles like prohibitions against harm and injustice. They would also likely be involved in evaluating outcomes for the public good such as improving healthcare access with AI. A hybrid Islamic ethical framework could shape AI systems to recommend treatment plans that respect religious norms (e.g., avoiding haram medications unless necessary). flag ethically sensitive decisions (e.g., end-of-life care) for human review, preserving accountability (15).

It could also be programmed with justice-aware algorithms that avoid disadvantaging vulnerable Muslim populations. There are benefits to this framework in terms of ethical pluralism and the fact that it accommodates both traditional Islamic norms and contemporary ethical reasoning. It is also likely to be considered legitimate and gains trust from Muslim users and institutions and is ultimately flexible; it can adapt to evolving AI contexts while remaining anchored in divine and moral obligations.

Theological and Jurisprudential Reflections

The use of AI in this field forces a re-evaluation of classical concepts such as intention, moral agency, and divine will. For example, if a physician follows AI advice in good faith, is the accountability solely theirs? Additionally, AI could assist in issuing responsive fatwas by simulating outcomes under different fiqh scenarios, but scholars caution against over-reliance on non-human judgment (10).

Collaborative dialogue between technologists, ethicists, and Islamic jurists is essential. The development of standardized Shariah review boards for AI applications in medicine is a recommended pathway (1). The deployment of AI in making autonomous medical decisions raises theological questions about human agency and divine will. In Islam, life and death are under God's domain, and the use of AI in decisions like life support or end-of-life care must be carefully considered

to avoid overstepping spiritual boundaries (14). This is a challenge to work through. AI systems are also currently being developed in secular contexts which means that Islamic cultural and religious nuances are unlikely to be considered. This oversight can lead to ethical conflicts when such technologies are applied in Muslim-majority societies. There is a need for AI systems to be culturally sensitive and adaptable to Islamic ethical frameworks (14).

Shariah-Compliant Design must be factored in during the development of AI systems. Developers must consult religious scholars to ensure AI medical tools do not conflict with Islamic principles from the outset. AI systems should be developed with purposes that align with Islamic values, ensuring that their functions serve the common good and do not lead to harm (13). Furthermore, these systems must operate in a neutral and impartial manner without bias, providing equitable services to all individuals regardless of race, gender, or socioeconomic status. This aligns with the Prophet Muhammad's teachings on justice and equality.

Furthermore, AI ethics can be incorporated in Islamic and medical education to promote informed, values-driven implementation. To progress this, the establishment of formal institutions that assess new technologies for compliance with both Islamic law and bioethical standards is necessary. And ultimately, scholars may use AI tools to assist in *ijtihad* regarding complex medical questions, provided human reasoning remains central (13).

It is interesting that Islamic bioethics can be a valuable ally in shaping global ethical standards for AI in medicine from a non-religious standpoint too with the lessons taken being applied in the maintenance of human-centric care and the prioritisation of informed, spiritually competent consent (16).

There are other considerations that are not immediately obvious but are worth reflecting on too. One is environmental sustainability; it is becoming increasingly clear that early models of generative AI such as Chat GPT are water intensive and the data centres that they rely on use up huge amounts of energy (17). Whilst these are still early iterations and it is likely that they become less energy intensive as they develop, AI development should consider environmental impacts, promote sustainability and avoiding harm to the planet, as Islam advocates for the protection of the environment. And ultimately, the right balance has to be struck between the use of human reason and expertise and that of the machine. While AI can augment human capabilities, it

should not replace human judgment or lead to overreliance on technology. Maintaining a balance ensures that human values and interactions remain central. The replacement of humans by AI can seem as if it is something taken by a science fiction film, but should super intelligent self-replicating AI one day arise, it may find humanity obsolete (18).

Conclusion

The possibilities of AI in healthcare seem limitless at the moment, especially with it being such a recent phenomenon, which has not been fully explored or maximised. AI can give healthcare professionals the bandwidth to focus on more complex cases and carries immense potential in terms of early diagnostics. It holds transformative potential for enhancing healthcare delivery within the bounds of Islamic medical ethics. However, this potential must be carefully balanced with vigilant ethical scrutiny and jurisprudential oversight. A proactive, inter-disciplinary approach involving religious scholars, medical practitioners, and AI developers is essential to ensure AI's integration is beneficial and ethically sound (4).

Whilst AI holds promise for advancing healthcare, its integration into Islamic medical ethics presents multifaceted challenges. Addressing these concerns requires a collaborative approach that respects Islamic ethical principles, ensures transparency, and maintains human accountability in medical decision-making. The age of AI has well and truly started; as Muslim scientists and inventors were at the forefront of discovery and innovation during the so called "dark ages", we need to re-grasp this mantle and ensure we are again at the forefront, especially with the importance of the correct input and instilling Islamic values. Whilst we live in uncertain times, there is an opportunity for Muslims to be spearheading the AI revolution and helping humanity progress.

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