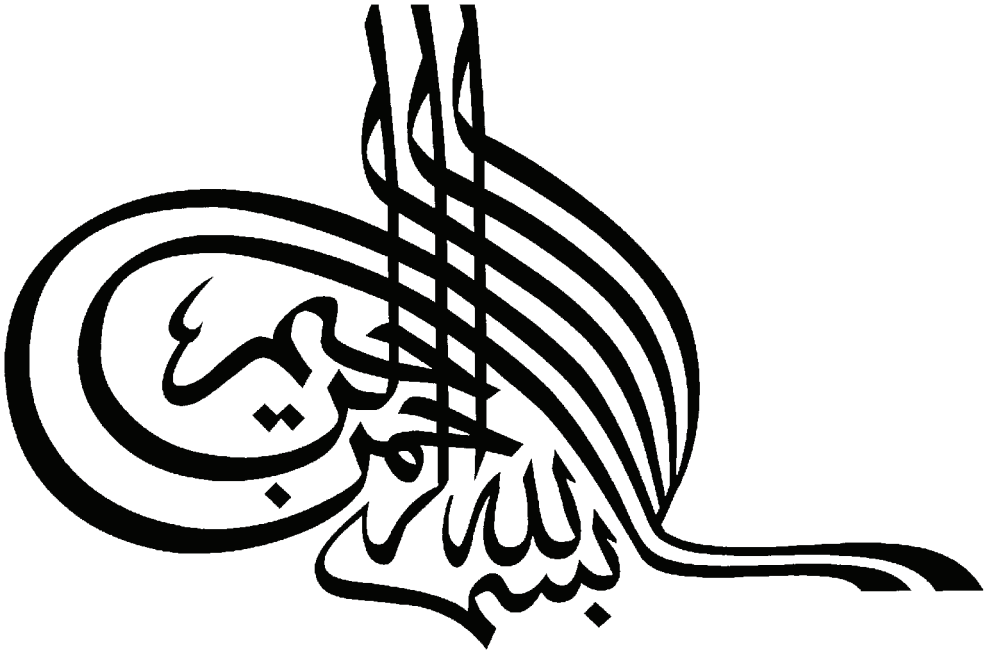
بسم الله الرحمن الرحيم

"...وَقُل رَّبِّ زِدْنِي عِلْمًا" سورة طه: 114

"*O my lord! Advance me in knowledge*"

The Glorious Qur'an: Taha 20: 114

FIMA
Year Book 2024

Federation of Islamic Medical Associations

الاتحاد العالمي للجمعيات الطبية الإسلامية

ENCYCLOPEDIA OF ISLAMIC MEDICAL ETHICS- PART X

موسوعة الأخلاقيات الطبية الإسلامية- الجزء العاشر

CONTEMPORARY AND CONTROVERSIAL HEALTH ISSUES: MEDICAL AND BIOETHICAL PERSPECTIVE

المنظور الطبي الأخلاقي لقضايا صحية جدلية معاصرة

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All praises be to Allāh (ﷻ) the Most Beneficent, Most Merciful.

Peace and blessings be upon Prophet Muhammad (ﷺ), his family, companions and followers until the end of time.

The rapid evolution of medical technology continues to outpace societal consensus on ethical boundaries, creating complex dilemmas where science, morality, and faith intersect. In an era marked by rapid biomedical advancements, global health crises, and evolving socio-ethical norms, healthcare professionals face increasingly complex moral dilemmas. The intersection of modern medicine and Islamic ethics is more relevant—and more tested—than ever.

As members of the Federation of Islamic Medical Associations (FIMA), we bear a unique responsibility to uphold clinical excellence while remaining deeply rooted in the ethical guidance of our faith. As Muslim healthcare practitioners, there exists a dual responsibility to uphold evidence-based medical standards while aligning decisions with Islamic ethical principles. FIMA's work in advancing health equity, humanitarian relief, and ethical discourse places us at the forefront of global Muslim health leadership.

These contemporary and controversial health issues demand careful navigation through Islamic jurisprudence (*fiqh*), which views ethics as inseparable from divine law (*Sharia*) and rooted in *ilm* (knowledge), *hikmah* (wisdom), and *taqwa* (God-consciousness).

The FIMA Yearbook 2024 explores several contemporary health issues from a combined medical and Islamic perspective, underscoring the need for nuanced, principled, and compassionate responses in this evolving discourse. In this 10th chapter of the Encyclopaedia of Islamic Medical Ethics, with the theme Contemporary and Controversial Health Issues: Medical and Bioethical Perspectives, we explored vaccination, gene therapy, moral distress-moral injury-burnout, artificial intelligence, gender issues, assisted dying, medical insurance, healthcare of marginalised populations, social media in healthcare, and patient privacy and confidentiality in the tech era.

In responding to these challenges, Muslim physicians must be more than clinicians—we must be *murabbi* (nurturers), *muslih* (reformers), and shuhada' (witnesses) to the truth. FIMA's strength lies not only in its global reach but in its ability to harmonise medicine, ethics, and faith. Let us continue to lead with *hikmah* (wisdom), *amanah* (trust), and *ikhlas* (sincerity), placing the well-being of our patients and the guidance of Allah at the heart of all we do.

As technology advances forward, medicine's highest calling remains unchanged: to heal without compromising human dignity. The Islamic ethos—balancing science with spirituality, autonomy with divine authority—offers a roadmap for this timeless pursuit.

In the words of Imam al-Shafi'i, "No knowledge is more worthy than that which brings benefit to humanity." May our pursuit of health equity, scientific integrity, and ethical clarity be a service to both humankind and the Divine.

My sincere gratitude to all the contributors to Yearbook 2024. And my special thanks to our dear sister Elham Mohamad Swaid at the Islamic Hospital, Amman-Jordan for her stellar secretarial support. May Allāh (ﷻ) reward and bless her bountifully.

We pray for Allāh's (ﷻ) guidance, mercy and acceptance in all our endeavours. Unto Him (ﷻ) we seek refuge and forgiveness for our failures and shortcomings.

Yours sincerely,
Musa Mohd Nordin
Editor in Chief
FIMA Yearbook

FEDERATION OF ISLAMIC MEDICAL ASSOCIATIONS (FIMA) IN BRIEF

- On 31st December 1981, FIMA was formed in Florida, USA. Senior medical professionals representing ten Islamic Medical Associations (IMA), from various parts of the world, convened and laid down the foundation of the Federation.
- FIMA was incorporated in the state of Indiana as a not-for-profit corporation on 18th January 1982 and re-incorporated in the State of Illinois on 30th March 1999.
- FIMA enjoys Tax Exempt status under Section 501 (C) (3) US Federal Income Tax by the Internal Revenue Service.
- In 2005, FIMA acquired Special Consultative Status to the United Nations Economic and Social Council (UN-ECOSOC).
- FIMA membership now include Islamic Medical Associations (IMA) and associates from 50 countries.
- FIMA aims to foster the unity and welfare of Muslim medical and healthcare professionals, promote healthcare services, education and research through the application of Islamic principles, mainstream Islamic perspectives of medical ethics, mobilize professional and economic resources for medical and humanitarian relief and collaborate with partners for the mercy and healing of mankind.
- First medical jurisprudence conference, Amman 1991.
- First humanitarian relief conference, Paris 1994.
- Launch of FIMA Year Book, Jakarta 1996.
- Consortium of Islamic Medical Colleges (CIMCO), Islamabad 2001.
- Islamic Hospital Consortium (IHC), Islamabad 2001.
- International Muslim Leaders Consultation on HIV/AIDS, Kampala 2001.
- FIMA Web, Kuala Lumpur 2005.
- FIMA Save Vision, Darfur 2005.

- FIMA Save Smile, Jeddah 2008.
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- Encyclopedia of Islamic Medical Ethics, Kuala Lumpur 2012.
- FIMA App on Care of Muslim Patients (Elsevier), Kuala Lumpur 2012.
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- FIMA Declaration on Addiction, Cape Town 2013.
- FIMA Declaration for Polio Eradication, Cairo 2013.
- FIMA Book on Immunization Controversies, Makassar 2015.
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- International Journal of Human and Health Sciences (IJHHS), Istanbul 2017.
- FIMA Life Saver, Amman 2018.
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- FIMA Save Earth, Jakarta 2021.
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- FIMA Declaration on 2030 Strategic Planning 2023

CORRESPONDENCE:

FIMA YEAR BOOK SECRETARIAT: Ms. Elham Mohamad Swaid
ISLAMIC HOSPITAL
AMMAN, ABDALI, AL ZUBAIR BEN AL AWWAM
JORDAN
2414 Amman 11181 Jordan
EMAIL: medical.dept@islamic-hospital.org

FIMA WEBSITE: www.fimaweb.net
INSTAGRAM: official.fima
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ARTIFICIAL INTELLIGENCE AND ISLAMIC MEDICAL ETHICS: OPPORTUNITIES, CHALLENGES, AND ETHICAL CONSIDERATIONS

*Sharif Kaf Al-Ghazal**

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 in this area and by no means offers all the answers; just an introduction into the importance of engaging in AI and potential challenges.

Keywords: Artificial Intelligence, AI, Islamic Bioethics.

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 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.

*Prof. Sharif Kaf Al-Ghazal
Consultant Plastic Surgeon, Bradford Teaching Hospital, Bradford, UK
E-mail: skalghazal@hotmail.com

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 so they adhere to ethical standards and do not cause harm[2].

Opportunities in the Use of AI in Islamic Medical Ethics

The use of AI in Islamic Medical Ethics brings a multitude of opportunities which will be explored. AI technologies can enhance healthcare accessibility in under-resourced Muslim communities (the British Muslim community is among the groups facing health inequalities in the UK) by enabling remote diagnostics, telemedicine, and language translation tools tailored to Islamic cultures[3]. 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 better 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 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 should be a note for 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 reinforced. 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. 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 Muslim, 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 (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 action.

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-ʿibād*) 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 Shari'ah 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) and 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 assesse 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 tool 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. 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 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, promoting 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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ARTIFICIAL INTELLIGENCE AT THE BEDSIDE - WHAT THE MUSLIM MEDICAL COMMUNITY NEEDS TO DO?

Ezzaddin I. AlWahsh, Mohammad Annab*

Abstract

Artificial intelligence (AI), including machine learning and deep learning, is changing healthcare by detecting patterns in data and enabling computing beyond human capability. For the Muslim medical community, embracing AI aligns with the Islamic encouragement to pursue knowledge and innovation. However, the current engagement of Muslim researchers, countries, and communities in AI-driven medicine remains limited.
While AI models show promise in research settings, their clinical translation often falls short within the Muslim medical community, underscoring the need to bridge the gap between theoretical advancements and practical applications tailored to the unique needs and representation of Muslim populations.

Additionally, biases in AI algorithms, due to underrepresentation of Muslim populations in datasets, risk negatively impacting Muslim patients and professionals.

Looking ahead, there is a significant opportunity for the Muslim medical community to take the lead in AI research. By ensuring data representation and addressing ethical challenges, we can pave the way for a future where our community drives innovation in healthcare, all while safeguarding the interests of our population.

Keywords: Artificial Intelligence, Clinical Practice Innovation, Muslim Medical Community, Ethics.

AI applications in clinical medicine

Artificial intelligence (AI) is an overarching term encompassing machine learning, deep learning, and their applications. A primary challenge in discussing AI is its versatile nature and the broad range of possible implementations. In this article, the focus is on introducing practical clinical AI examples and examining their significance to the Muslim community—particularly the Muslim medical community.

*Dr. Ezzaddin I. AlWahsh MD, MBA
Consultant of Internal Medicine and Applied Artificial Intelligence, CareFlow AI Consulting, Minneapolis, MN, USA
Email: Alwahsh.ezzaddin@careflowai.com

Mohammad Annab, Medical Student, Jordan University of Science and Technology, Irbid, Jordan

When approaching AI in healthcare, one should view it as an applied technology—much like vaccinations, radiographic investigations, and chemotherapy. Allah has enabled humanity to develop all of these technologies. Therefore, one must approach AI and use it responsibly utilizing Islamic concepts for the betterment of humankind, always striving to fulfill Allah's commands[1].

"وَسَخَّرَ لَكُمْ مَا فِي السَّمَاوَاتِ وَمَا فِي الْأَرْضِ جَمِيعًا مِّنْهُ ۚ إِنَّ فِي ذَٰلِكَ لَآيَاتٍ لِّقَوْمٍ يَتَفَكَّرُونَ" 45:13

"And He has subjected to you whatever is in the heavens and whatever is on the earth—all from Him. Indeed, there are signs for people who reflect."

When examining AI in clinical medicine, attention is directed toward applications beyond *in vitro* research. AI beyond static data sets that was collected and cleaned in ideal conditions. Instead, utilizing data from daily activities in different healthcare environments in real time. Notably, applied AI is transforming medical practice through two main avenues: clinical knowledge and clinical operations[2].

Medicine is inherently knowledge-intensive, and clinical tasks frequently involve generating and applying knowledge for the benefit of patients. As medical specialties expand and the volume of information and guidelines grow, manual review of information becomes labor intensive and error prone. AI-driven computational methods address this challenge by processing both structured and unstructured data, identifying important patterns, and delivering actionable insights to end users, thereby enhancing patient care at the bedside[3].

For example, predictive models have been employed to assess the risk of sepsis and asthma exacerbations, helping reduce morbidity and mortality[4]. Generative AI has been used to interpret CT scan images, conserving resources and improving the quality of care[5]. In addition, Machine Learning and Deep Learning techniques can summarize patient charts and clinical encounters, minimizing the time spent on chart reviews and mitigating the "noise" in digital healthcare systems. Computer vision (another form of applied AI) offers further examples, such as scanning pathology specimens to detect abnormal cells[6]. It is worth mentioning that the extent of AI implementation varies among medical specialties: radiology and cardiology, which rely heavily on imaging and digitized investigations, often employ more advanced AI-based tools.

Many of the operations and workflows in medicine result in wasted resources (materials or time). This waste can negatively affect patients' experience and healthcare outcomes. It also reduces our system's ability to provide care to as many people as possible. Islam instructs its followers to reduce waste and avoid it in their daily practices[7].

"يَا بَنِي آدَمَ خُذُوا زِينَتَكُمْ عِندَ كُلِّ مَسْجِدٍ وَكُلُوا وَاشْرَبُوا وَلَا تُسْرِفُوا ۚ إِنَّهُ لَا يُحِبُّ الْمُسْرِفِينَ"7:31

Approximate English translation: *"O Children of Adam! Dress properly whenever you are at worship, and eat and drink, but do not be wasteful; He certainly does not like those who waste".*

Mindful and responsible use of technologies—including AI—fulfills the Muslim commitment to this teaching. For example, AI significantly influences healthcare operations. Ambient listening—where a physician can walk into a room with a recorder to generate a documented summary of the patient encounter—helps

physicians focus more on their patients and reduces the time spent on documentation[8]. Physicians have described great satisfaction with this tool, which may ultimately lead to better patient outcomes.
Additionally, AI streamlines operating room scheduling and enhances outpatient workflow optimization, using machine learning to maximize resource utilization and increase the number of surgeries performed with the same resources. Other operational benefits include assistance with discharge planning and various administrative tasks, highlighting AI's expansive role in healthcare efficiency[3].

AI Translation to the Bedside

AI translation to the bedside is the process by which the medical community strives to safely transition AI model successes from controlled laboratory environments—where data are often optimized and siloed—into real-world clinical settings that rely on day-to-day data[6]. A model's effectiveness in the lab does not guarantee success in practice, and a significant challenge lies in bridging the gap between research success and real-life success, focusing on both performance and AI's influence on clinical outcomes while upholding ethical and societal values[7].
Bridging this gap requires tremendous effort and strong resolve, especially since ethical implications may not be a top priority for many industrial and commercial AI leaders. Muslims, guided by the Quranic principle of working for the greater good of humanity, are particularly positioned to take a leading role in this endeavor[8].

"كُنتُمْ خَيْرَ أُمَّةٍ أُخْرِجَتْ لِلنَّاسِ تَأْمُرُونَ بِالْمَعْرُوفِ وَتَنْهَوْنَ عَنِ الْمُنْكَرِ وَتُؤْمِنُونَ بِاللَّهِ" (3:110)

"You are the best community brought forth for [the benefit of] mankind. You enjoin what is right and forbid what is wrong and believe in Allah…"

Challenges in AI Clinical Translation

One of the significant challenges in AI translation is bridging the gap between technical and clinical components. Many AI solutions are predominantly tech-focused, often overlooking non-technical aspects such as use cases, data pipelines, clinical orchestration, and regulatory or ethical considerations. For instance, a 2021 survey among Muslim experts highlighted the consensus on the necessity of ethical checklists and guidelines to protect Muslim users in future AI products. The study emphasized that developing AI in a manner that accounts for the ethical components pertinent to Muslim communities is crucial.
Another challenge in AI translation is education and awareness. Many physicians may not fully grasp the importance of AI, and within the Muslim community, AI might be perceived as either science fiction or ethically questionable due to its predictive nature. This perception can hinder the adoption or utilization of AI tools. Additionally, concerns about privacy, safety, and security are paramount and underscore the need for comprehensive education on these topics.
Building effective alliances between organizations at various levels is also essential. In the U.S., initiatives like the Coalition for Health AI (CHAI) exemplify efforts to establish such collaborations. Similarly, in Europe, multiple acts and organizations are working towards building alliances to advance AI in a regulated and ethical manner.
A particular challenge within the Muslim community is the limited number of newly funded AI startups. When examining the top countries with AI startups, Muslim-majority nations are notably underrepresented. For

example, data from 2013 to 2023 indicates that the United States leads with 5,509 AI startups, followed by China with 1,446, and the United Kingdom with 727. Muslim-majority countries do not feature prominently in these rankings.
One more challenge particular to the Muslim medical community is data literacy. This includes data infrastructure, quality, and sustainability. In other words, how to write, read, and communicate medical data. Our collective view of data should change into looking at data as assets of our medical systems that can be utilized in the future to build responsible AI systems.

Responses to AI Translation Challenges

To address these challenges, it is essential to implement robust data governance frameworks. Data governance involves setting up policies, standards, and best practices to manage data throughout its lifecycle. This ensures the data is high-quality, secure, and usable. Additionally, fostering data literacy within healthcare organizations is equally important. Data literacy—the ability to read, write, and communicate data—empowers all team members, from clinicians to administrators, to collaborate effectively and derive meaningful insights from data.

Equally critical is bridging the gap between research and real-world application. Many AI solutions show remarkable potential in controlled research environments but falter when deployed in clinical practice. A case in point is the COVID-19 pandemic. Thousands of AI models were developed to predict infections, yet few succeeded in real-world settings[9]. This highlights the importance of involving physicians and bedside workers, who are the primary users of AI systems, in their development and implementation. These healthcare professionals bring invaluable perspectives, ensuring that AI tools are practical, ethically responsible, and aligned with everyday clinical workflows.

As the Qur'an reminds us:
"Help one another in righteousness and piety, but do not help one another in sin and transgression" (Surah Al-Ma'idah, 5:2).

This verse underscores the importance of collaboration—a principle that is essential in the multidisciplinary efforts needed to develop and implement AI systems. Data scientists, IT specialists, physicians, and administrators must work together to create tools that are both innovative and operationally sound.

Additionally, the Muslim medical community faces challenges in aligning AI advancements with Islamic ethical principles, such as prioritizing patient welfare (Ṣalāḥ), equity (ʿAdl), and informed consent (Šūrā). This necessitates a deliberate effort to adapt AI tools to respect these principles while meeting global standards of clinical effectiveness.

Opportunities for Tailored AI Applications

To bridge the gap, the following strategies can be employed:
1. Cultural and Religious Contextualization:

AI tools must be contextualized to address the unique cultural and religious needs of Muslim populations. For instance, AI-driven dietary recommendations for diabetic patients should consider halal dietary laws.

2. Localized Dataset Development:
The development of localized datasets that include diverse demographics from Muslim-majority countries can significantly improve

AI model performance and reduce biases. Studies like those conducted by Kaushal et al. (2020) emphasize the importance of inclusive datasets in mitigating algorithmic biases.

3. Collaborative Frameworks:
Collaborative efforts between Muslim healthcare institutions and global AI research centers can accelerate innovation while ensuring that solutions are culturally and ethically appropriate. Partnerships with organizations such as the Islamic Organization for Medical Sciences (IOMS) can help bridge the gap between theoretical advancements and practical applications.
4. Training and Capacity Building:
Investing in AI education and training programs tailored to healthcare professionals in Muslim-majority regions can enhance the adoption and effective use of these tools.
5. Ethical Oversight:
Establishing ethical oversight bodies within Muslim medical institutions can ensure that AI tools adhere to Islamic ethical principles, safeguarding both patients and practitioners.
Recognizing data as a valuable asset is fundamental to the future of healthcare. When treated as such, data can power AI systems that deliver better patient outcomes and streamline operations. By building culturally and contextually sensitive AI systems, the Muslim medical community can not only improve healthcare within its own population but also contribute to global AI innovation[10,11].

Future directions

AI implementation is not an overnight endeavor; it requires visionary leadership, as it will serve as a key differentiator shaping the future of healthcare across nations. It is no exaggeration to assert that AI is the new electricity. If our communities take the initiative to develop responsible AI systems, they will be one step closer to leading the future medical landscape. It is essential to recognize the vast opportunities for growth and advancement in the field of responsible AI. Many AI solutions and systems are neither mature nor responsible, and it is only a matter of time before such systems are exposed and withdrawn from the market.

A critical step toward achieving responsible AI is ensuring comprehensive representation of patient data, establishing robust data governance strategies and programs, and treating data as a valuable asset. Encouraging bedside healthcare professionals to adopt best practices for data collection and definition is equally vital. Implementing patient portals that facilitate communication between patients and physicians while enabling comprehensive documentation of healthcare activities can significantly enhance data-driven decision-making. Furthermore, collaborating with organizations that share similar objectives and forming alliances will help ensure the accurate representation of Muslim patient data.

As we navigate the ethical challenges of AI, we have a unique opportunity to foster participation and promote equity within the Muslim medical community. It is imperative to adopt AI for the greater good, adhering to Islamic principles that emphasize ethical and responsible technological advancements. By systematically exploring and refining AI use cases, we can ensure that AI applications align with the values and beliefs of our patients.

The Muslim medical community has the potential to drive innovation while safeguarding the interests of its population. There remains significant room for innovation in this domain, and AI adoption offers numerous opportunities for

advancement. By prioritizing education, research, and direct implementation, the community can contribute to a balanced approach to AI—shifting the focus from performance metrics to responsible applications that benefit patients and society. This approach aligns with fundamental principles of fairness, equity, and ethical responsibility.

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Table: Key Barriers and Solutions for AI Adoption in the Muslim Medical Community

Barriers	Solutions
Underrepresentation in Training Datasets	Develop dynamic datasets inclusive of Muslim populations
Lack of Contextualization	Understand non-technical components of AI, Design AI systems to be culturally and ethically sensitive AI tools
Limited Resources	Establish partnerships and alliances with Islamic global research centers
Ethical Concerns	Form ethical oversight committees within medical institutions and generate ethical standard lists for AI development

ASSISTED DYING

*Amin Kashmeery**

Introduction

The term "Assisted Dying" has been invented to dignify the act, just like calling thievery "kleptomania".

In fact, "Assisted Dying" implicitly denotes a form of suicide, simply because sound logic does not assume assistance to be imposed on someone without his/her consent, or even invitation. It is perhaps worth noting that linguistically the act itself cannot be expressed in the passive sense; i.e. "someone has been suicided".

The reason for this is that "suicide" is a verb that implies a deliberate and intentional act, and using the passive voice would imply that the act was done to the person, rather than by the person.

So, let there be no misconception here, "Assisted Dying" is at best a suicidal act inflicted on someone by his/her own choice, or even invitation. Therefore, the correct description would be to call it "Assisted Suicidal Dying". Period.
From this standpoint, let us delve into its ramifications; legally, morally and ethically.

The Legality of "Assisted Suicidal Dying":

1. Under Islamic law, it is categorically impermissible.

This draws on Quranic and Sunnah injunctions:

"وَلاَ تَقْتُلُواْ أَنفُسَكُمْ إِنَّ اللّهَ كَانَ بِكُمْ رَحِيمًا" القرآن الكريم: سورة النساء: آية 29.

"You shall not kill yourselves". The Glorious Qur'an: 4 :29.

Surely Allah is ever Compassionate to you.

"وَمَن يَفْعَلْ ذَلِكَ عُدْوَانًا وَظُلْمًا فَسَوْفَ نُصْلِيهِ نَارًا وَكَانَ ذَلِكَ عَلَى اللَّهِ يَسِيرًا". القرآن الكريم: سورة النساء: آية 30.

"And whoever does this by way of transgression and injustice him shall We surely cast into the Fire; that indeed is quite easy for Allah" . The Glorious Qur'an: 4:30.

*Amin Kashmeery, BSc. PhD.
Emeritus Professor of Physiology, Umm Al-Qura University, Makkah.
Former Head, Biomedical Ethics Section,
King Saud Bin Abdulaziz University for Health Sciences,
King Abdulaziz Medical City, Jeddah – Riyadh
Chairman Elect, Global Council for Islamic Biomedical Ethics
E-mail: oxforefo@yahoo.com

عن ثابت الضحاك قال: قال النبي ﷺ: "ومن قتل نفسه بشيء عذب به في نار جهنم".

The Prophet Muhammad (PBUH) said:

"And whoever kills himself with something ،he/she will be tormented with it in the Fire of Hell."

This hadith, narrated in Albukhari, emphasizes the magnitude of suicide as a great sin, and the severity of the punishment that awaits those who take their own lives in the hereafter.
(see attached Fatwas pertinent to" Assisted Dying")

2. Under Judeo-Christian Tennets.

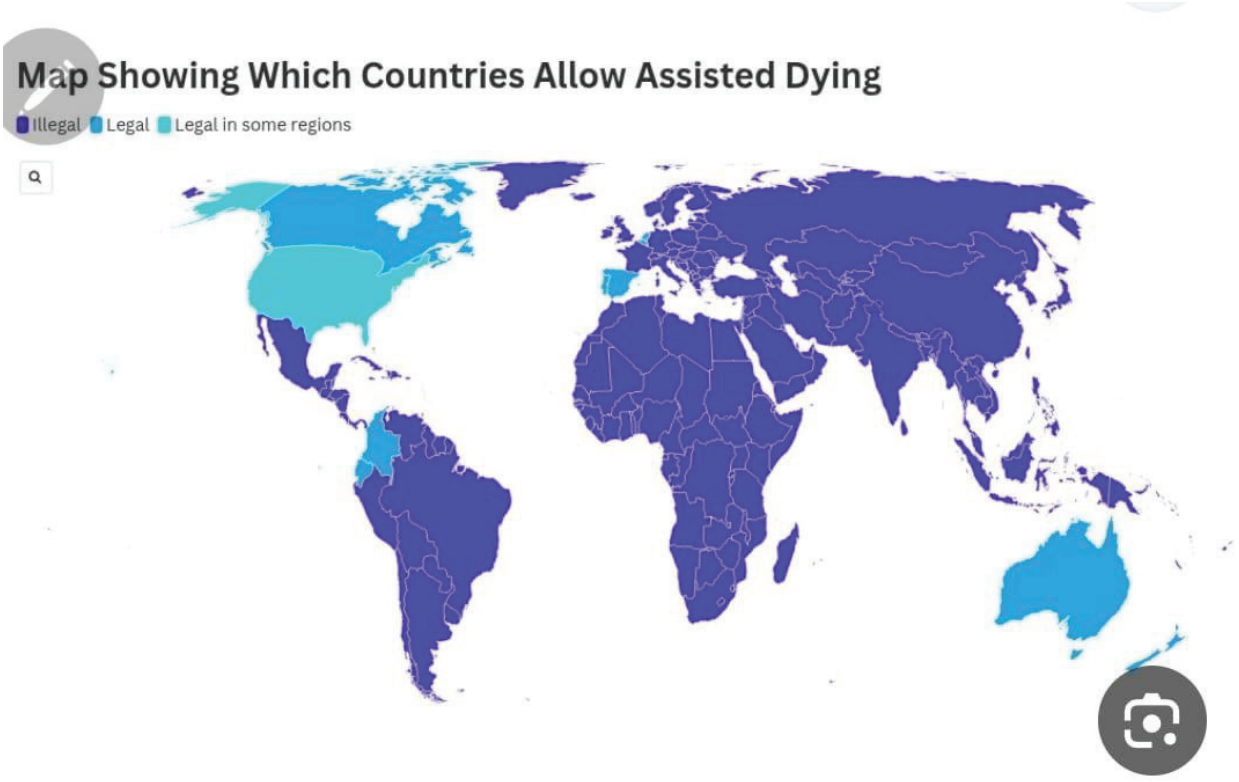
In the original canonical Jewish and Christian texts, suicide is considered a major sin.
In early Christian traditions, we find condemnation of suicide reflected in the teachings of Lactantius, St. Augustine, Clement of Alexandria, and others.

As for the Jewish faith, the Talmud says, "For him who takes his own life with full knowledge of his action no rites are to be observed." This means the community is not obligated to observe the usual mourning rites, such as saying the Kaddish prayer or performing the traditional burial rituals. (https://www.jewishvirtuallibrary.org/suicide-in-judaism)

However, modern views of followers of both faiths have secularized the issue, which thereby became debatable leading to almost total permissibility in some instances, such as terminal illnesses.

3. Under Secular Western Law:

Many Wesrern countries, in which laws are issued through parliamentary venues, allow suicide under the guise of "Assisted Dying". (see attached infographics)



Source: World Population Review

The Paradox of Politics and Scientific/Medical Decision-making

This aspect is best featured in a correspondence with the speaker of the House of Commons, a prominent politician in the British parliament.

To:
The Right Honourable Sir Lindsay Hoyle,
U.K. Parliament,
The House of Commons,
London SW1A OAA
U.K.
30-11-2024

Dear Sir Lindsay,
In my capacity as Chairman of The Global Council for Islamic Biomedical Ethics (GCIBE), I am forwarding to you Fatwas, the essence of which has been reiterated by Grand Muftis in several countries addressing the controversial issue of "Physician- Assisted Suicide" bill awaiting voting on November 29th 2024 in The British House of Commons. The fact that several Muslim Grand Muftis raised voice, is a sign of great concern. As indicated in the attached Fatwas (please see enclosed sample translation thereof), the concern is not only over Muslims being drawn into this scheme. It rather promulgates unequivocally great concern over human life in general. Human life is sacred according to Islamic teachings, regardless of tenet,
religion, race or nationality of the potential candidates targeted by the proposed bill in question.

In principle, medicine and science in general are said to be "APOLITICAL". The fact that your Health Minister, Mr. Stephen Kinnock, has said he will vote in favour of the assisted dying bill, which is in sharp conflict with his own boss Wes Streeting, the Health Secretary, who will oppose it, strongly confirms that principle. This shows that these two politicians have two conflicting judgement premises, resulting in a skewed equation which could inflict unforeseen agony on a wide sector of society. Professionally, Mr. Kinnock seems to be off the basic facts of his own responsibilities as Health Minister, which include Palliative Care. Is he missing the point of view expressed by his own boss, the Health Secretary, who clearly states that his concerns are backed up by Marie Curie, who reports that one in four people in the UK die without the palliative care that they need? The Health Secretary has even confirmed in an interview that he will vote against the Lead beater Bill because he does not believe palliative care in the UK is good enough to give people a real choice -adding: "I worry about coercion and the risk that the right to die feels like a duty to die on the part of, particularly, older people." It is rather inappropriate on the part of our GCIBE, in a rational debate on a serious matter like this, to go down the subjective route others might trespass, where Mr. Kinnock is said to be merely jockeying for prominence by adopting the trend the Prime Minister is trying to establish for political gains. That skewed equation speaks loud and clear that the issue should be addressed only by experts. These include entities of deep insight of the issue; into its etiology, social causes, outcomes and effects on the public, such as organizations of well documented records. These include for instance "The Royal College of General Practitioners", and the "Association of Palliative Medicine". Expert guidance points out the facts that this practice would:

- Erode confidence of the public in the healthcare system,

- Weaken society's respect for the sanctity of life,
- Establish the conviction that some lives (those of the disabled, mentally retarded, or of long-term chronic diseases) are worth less than others. In addition, these entities would know far better than politicians how the proposed bill, if approved by parliamentary vote, would undermine suicide prevention, the provision of palliative care, trust in doctors, and the pressure it would impose on vulnerable people to end their lives prematurely. Should the parliament deny all these facts, then the very humanitarian nature of healthcare would be driven down "Via Dolorosa".

Finally, we consider the parliament too exalted to follow, obliviously, the heedless steps of other countries along that route. Countries which initially allowed only terminally ill adults who are mentally competent to access an assisted death have expanded eligibility to include people with arthritis, anorexia, autism, and dementia. They also added children, including babies up to one-year-old with Spina Bifida. Canada has eroded safeguards in just a few years, expanding from terminal illness to include chronic illness and disability. And in 2027, people with a mental illness as their only medical condition will be eligible. A person with anorexia may qualify for Medical Assistance in Dying if they refuse treatment and their death is considered 'reasonably foreseeable' owing to malnourishment. In 2022, the number of people who ended their lives by assisted suicide and euthanasia accounted for 4.1% of all deaths in Canada; a total of 13,241 people. A 2023 poll in Canada reveals a disturbing shift in social attitudes when physician-assisted suicide or euthanasia is legalized, with more than a quarter of Canadians supporting euthanasia on the grounds of poverty. The same poll also revealed that a similar number of people support euthanasia on the grounds of homelessness, 43% support it for mental illness, and 50% support euthanasia for disabled people. The call is yours now to defy the unethical, immoral and detrimental act, or succumb to it.

Best regards.

Amin Kashmeery
Chairman Elect, Global Council for Islamic Biomedical Ethics

In the Name of Allah, the Most Gracious, the Most Merciful

Fatwa: The Ruling on Suicide Assisted by Others

Praise be to Allah, Lord of the Worlds, and peace and blessings be upon our Master Muhammad, his family, and his companions.

Allah, the Almighty, created mankind and granted them rights that must not be violated or transgressed. Foremost among these rights is the right to life.

According to Islamic law, as well as other divinely revealed laws, human life is sacred and inviolable. Therefore, Islam strictly prohibits the taking of one's own life (suicide) by any means and for any reason. Allah has warned of severe punishment in the Hereafter for those who commit suicide.

Moreover, the punishment is not limited to the individual who commits suicide but extends to anyone who assists, supports, or facilitates the act. This particularly applies to medical professionals who provide or prepare medications or other means to assist in the act of suicide, leveraging their expertise and professional skills.

Similarly, those who contribute to enacting such laws, especially judges who issue rulings permitting assistance in suicide, are also considered complicit in the crime and sin.

We therefore affirm that suicide is unanimously forbidden in Islam, as human life is not owned by the individual but is a trust from Allah. Allah has forbidden the taking of life in His words: "And do not kill yourselves. Indeed, Allah is ever Merciful to you." (Quran 4:29)

The Prophet Muhammad (peace be upon him) also stated: "Whoever kills himself with something will be punished with it on the Day of Resurrection."

Thus, requesting someone else to end one's life is a grave sin and is held accountable.

As for the person who assists the suicide, whether through weapons, medication, or any other means at the request of the individual, they are considered to have committed premeditated murder and must bear full religious, legal, and social responsibility. Allah says: "And whoever kills a believer intentionally, his recompense is Hell, wherein he will abide eternally." (Quran 4:93)

This remains the case even if the perpetrator claims they were fulfilling the wishes of the individual or acting for any perceived reason.

Hence, we maintain that both suicide, whether self-inflicted or assisted, is unequivocally forbidden in Islamic law. Both the one committing the act and anyone assisting in it bear sin. Instead, individuals in distress must be supported and provided with solutions to help them overcome their hardships, not laws or assistance that end their lives. Particularly, doctors have a sacred duty to preserve life and not to take it.

Bujar Spahiu

Grand Mufti of the Republic of Albania

President of the Albanian Islamic Community

DILEMMA AND CONTROVERSIES SURROUNDING HIV PREVENTION

Ummu Afeera Zainulabid[*] and Ahmad Faidhi Mohd Zaini[**]

ABSTRACT

HIV prevention strategies have undergone substantial transformation in recent years, with the development of new methods such as Pre-Exposure Prophylaxis (PrEP) and Post-Exposure Prophylaxis (PEP), as well as the introduction of innovative options like long-acting injectables and implants.. Despite their promise, these advancements are often accompanied by cultural, ethical, and religious debates , particularly concerning their perceived influence on behaviors traditionally regarded as high-risk for HIV transmission. This article explores the intersection of HIV prevention methods and the Islamic ethical principles, advocating for a nuanced, compassionate approach to address such behaviors.

Grounded in the example of the Prophet Muhammad (peace e upon him) who constantly met individuals engaged in transgressions, with empathy and moral clarity, rather than judgment. The Prophet's example illustrates how to balance corrective measures with support, highlighting the need for both spiritual and practical interventions in tackling public health challenges like HIV.

The article argues for a holistic strategy—one that encompasses prevention, education, treatment, and above all, compassion. Such an approach is in harmony with the Islamic values of mercy, dignity, and redemption. In doing so, it calls for inclusive healthcare models that are non-judgmental and accessible to all, regardless of risk profile, ultimately promoting both individual well-being and communal responsibility.

Keywords: HIV, AIDS, PrEP, PEP, prevention, abstinence.

INTRODUCTION

The Evolving Methods in HIV Prevention

HIV prevention has made remarkable strides in recent years, with a variety of methods now available to reduce the transmission of the virus. While Pre-Exposure Prophylaxis (PrEP) and Post-Exposure Prophylaxis (PEP) have gained prominence as key strategies in preventing HIV in recent decades, these approaches have not been without controversy, particularly when viewed through cultural, ethical, and religious lenses. However, PrEP and PEP are just the beginning of HIV preventive and curative therapy. The landscape of HIV prevention is rapidly evolving, with new methods being developed and tested, including long-acting implants, vaginal rings, and injectable formulations (Figure 1)[1].

*Ummu Afeera Zainulabid
[1]Department of Internal Medicine, Kulliyyah of Medicine, International Islamic University Malaysia, IIUM Kuantan Campus, Jalan Sultan Ahmad Shah, Bandar Indera Mahkota, 25200 Kuantan, Pahang Darul Makmur, Malaysia. ummuafeera@iium.edu.my

[2]Islamic Medical Association of Malaysia, IMAM Response & Relief Team (IMARET)
No 1-2, Jalan SP1, Selayang Point, 68100 Batu Caves, Selangor, Malaysia.

**Ahmad Faidhi Mohd Zaini[2,3]
[2]Islamic Medical Association of Malaysia, IMAM Response & Relief Team (IMARET)
No 1-2, Jalan SP1, Selayang Point, 68100 Batu Caves, Selangor, Malaysia.

[3]Department of Anaesthesiology, Tuanku Mizan Military Hospital, Seksyen 2, Wangsa Maju, 53300 Kuala Lumpur, Malaysia

These innovations promise to expand the toolkit available to prevent HIV transmission, but they also bring new challenges and debates. The introduction of these novel prevention methods raises important questions about their accessibility, acceptability, and potential impact on communities with diverse cultural, religious, and socioeconomic backgrounds.

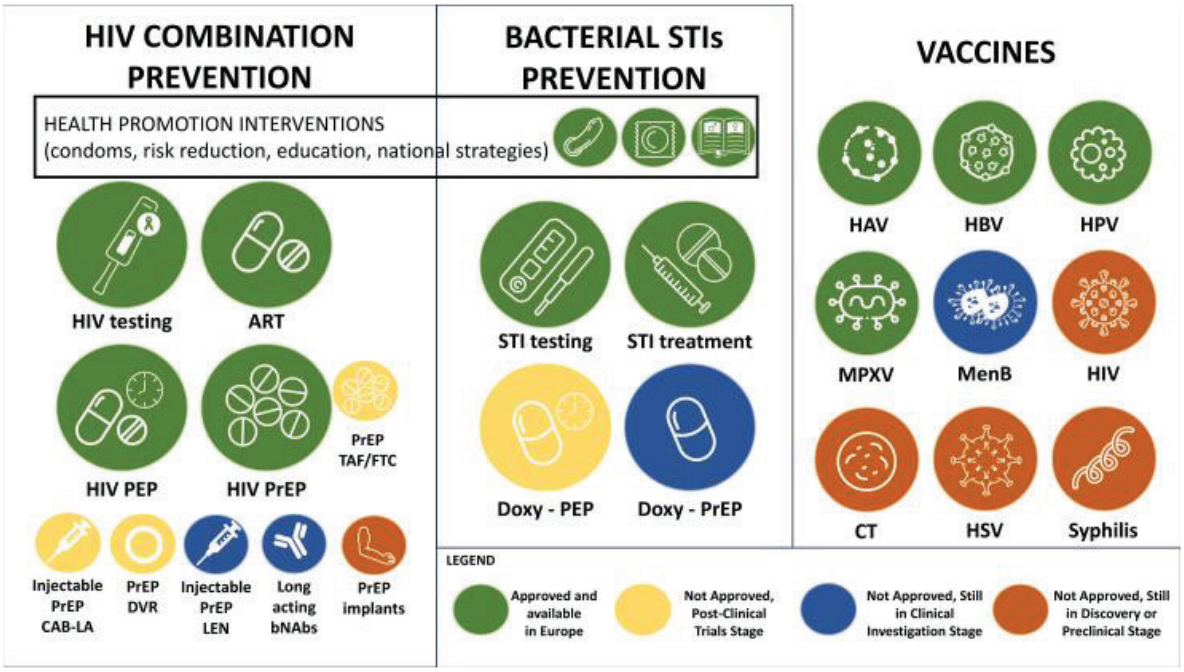


Figure 1: Prevention strategies for HIV, bacterial STIs, and vaccines. This figure highlights various prevention strategies, including HIV combination prevention, bacterial STI prevention, and available vaccines. It features methods such as HIV testing, ART (antiretroviral treatment), HIV PEP (Post-Exposure Prophylaxis), PrEP (Pre-Exposure Prophylaxis), and vaccines for various infections like hepatitis A (HAV), hepatitis B (HBV), human papillomavirus (HPV), and others. The color-coded icons indicate the approval status and availability of these treatments and vaccines, with some methods still in clinical trials or under investigation[1].

HIV Epidemiology in Malaysia: A National Perspective

HIV in Malaysia has undergone significant changes since the first case was reported in 1986[2]. Initially, the epidemic was largely driven by people who inject drugs (PWID), with injection drug use contributing to the majority of new HIV cases. However, since 2011, there has been a noticeable shift in the primary mode of HIV transmission, with sexual transmission, particularly through heterosexual and homosexual contact, becoming the dominant route. By 2011, the majority of new HIV cases were attributed to sexual transmission[3].

According to the 2023 Global AIDS Monitoring Report by the Ministry of Health Malaysia, data from 2022 highlights a troubling trend: the majority of new HIV infections are now detected in young adults aged 20 to 39 years, making up 74% of all new cases reported. Within this group, individuals aged 30 to 39 years accounted for 32% of new infections, while those aged 40 to 49 years contributed 13%. This suggests that young adults are the most vulnerable group in the ongoing HIV epidemic in Malaysia[4].

Despite progress in some areas, the country continues to face challenges in addressing the spread of HIV. A critical concern is the increasing rate of late diagnosis. Many individuals with HIV do not seek treatment until they experience significant health deterioration or symptoms become too severe to ignore. The percentage of adults diagnosed late - defined as having a CD4 count of fewer than 350 cells/mm³ at the time of diagnosis - has risen significantly, from around 55% in 2016 to nearly 75% in 2022. This delay in diagnosis and treatment is concerning as it leads to a weakened immune system and increases the risk of developing AIDS and other related complications[4].

Several factors contribute to the delay in seeking treatment for HIV in Malaysia. Stigma and discrimination remain major barriers, with many individuals avoiding HIV testing or care due to fears of social rejection[5-7]. There is also a general lack of awareness and understanding of HIV and its transmission, with some individuals not realizing that they are at risk or not understanding the importance of early treatment. Additionally, access to healthcare remains uneven, particularly for marginalized populations and those living in rural areas. These barriers - ranging from logistical challenges to financial constraints - further complicate efforts to manage and prevent HIV in the country[8].

In response to these challenges, Malaysia has made notable progress in several areas. For instance, the country became the first in the Western Pacific region to be recognized by the World Health Organization (WHO) in 2018 for eliminating mother-to-child transmission of HIV and syphilis. This success was the result of a long-standing effort to provide universal antenatal screening for HIV, which began in 1998. Today, HIV and syphilis testing and treatment are offered free of charge, ensuring that nearly all women have access to quality healthcare services, including family planning and assisted childbirth[9].

Despite these successes, the rise in new HIV cases among key populations, such as men who have sex with men (MSM), male sex workers (MSW), transgender individuals (TG), and female sex workers (FSW) - remains a significant public health challenge. Projections suggest that if no new interventions are introduced, the number of HIV infections in Malaysia will continue to rise, particularly in these high-risk groups[10].

Adolescent Sexual Health in Malaysia: A Growing Concern

Adding to the complexity of the HIV epidemic in Malaysia is the alarming data from the National Health and Morbidity Survey 2022 (Adolescent Health Survey). This survey revealed troubling statistics regarding adolescent sexual behavior in the country. A significant 154,646 adolescents (7.6%) reported having had sexual intercourse, indicating a high level of sexual activity among young people. More concerning is the fact that 33% of these adolescents engaged in sexual activity before the age of 14, meaning that over 50,000 adolescents under 14 have already been involved in sexual activity[11].

Additionally, 75% of adolescents who reported being sexually active did so recently, suggesting that the issue is not just a historical one, but an ongoing concern. Alarmingly, 88% of these adolescents did not use any form of contraception during sexual activity, significantly increasing the risk of unintended pregnancies and the transmission of sexually transmitted infections (STIs), including HIV. Furthermore, 88% also reported not using condoms during sexual intercourse, exacerbating the risk of HIV transmission and other STIs. Another worrying statistic is that 11% of adolescents reported having

more than one sexual partner, further increasing the likelihood of health risks and the spread of infections[11].

These findings highlight a critical gap in sexual education and health awareness among Malaysian youth. Despite being a country known for its Islamic values, the high rates of early sexual activity and the lack of safe sexual practices among adolescents reflect a serious public health challenge. This also underscores the need for comprehensive sexual health education, integrated with both medical knowledge and religious teachings, to guide young people away from high-risk behaviors.

The situation in Malaysia calls for urgent action to address the growing threat of HIV, particularly among young people and high-risk populations. The combination of late diagnosis, inadequate sexual education, stigma, and barriers to healthcare creates a dangerous environment for the spread of HIV and other STIs. To combat these challenges, Malaysia must continue to invest in HIV prevention programs, early detection, and treatment access, while also promoting more effective sexual health education that aligns with cultural and religious values[12].

Abstinence: The Ideal from an Islamic Perspective

In Islam, abstinence is considered the ideal and most effective form of HIV prevention, particularly about sexual behavior. Islamic teachings promote chastity and fidelity within the bounds of marriage, and sexual relations outside of this context are regarded as sinful. The Qur'an and Hadith emphasize the importance of guarding one's private parts and avoiding actions that could lead to immoral behavior, to protect individuals and the community from harm. Allah says in the Qur'an:

"وَالَّذِينَ هُمْ لِفُرُوجِهِمْ حَافِظُونَ،إِلاَّ عَلَى أَزْوَاجِهِمْ أَوْ مَا مَلَكَتْ أَيْمَانُهُمْ فَإِنَّهُمْ غَيْرُ مَلُومِينَ"

"And those who guard their private parts, except from their wives or those their right hands possess, for indeed, they are not to be blamed." (Qur'an, 23:5-6)

Abstinence, whether before marriage or outside the marital relationship, is not only a method of preventing sexually transmitted infections but also a moral and spiritual safeguard. The Prophet Muhammad (peace be upon him) also said:

"Whoever guarantees me what is between his jaws (the tongue) and what is between his legs (the private parts), I guarantee him Paradise." *(Sahīh al-Bukhāarī*)

This emphasizes the importance of controlling one's desires and staying within the boundaries set by Allah, which aligns with preventing the spread of diseases like HIV.

The Reality of the *Ummah*: Addressing Modern Challenges

Muslim healthcare professionals understand clearly the religious perspective on the prohibition of *Zinā (fornication) and homosexuality in Islam. Religious prohibition against Zinā and homose*xuality is already known and accepted by all Muslims (*al-Ma`lūm Min al-Dīn bi al-Darūrah*), whereas it is unreasonable for a Muslim to be ignorant about these matters.

However, in the endeavor to tackle this ongoing delicate social illness, Muslim health professionals and religious authorities or scholars should be aware of the changing social background and the emerging complexity surrounding factors that currently contribute to widespread *Zina* and homosexuality within our community. In contrast to classical behavioral theory, which attributes any commission of

unworthy or sinful acts to individual internal free will, lust, and ignorance; the evolution and globalisation of our modern world pose greater challenges to contemporary Muslims. Our youth and adults are deemed vulnerable as they are more exposed and to some extent also involved in modern industrial-scale sexual enticing activities such as pornography, sexual addiction, sex workers, and drug addicts. Thus, this development has shown that the issue is far more complex than merely propagating moral teachings as a sole solution.

It is important to note that individuals often engage in such behaviours due to a variety of factors. One of the many often neglected factors is the deep-rooted adverse childhood experiences. Adverse Childhood Experiences (ACE), including physical, emotional, and sexual abuse, neglect, or exposure to family dysfunction, can have a profound impact on a person's development. Factors such as parental neglect due to financial struggles, divorce, or dysfunctional family environments significantly affect socio-emotional growth and increase the likelihood of individuals engaging in substance abuse and high-risk sexual behaviours. In many cases, individuals trapped in poverty and difficult living conditions find themselves caught in a cycle of harmful behaviours, making it incredibly difficult to break free from these challenges[13-14].

Although we should admit that some individuals are drawn into these behaviours due to weak religious conviction and the overpowering influence of their desires (*nafs*). However, this lack of strong faith commitment, coupled with the inability to control one's desires, can make it particularly difficult for individuals to resist temptations and exit these destructive patterns. The struggle to reconcile personal desires with religious values creates an internal conflict that further complicates the ability to change. As such, many find themselves in a cycle that is hard to escape, unable to break free from both the external circumstances and internal struggles[15].

This highlights the reality within the Muslim *ummah*, where despite the ideal of abstinence, complex social, economic, psychological, and spiritual issues persist. While abstinence remains the ideal, it is important to acknowledge that many individuals face circumstances that push them away from religious teachings, and the difficulty of overcoming personal desires exacerbates the situation. A compassionate, empathetic approach is necessary to address these issues, ensuring that individuals receive not only medical care and preventive interventions but also emotional, psychological, and spiritual support to facilitate healing and change.

The role of Islamic scholars, healthcare professionals, and community leaders is critical in bridging the gap between religious teachings and the real-world challenges faced by individuals. While the importance of abstinence and moral conduct should continue to be emphasized, it is also necessary to recognize the complexity of human behavior and provide support to those in need, especially those whose difficult circumstances have led them to make choices contrary to religious guidelines.

The Spectrum of Risk: Understanding Low and High-Risk Groups for Targeted Preventive Intervention

In efforts to reduce HIV transmission, it is crucial to understand the differences between low-risk and high-risk groups. The majority of individuals engaged in Islamic and religious community work are dealing with low-risk groups - those who have not yet been involved in high-risk activities such as unprotected sexual relations or drug use. These individuals are often children, adolescents, and young adults who have yet to engage in behaviors that increase the risk

of HIV infection. While they may not be at immediate risk, they must receive a comprehensive education to prevent them from falling into high-risk behaviours in the future.

Holistic sexual health education is key to preventing this group from being exposed to HIV. Preventive approaches, such as promoting abstinence until marriage and providing religious and moral education, are also beneficial. These individuals must be educated about HIV transmission and the importance of prevention, while also being empowered to make healthy choices regarding their sexual health. The Ministry of Education's proactive step in creating the National Guidelines for Reproductive Health Education (PEERS) is commendable in helping young people acquire the skills to make safe and informed decisions about reproductive and sexual health[16].

However, while efforts are focused on low-risk groups, we must also recognize and support the high-risk groups who are already involved in behaviours that put them at significant risk of contracting HIV. These high-risk groups include individuals who engage in unprotected sexual activity, people who inject drugs, and sex workers - many of whom may lack adequate knowledge of how to protect themselves from HIV, or who may not have access to healthcare services that can prevent or treat HIV[17].

It is crucial for those working in the community, including Islamic scholars, healthcare providers, and NGOs, to not only focus on low-risk populations but also to understand and support those in high-risk groups. These groups face unique challenges, and addressing these requires a multimodal approach that goes beyond prevention and includes intervention and long-term care strategies. A non-judgmental, compassionate approach is necessary to provide these individuals with the education, resources, and healthcare they need to protect themselves from HIV. We must acknowledge the work of activists, healthcare workers, and NGOs who dedicate their efforts to supporting high-risk groups. It is essential that all members of the community, regardless of their risk level, are treated with dignity and offered the support they need to make positive changes in their lives.

The Prophet Muhammad's Approach to *Zinā* and Adultery: A Model of Compassion and Justice

The story of how Prophet Muhammad (peace be upon him) dealt with the issue of *zinā* (fornication) and adultery offers us valuable insights into addressing complex social issues, including HIV prevention. The Prophet's approach was always rooted in compassion, justice, and understanding, recognizing the complexity of human behaviour and the importance of offering guidance, rather than judgment.
A well-known story is that of a woman named Ghamidiyah, who came to the Prophet Muhammad (peace be upon him) confessing that she had committed adultery. Despite her admission, the Prophet initially did not seek to punish her, instead asking her to reconsider her confession multiple times, urging her to seek forgiveness from Allah. This highlights the importance of compassion and the opportunity for repentance (*Sahih Muslim*, *Kitāb al-Hudūd*, the Book of Punishments).

In Islam, repentance is always possible, and the Prophet's approach was one of mercy, recognizing that human beings are fallible and that the key to healing lies in turning back to Allah and seeking forgiveness. Similarly, in the context of HIV prevention and care, those at high risk, such as people living with HIV, should not be met with judgment but with a spirit of compassion, support, and the opportunity for recovery. This aligns with the Islamic principle of offering hope and support to those in need,

regardless of their actions, as long as they seek repentance and improvement. The story of Ghamidiyah is often cited as an example of sincere repentance, but it also demonstrates the Prophet's wisdom in handling moral transgressions with patience, compassion, and an understanding of human nature. When she confessed, the Prophet Muhammad (peace be upon him) did not rush to punish her but instead gave her time, encouraged reflection, and indirectly guided her toward repentance.

Some may argue that HIV prevention, especially methods like PrEP, enables continued sinful behaviour, unlike Ghamidiyah, who had already stopped engaging in zina. However, the key lesson from the Prophet's actions is that transformation is a process, not an immediate event. Many individuals engaging in high-risk behaviours may not yet be ready to leave them entirely, just as the Prophet recognized that people need time, guidance, and support to change. Just as the Prophet (peace be upon him) provided Ghamidiyah with a pathway to seek forgiveness rather than immediate punishment, modern public health measures provide a pathway to harm reduction and eventual behavioural change. HIV prevention is not about condoning sin, but about minimizing harm, protecting lives, and keeping the door open for eventual transformation. Preventing HIV does not contradict the Islamic principle of repentance; rather, it ensures that those who may one day seek to reform themselves do not suffer irreversible harm in the meantime.

This approach aligns with the Islamic principle of preventing harm and reflects the Prophet's actions in dealing with moral and social dilemmas. Some may argue that methods like PrEP (pre-exposure prophylaxis) are not a sign of repentance because they may enable individuals to continue engaging in high-risk behaviours. However, just as the Prophet Muhammad (peace be upon him) demonstrated mercy and patience toward those who repeatedly engaged in sinful behaviour, we must recognize that guiding high-risk individuals requires a multifaceted, compassionate approach.

PrEP, like other preventive strategies in medicine, does not condone risky behaviour but mitigates harm, offering individuals a second chance, both physically and spiritually. The Quran reminds us, "And do not throw [yourselves] with your [own] hands into destruction" (2:195), reinforcing the principle of harm reduction and self-preservation. Providing protective measures does not contradict repentance; rather, it ensures that individuals remain alive and healthy long enough to reflect, seek guidance, and change.

More importantly, HIV prevention is not just about individual protection but about safeguarding the entire community, including those who may not even realize they are at risk. Studies show that many people acquire HIV unknowingly due to factors beyond their control, such as transmission from a long-term partner, unrecognized risk behaviours, or structural barriers like stigma, misinformation, and lack of access to testing[18].

By implementing comprehensive strategies- including PrEP, ART (antiretroviral therapy), regular testing, and education - we not only protect high-risk individuals but also create a protective barrier for society as a whole[19]. Countries that have integrated HIV prevention programs into their public health policies have seen a significant decline in new infections, demonstrating that such approaches do not encourage immorality but actively prevent suffering[20].

For individuals engaged in high-risk behaviours, traditional approaches to

da`wah* may not be effective. A more compassionate, educational, and harm-reduction-focused strategy is needed. Providing comprehensive sexual education within HIV prevention clinics serves as an indirect yet impactful form of *da`wah - one that does not immediately call for repentance but instead equips individuals with knowledge, fosters responsibility, and gradually guides them toward self-awareness and change. By discussing safe practices, HIV prevention, and personal responsibility in a non-judgmental setting, we create a bridge for meaningful engagement with Islamic values. This approach is aligned with the Prophet Muhammad's (peace be upon him) example of meeting people where they are, addressing their immediate needs, and guiding them gradually rather than through coercion. Ultimately, education is a form of empowerment, and empowering individuals with the right knowledge is a powerful form of *da`wah*. While some may not be ready to abandon high-risk behaviours immediately, indirect education plants the seeds for future change, allowing individuals to make informed choices that protect both their health and their faith.

Just as the Prophet (peace be upon him) emphasized preventing harm and preserving life, we too must prioritize harm reduction, education, and evidence-based interventions. HIV prevention is not about enabling sin - it is about fulfilling our ethical and Islamic duty to protect human life, reduce suffering, and create a healthier, more informed society.

Another powerful example of the Prophet Muhammad's (peace be upon him) compassionate approach to difficult social issues, such as addiction, is his treatment of a man caught drinking alcohol repeatedly. In a well-known Hadith, a man who was known to have a drinking problem was brought before the Prophet Muhammad (peace be upon him). The Prophet ordered that the man be punished for his actions, but the punishment was not meant to cause harm - it was a corrective measure, intended to bring him back to the right path.

After the punishment, some of the companions uttered words of condemnation, wishing that the man would be disgraced. The Prophet immediately stopped them, saying:

"Do not say such things. Do not help Satan in causing harm to him."(Sahīh al-Bukharī i)

This teaches us several important lessons. First, the Prophet (peace be upon him) understood that addiction is a complex issue, and while consequences for actions are necessary, judgment and condemnation should not follow. The Prophet's focus was on rehabilitation, guidance, and offering the opportunity for change, not on public shaming. Even when people repeatedly fall into harmful behaviours, their potential for repentance and change should always be acknowledged. Just as this man was allowed to reform, so too should individuals at high risk for HIV, such as those involved in unprotected sex or drug use, be treated with compassion and provided with practical support, rather than harsh judgment.

In the same way, while PrEP and other prevention strategies may be seen by some as enabling high-risk behaviour, it is a necessary harm-reduction strategy. It does not condone the behaviour but provides a safeguard for those who are still on their path to change. It is part of a broader, compassionate, and multifaceted approach to managing public health crises, allowing individuals to protect themselves and others while they work towards spiritual and behavioural reform.

Conclusion

In conclusion, the issue of HIV prevention requires a comprehensive, compassionate, and culturally sensitive approach. While

advancements in methods like PrEP and PEP provide essential tools for reducing transmission, they must be understood within the broader context of human behaviour, spirituality, and societal values. Drawing inspiration from the teachings and practices of Prophet Muhammad (peace be upon him), we are reminded that the path to healing and prevention is not solely through punitive measures or judgment, but through empathy, support, and an unwavering belief in the potential for change. Just as the Prophet showed compassion to those who repeatedly fell into sin, modern healthcare approaches should recognize that individuals engaged in high-risk behaviours are not beyond redemption. A multifaceted approach - combining education, prevention, treatment, and spiritual guidance - offers the best opportunity for those at risk to protect themselves, make informed decisions, and ultimately achieve both physical and spiritual healing. By promoting an inclusive, non-judgmental healthcare environment that aligns with Islamic values of mercy, we can build a society where prevention, care, and personal growth go hand in hand, ultimately reducing the impact of HIV and fostering a more compassionate world.

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ETHICAL ASSESSMENT OF BENEFIT/DETRIMENT IN MEDICAL INSURANCE: THE CASE OF DEVELOPING COUNTRIES

Shafiqur Rahman, Sharmin Islam** and Abu Kholdun Al-Mahmood****

ABSTRACT

This report explores the impact of medical insurance in developing countries, focusing on the ethical dimensions of access, equity, and affordability. Medical insurance is often seen as a tool for enhancing healthcare accessibility and quality, yet it poses significant ethical dilemmas. These dilemmas include differential access to services, the financial burden on low-income families, and the quality of care provided under various insurance schemes. In developing contexts where resources are limited and disparities are high, the introduction and management of medical insurance raise critical ethical questions. Our investigation into several developing nations reveals that while medical insurance can improve health outcomes and increase access to services, it can also exacerbate existing health inequities and disadvantage the poorest and most vulnerable population segments. The report concludes with recommendations for designing and implementing more equitable insurance systems. These recommendations ensure that medical insurance contributes positively to all citizens' health, particularly those needing reliable and affordable healthcare solutions.

1.0 INTRODUCTION

Medical insurance is a financial mechanism designed to reduce the economic burden of healthcare costs for individuals by spreading risk across a larger pool of people. Essentially, it operates on the principle that members pay premiums into a fund, which then covers the medical expenses of those insured when they need care. The primary role of medical insurance in healthcare systems is to facilitate access to health services without causing financial hardship, promote preventive care to maintain the population's health and ensure the availability of quality treatment when necessary.

The significance of medical insurance in developing countries cannot be overstated. These regions often face stark challenges in their healthcare systems, including insufficient infrastructure, limited healthcare resources, and significant disparities in health service availability. For many individuals in such countries, out-of-pocket medical expenses can be prohibitively expensive, leading to a substantial financial burden or unnecessary medical care. Therefore, medical insurance is critical in enhancing access to healthcare, making it more affordable, and improving the overall quality of care the population receives.

*Dr Shafiqur Rahman, Professor and Head, Department of Business, International Open University, The Gambia.
Correspondence author
Email: Shafiq.Australia@gmail.com

**Dr Sharmin Islam, Professor, Eastern University, Dhaka, Bangladesh.

***Dr Abu Kholdun Al-Mahmood, Professor, Ibn Sina Medical College, Dhaka, Bangladesh.

However, implementing medical insurance in developing countries is fraught with ethical concerns. Issues of access are at the forefront, with a significant portion of the population often remaining uninsured or underinsured due to factors like poverty, lack of awareness, or inadequate government support. Affordability also remains a key issue, as the cost of premiums can be beyond the reach of many, or the coverage provided may not be comprehensive enough to be meaningful. Furthermore, the quality of care under some insurance schemes can be substandard, with insured individuals sometimes facing long waits, receiving care from under-qualified health providers, or having access to only a limited range of services.

This report explores these ethical implications, focusing on how medical insurance is implemented in developing regions and its effects on the healthcare landscape. Specifically, it seeks to assess whether the presence of medical insurance schemes leads to more equitable health outcomes and how these systems can be optimised to serve these populations' needs better. By doing so, the report will contribute to the broader discussion on how to design medical insurance systems that are not only effective but also ethically sound, ensuring that they provide real benefits without exacerbating existing inequalities or creating new ethical dilemmas. Through this analysis, we intend to offer actionable recommendations to guide policymakers and stakeholders in developing more inclusive, fair, and effective healthcare solutions.

2.0 LITERATURE REVIEW

Overview of Medical Insurance in Developing Countries

The literature provides extensive documentation on the role of medical insurance in healthcare systems, particularly in developing countries. Studies have shown that medical insurance can improve access to healthcare services, reduce out-of-pocket spending, and improve overall health outcomes[1]. However, the extent to which these benefits are realised varies significantly across different geographic and economic contexts, with rural and impoverished populations often experiencing less significant improvements[2].

Ethical Frameworks in Healthcare

Ethical considerations in healthcare and insurance involve analysing fairness, justice, and equity. Normative ethical theories, including utilitarianism, deontology, and virtue ethics, have been applied to assess the moral implications of healthcare policies[3]. In medical insurance, these ethical frameworks interrogate how rights, obligations, and benefits are distributed among different societal groups, focusing mainly on vulnerable populations[4].

Affordability

The affordability of medical insurance is another critical ethical issue. While insurance is supposed to make healthcare more affordable, the structure of premiums, copayments, and the scope of coverage can make it inaccessible to those who need it most. For example, high premium costs can deter low-income families from enrolling in insurance plans, effectively excluding them from insured healthcare benefits[5]. Furthermore, even those who can afford premiums may still face high out-of-pocket costs due to limited coverage of services, undermining the ethical goal of reducing financial barriers to healthcare[6].

Quality of Care

The quality of care under insurance schemes is also a major ethical concern. Studies have indicated that while insurance may increase the quantity of healthcare utilization, it does not always correspond with improving the quality of care provided. In some cases, the influx of new patients into a healthcare system not adequately prepared for increased demand can lead to overstretched resources and a decline in care quality[7]. Moreover, there is a risk that insurance schemes prioritize cost over quality,

leading to ethical dilemmas about the standard of care being provided to insured versus uninsured patients[8].

Gap in Literature

A notable gap in the literature is the comprehensive ethical analysis of these insurance systems, particularly how they impact the socioeconomic divides within countries. While quantitative studies provide data on coverage and utilization, qualitative analyses focusing on personal experiences and equity are less prevalent. More interdisciplinary research that integrates ethical theory with empirical data is needed to more deeply understand the implications of medical insurance policies in developing countries.

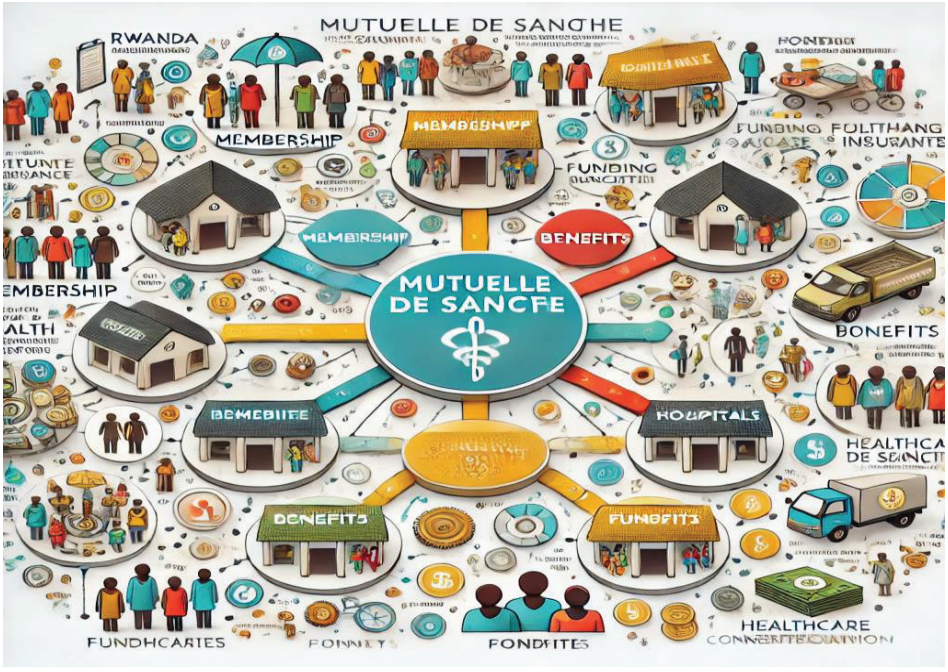
3.0 METHODOLOGY

This report utilizes a qualitative content analysis approach to examine the ethical dimensions of medical insurance in developing countries. The methodology systematically analyses textual data from peer-reviewed academic journals, industry reports, and policy documents. These texts were selected based on their relevance to medical insurance systems, ethical considerations in healthcare, and their focus on developing country contexts.

For the analysis, key themes such as access, affordability, equity, and quality of care were identified and coded using qualitative data analysis software. This allowed for a structured examination of how these themes are discussed in the literature and their implications for medical insurance policies. The study emphasizes extracting insights related to medical insurance's ethical challenges and benefits, ensuring a comprehensive understanding of its impact on healthcare outcomes in these regions. This methodological approach ensures a focused and detailed exploration of the selected documents, providing a grounded basis for the report's conclusions.

4.0 CASE STUDIES

Case Study 1: Rwanda's Community-Based Health Insurance



[Here is the illustration of Rwanda's Community-Based Health Insurance structure, Mutuelle de Santé, depicting its various components such as membership, benefits, funding sources, and connected healthcare facilities: AI Generated].

Structure: Rwanda's health insurance model, Mutuelle de Santé, is a community-based health insurance scheme initiated in 2000. It is designed to offer universal coverage to the population, especially targeting the rural and impoverished communities. Membership is based on annual premiums scaled according to socio-economic categories.

Benefits: The introduction of Mutuelle de Santé has significantly increased healthcare access across Rwanda. Before its implementation, healthcare utilization was markedly lower; post-implementation data shows substantial increases in visits to healthcare facilities and improved preventive care uptake, particularly maternal health services.

Ethical Issues: Despite its successes, Mutuelle de Santé faces challenges related to equity. The poorest often struggle with even the lowest premium category, and there are disparities in healthcare quality between urban and rural facilities. Moreover, the lower quality of care in rural areas than urban centers raises concerns about equitable access to quality healthcare.

Outcomes: Overall, the scheme has positively impacted health outcomes in Rwanda, reducing mortality rates and enhancing the general health of the population. However, the ongoing challenges highlight the need for continued adjustments to ensure equitable access and quality across all regions.

Case Study 2: India's Ayushman Bharat

[The illustration depicts India's Ayushman Bharat health insurance scheme, detailing its components such as beneficiary coverage, medical services, funding, and integration with healthcare facilities: AI generated.]

Structure: Launched in 2018, Ayushman Bharat, also known as the Pradhan Mantri Jan Arogya Yojana (PMJAY), is a national health insurance scheme aimed at providing free health coverage at the secondary and tertiary level to the country's low-income families. The program targets approximately 500 million beneficiaries.

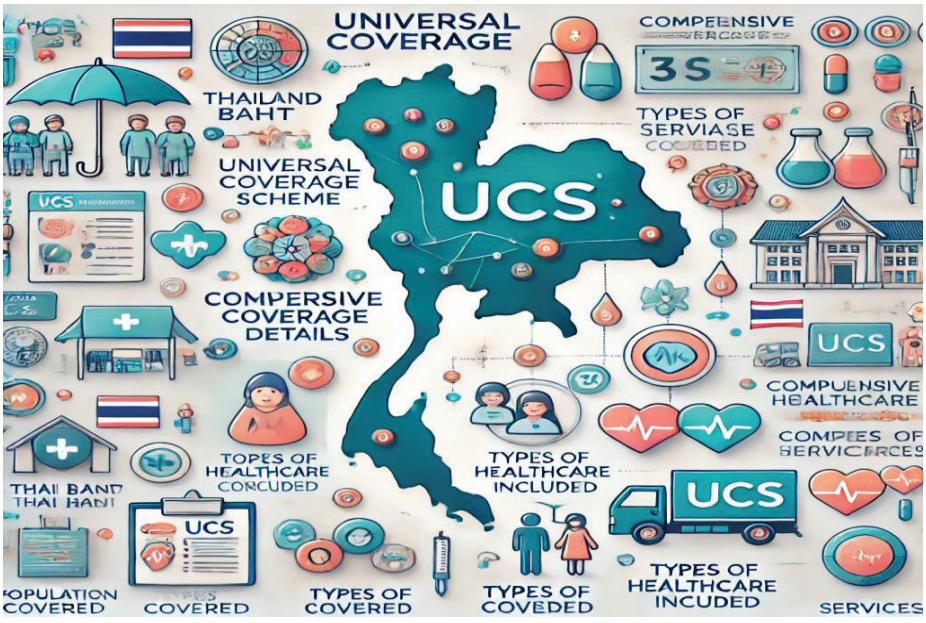
Benefits: Ayushman Bharat has improved access to healthcare services for millions of Indians, particularly those who were previously uninsured. The scheme covers several high-cost procedures, ensuring that financial constraints do not prevent necessary treatments.

Ethical Issues: PMJAY faces ethical issues concerning inequity and healthcare quality despite its ambitious coverage. Significant discrepancies exist in the availability of medical facilities equipped to handle covered treatments, leading to inequitable access across states and rural versus urban areas. Additionally, fraud has been a significant issue, with numerous cases of hospitals and intermediaries manipulating the system for financial gain.

Outcomes: The scheme has been pivotal in saving lives through significant medical interventions that previously would have been unaffordable for many. However, the ethical concerns regarding equitable access and system abuses need addressing to fully realize its potential benefits.

Case Study 3: Thailand's Universal Coverage Scheme (UCS)

Structure: Thailand introduced its Universal Coverage Scheme in 2001, covering nearly the entire population. It is funded through general taxation and provides comprehensive coverage, including outpatient, inpatient, emergency, and high-cost procedures.



[Here is the illustration depicting Thailand's Universal Coverage Scheme (UCS), featuring key elements such as coverage details, population covered, healthcare services, and funding structure: AI generated]

Benefits: UCS has dramatically increased healthcare utilization rates across Thailand, with a marked reduction in health disparities between income groups.

Ethical Issues: Though widely successful, the UCS faces challenges regarding the sustainability of funding and maintaining the quality of care, as increased demand strains healthcare resources.

Outcomes: The scheme is credited with improving health equity and reducing poverty caused by medical expenses. However, ongoing management and funding strategies must be carefully considered to maintain its success and ethical standing.

These case studies from Rwanda, India, and Thailand illustrate both the potential benefits and the complex ethical dilemmas faced by medical insurance systems in developing countries, providing valuable insights into the factors that influence their success and sustainability.

5.0 DISCUSSION

The case studies from Rwanda, India, and Thailand reveal significant insights into implementing medical insurance in developing countries, echoing many of the themes identified in the broader literature on healthcare ethics and policy[9]. These countries have demonstrated considerable success in expanding healthcare access and reducing the financial burden of medical costs on the poor, aligning with the findings that medical insurance can lead to improved health outcomes and greater healthcare utilization.

However, these systems' ethical challenges are profound and reflect the ethical dilemmas concerning equity and healthcare justice[10]. Each case study highlights the issue of equitable access — while more people are covered than ever, disparities persist, particularly between different socio-economic groups and geographic locations. The quality of care, especially in rural areas compared to urban centers, remains a significant concern, underscoring the trade-off between broadening access and maintaining high standards of care. This situation points to the ethical tension between utilitarian goals of maximizing overall health benefits and deontological ethics that demand rights-based standards of care for all individuals.

To mitigate these negative ethical implications, several measures can be implemented. Firstly, adjusting premium structures and subsidy schemes in programs like Rwanda's Mutuelle de Santé could enhance equity by making premiums more affordable for the poorest populations. In India, stronger regulatory frameworks could help address fraud and ensure that funds are used effectively to improve healthcare quality uniformly across regions. For Thailand's UCS, innovative funding mechanisms could help sustain the insurance system without compromising the quality of care due to financial constraints.

Overall, while the expansion of medical insurance in these developing countries has yielded positive results, the ethical trade-offs require ongoing attention and action. Policymakers must continuously evaluate and adapt these systems to address ethical concerns, ensuring that healthcare access and affordability gains do not come at the expense of fairness and quality care.

6. CONCLUSIONS AND RECOMMENDATIONS

Summary of Key Ethical Concerns

This report has highlighted several key ethical concerns associated with implementing medical insurance schemes in developing countries. These include:

1. **Equity in Access**: Despite improvements in healthcare coverage, significant disparities persist, particularly affecting rural and impoverished populations. These disparities raise concerns about the fairness and justice of medical insurance systems.
2. **Affordability**: While medical insurance aims to make healthcare more affordable, high premiums and out-of-pocket costs continue to be prohibitive for many, especially the poorest and most vulnerable groups.
3. **Quality of Care**: Increased access to healthcare services has sometimes resulted in compromised quality, mainly where healthcare infrastructure is inadequate to meet the demands of a larger insured population.
4. **Sustainability**: Ensuring the long-term sustainability of these schemes, given the resource limitations typical in developing countries, poses a significant ethical and practical challenge.

7. RECOMMENDATIONS FOR POLICYMAKERS

To address these ethical concerns and improve the outcomes of medical insurance schemes, the following recommendations are proposed for policymakers:

1. **Implement Sliding Scale Premiums**: Modify premium structures to be income-sensitive, ensuring that medical insurance is affordable for all socioeconomic groups. This could involve more substantial subsidies for the lower income brackets.
2. **Enhance Healthcare Infrastructure**: Invest in healthcare infrastructure, particularly in underserved areas, to ensure increased coverage increases access to high-quality healthcare services. This includes training

healthcare professionals, upgrading facilities, and investing in medical technology.

3. **Strengthen Regulatory Frameworks**: Enact and enforce stricter regulations to prevent fraud and abuse within medical insurance systems. This will help ensure that resources are used appropriately and effectively to improve healthcare outcomes.
4. **Promote Transparency and Accountability**: Increase transparency in the operations of medical insurance schemes and hold stakeholders accountable. This can be achieved through regular audits, public reporting of performance metrics, and involvement of community organizations in oversight.
5. **Community-Based Health Planning**: Engage communities in the planning and implementing health services to ensure that the services provided meet the actual needs of these populations. This bottom-up approach can help tailor services to specific local challenges and preferences.
6. **Regular Impact Assessments**: Conduct regular assessments to evaluate the impact of medical insurance schemes on health equity and quality of care. Use these assessments to improve policy and implementation strategies continuously.

7. Areas for Further Research

To continue improving the ethical impacts of medical insurance, further research should focus on:

1. **Longitudinal Studies**: Conduct longitudinal studies to assess the long-term effects of medical insurance on health outcomes and socio-economic disparities.
2. **Comparative Analyses**: Perform comparative analyses between countries and regions to identify best practices and lessons learned that can be adapted and implemented elsewhere.
3. **Impact of Technology**: Explore the role of digital technologies in enhancing the effectiveness and efficiency of medical insurance schemes, particularly in improving access and reducing administrative costs.
4. **Behavioural Insights**: Investigate how behavioural factors influence the uptake and utilization of medical insurance and how these can be addressed to improve enrolment and renewal rates.
5. **Ethical Framework Development**: Develop comprehensive ethical frameworks tailored to the context of developing countries to guide policy decisions and implementation strategies.

By addressing these areas, policymakers can create more equitable, effective, and sustainable medical insurance systems that align with ethical principles and contribute to their populations' overall health and well-being.

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IMMUNISATION FROM AN ISLAMIC BIOETHICAL PERSPECTIVE: CONTEXT, CONTROVERSIES AND COMMUNITY PROTECTION

Musa Mohd Nordin, Chan Li Jin @Ahaddhania**, and Husna binti Musa****

Abstract

Immunisation has been proven to be the best public health tool, second only to clean water. Yet it continues to spark intense debates within Muslim communities due to ethical, religious, and scientific concerns. From an Islamic bioethical perspective, key issues include the permissibility of vaccines containing impermissible (haram) ingredients, mandatory vaccination policies, and trust in vaccine safety and efficacy. This article analyses these three major controversies with references to Islamic scholarly opinions (*fatwa*) and bioethical principles.

Keywords: Immunisation, public health, haram, fatwa, bioethics.

Introduction

Many have forgotten that smallpox and polio were two of the most feared infectious diseases in history, causing widespread illness, disability and death before effective vaccines were developed.

Smallpox killed hundreds of millions over centuries, with survivors often left blind or disfigured. Similarly, Polio epidemics in the 20th century left many children permanently disabled.

After decades of intensive global vaccination campaigns, the World Health Organisation (WHO) successful declared smallpox eradicated in 1980 and Polio is virtually eliminated[1]. As of 2025, wild polio remains endemic in only 2 countries in the world, both unfortunately Islamic nations, due to vaccine hesitancy[2].

Use of Prohibited (Harām) Substances in Vaccines

Among the top concerns of vaccine hesitancy is the use of prohibited substances. To address this, the European Council for Fatwa and Research (ECFR) discussed at length the use of porcine trypsin in the manufacturing of the Oral Polio Vaccine (OPV) during its 11th session in July 2003.

*Dr Musa Mohd Nordin
Damansara Specialist Hospital, Malaysia
E-mail: musamn@gmail.com

**Chan Li Jin @Ahaddhaniah
Executive Director
Pharmaceutical Association of Malaysia (PhAMA)
E-mail: ljchan@gmail.com

***Dr Husna binti Musa
Department of Paediatrics
Faculty of Medicine and Health Sciences, University Putra Malaysia
Email: drhusnamusa@gmail.com

The ECFR presented several key points of their deliberation:

i) The prohibition in Islam pertains to the consumption of pork. Porcine trypsin, the enzyme derived from pigs, does not equate to pork meat.
ii) Trypsin is utilized only in the early stages of vaccine production to prepare cell cultures. It is thoroughly removed during subsequent purification processes. Consequently, the final vaccine product contains no trace of porcine substances.
iii) Even if trypsin were considered impure, the minute quantity used and its complete removal render its presence negligible, aligning with the Islamic principle that impurities are nullified when diluted beyond a certain threshold. The manufacturing and filtration processes ensure that any porcine-derived substances are entirely eliminated, leaving no traces in the final vaccine.
iv) In situations where no halal alternatives exist, and the vaccine serves a critical public health function, its use becomes permissible under the principle of necessity (*darura*).

The ECFR concluded by urging Muslim leaders and communities not to be overly stringent in matters open to scholarly interpretation, especially when it serves the greater good of protecting children's health through vaccination. This perspective aligns with broader Islamic jurisprudence, which often permits exceptions in cases of necessity, particularly when public health is at stake. The World Health Organization (WHO) also confirms that the OPV does not contain any porcine residues in its final form.

In summary, based on the ECFR's fatwa and supporting scientific evidence, the use of the Oral Polio Vaccine, despite its initial production involving porcine trypsin, is considered permissible in Islam due to the absence of such substances in the final product and the overarching necessity to protect public health[3,4].

Apart from trypsin, the permissibility of using gelatin derived from porcine or other impure sources in medicines and vaccines have been a bone of contention. This has been addressed by the Islamic Organization for Medical Sciences (IOMS) through several key rulings. Here is a synthesis of their positions and related scholarly perspectives:

The IOMS, in collaboration with institutions like Al-Azhar University and the Islamic Fiqh Council, ruled that gelatin produced through *istihala* (chemical biotransformation) from impure animal parts (e.g., pig bones/skin) becomes pure (*tahir*) and permissible (*halal*) because the process alters the substance's properties to the extent that it is no longer recognizably impure.

A 1995 seminar concluded that gelatin formed via transformation is "pure and judicially permissible to eat". The 2013 International Islamic Fiqh Academy reaffirmed this, stating that *istihala* changes prohibited substances into lawful ones.
In alignment with this, the Indonesian Ulema Council (MUI), who had initially banned porcine-based vaccines, later permitted them under necessity (*darura*)[5].
The IOMS's position is rooted in classical Islamic legal principles like

istihala and *darurah*, balancing religious adherence with public health needs. While many scholars have reached a consensus on this, individual and regional interpretations may vary. In general, the WHO and health authorities cite the IOMS verdict to reassure Muslims about porcine-derived vaccines[6].

Individual Autonomy and *Maslahah 'ammah* (public interest and benefits)

Healthcare professionals may have the greater knowledge of vaccine-preventable diseases, including the possibilities, risks, treatment, outcomes and the options of prevention with immunisations.

Nonetheless, the principle of individual autonomy (*amanah*) in *usul fiqh* respects and values the individual (or the parents or legal guardians) as the one who makes self-defining decisions, upon which he then acts and for which he is accountable.

However, the principle of *amanah* needs to be considered within the context of wider public interest and benefits, as stipulated by the principle Islamic legal maxim (*al-Qawa'id al-Fiqhiyyah*): *"the individual right may have to be sacrificed in order to protect the public interest."* The fiqh council Dar al-Ifta al-Misriyyah in Egypt and scholars like Sheikh Abdullah bin Bayyah (UAE) argue that mandatory vaccination aligns with the Islamic principle of "*La darar wa la dirar*" (no harm shall be inflicted or reciprocated), protecting public health[7,8]. This is further supported by religious councils in many parts of the world.

Examples include the Fatwa Council of Indonesia (MUI), Majlis Ugama Islam Singapura (MUIS) and Malaysia's JAKIM, who supported COVID-19 vaccination as obligatory (wajib) for community protection[9]. In 2021, the Muslim World League permitted compulsory vaccination for epidemics, while the 2021 European Council for Fatwa and Research supported mandatory vaccination if benefits outweigh risks.

The general consensus is that medical interventions, such as global immunization programs that have been proven to promote and protect the health and well-being of the public, take priority over individual interest.

This is especially important in ensuring that individual choices do not bring harm to others. People who are not immunized against vaccine-preventable diseases (VPD)put themselves at increased risk of being infected. Once infected, they risk passing the disease to others, especially their near and dear ones!

Deciding not to vaccinate carries such significant negative impact on population health that policy makers of some countries have been compelled to take concerted action. Alarmed by rising vaccine hesitancy and increased return of VPD such as measles and diptheria, Australia has recently implemented a "no jab, no pay" policy, where childcare and welfare benefits are withdrawn from parents who refuse to vaccinate their kids[10].

The concept of *Maslahah 'ammah* is important for the creation of herd immunity, where sufficient numbers of people in a community are immunized, usually in excess of 80%. When this happens, virtually the entire community gets to enjoy the protection against VPD, including vulnerable segments of the community who cannot be immunized due to various reasons e.g. too young, or are immunocompromised

due to cancer, HIV/AIDS, are on chemotherapy or radiotherapy.

In short, immunization programs carry community benefits that extend beyond the individual in the form of financial savings and improved security[11,12].

Vaccine safety and efficacy

Any medical intervention is bound to be associated with some degree of risk. The potential adverse effects of immunization have been carefully weighed against the numerous individual, societal and economic benefits accrued from the WHO Expanded Program on Immunisation (EPI).

Avoiding medical intervention to avoid risk is irrational because doing nothing is also associated with risks, namely the increased risk of acquiring VPD which can lead to outbreaks of epidemics and pandemics. Anti-vaccine groups ought to consider the costs and risks of increased and prolonged hospitalisations, utilization of expensive treatment, loss of physical and intellectual disabilities, even death.

Vaccines are administered to otherwise normal children and adults. They are therefore manufactured to meet the most stringent and highest standards of safety. Before vaccines are licensed, the National Regulatory Authorities (NRA) requires many years of research, clinical trials and testing to ensure safety[13]. This process may take 10-15 years or longer, followed by the lifetime process of pharmacovigilance for the vaccine.

To minimize the risks of side effects, NRAs conduct stringent testing during the vaccine’s registration process. Once a vaccine is licensed for use, the NRA continually monitors its adverse effects following immunisations (AEFI). Any hint of a health problem that may or may not be directly related to the vaccine prompts further investigations by the NRA.

If an AEFI is found to be directly related to a vaccine, the NRA will initiate appropriate action. This may include changing the vaccine label or packaging, updating product inserts, distributing safety alerts, inspecting manufacturers' facilities and records, withdrawing recommendations for the use of the vaccine, or in severe cases, revoking the vaccine's registration status.

Every individual is unique and may react differently to vaccinations. In the majority of cases, vaccines are effective in protecting the person from the VPD and cause no side effects whatsoever. A few may experience only mild AEFI, most common being soreness, swelling or redness at the injection site, low-grade fever or slight malaise. In extremely rare circumstances, people may experience more serious side effects, like allergic reactions. These reactions are so rare that the risk is very difficult to quantify.

In recent years, a number of web sites dishing out unbalanced, misleading and alarming vaccine safety information have mushroomed. Apart from causing undue fears, particularly among parents and patients, these myths and misinformation about vaccine safety can confuse parents who are trying to make sound decisions about their children's health care. Misinformation abounds on the Internet, making it hard to find a reliable source of truth.
To combat this, the United Nations Children's Fund (UNICEF), WHO and key NGOs initiated the Vaccine Safety Net Project (VSN) to respond promptly, efficiently, and with scientific rigour to

vaccine safety issues of potential global importance in 2003[14].

Concerns about vaccine safety were amplified during the COVD-19 pandemic and the association of mRNA vaccines with adverse effects. Current evidence supports that COVID-19 mRNA vaccines are safe and effective for the vast majority of people.

Extensive trial and real-world data from hundreds of millions of doses administered worldwide show that mRNA vaccines are generally very safe. Most AEFI are mild and temporary such as arm pain, fatigue, fever or headache. Serious AEFI (like myocarditis or anaphylaxis) are very rare, and the benefits of vaccination far outweigh the risks, especially in preventing severe COVID-19, hospitalization, and death. Although myocarditis is slightly increased in young males who took the mRNA vaccine, the cases are typically mild and resolves with rest. The risk of myocarditis is far higher from COVID-19 infection[15].

In contrast, a study by Imperial College London calculated that COVID-19 vaccines saved 20 million lives between December 2020 and December 2021. Airfinity's further analysis showed that the Oxford/AZ COVID-19 vaccine saved 6.3 million lives, Pfizer/BioNTech 5.9 million lives, Sinovac 2 million lives and Moderna 1.7 million lives[16].

Conclusion

From an Islamic bioethical lens, vaccination is generally permissible (even obligatory in epidemics) if benefit outweigh harm. However, concerns over ingredients, mandates, safety and efficacy persist in a proportion of the Muslim community. To mitigate this, there is pressing need to improve community engagement (*da'wah*) on vaccine ethics and balancing individual rights with collective benefits and welfare (maslaha). Further advocacy efforts include discourse with vaccine manufacturers to develop culture mediums, enzymes and resultant vaccines which are free from animal protein, which is already in the pipeline of vaccine research and innovation.

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ISLAMIC ETHICS OF HEALTHCARE FOR MARGINALIZED POPULATION

*Siti Noraida Habibullah**

INTRODUCTION

Malaysia is not a signatory of the 1951 Refugee Convention, which falsely negate her citizens from the responsibility to protect forced migrants within the nation. A significant number of refugees and asylum seekers in Malaysia live in a vulnerable and precarious state due to the lack of protection from a legal framework and community acceptance. Malaysia's existing policies and symptomatic responses to forced migrants' issues have been subjected to frequent discussions in the civil societies.

The unique presence of UNHCR in a country that is not a signatory of the Refugee Convention like Malaysia, signifies to a certain extent Malaysian authorities' fragile acceptance of forced migrants living within the local communities (Muntarbhorn, 2022). Like in many non-signatory states, UNHCR has a highly operational presence, taking on responsibilities such as refugee status determination (Janmayr, 2021 pp 203). Nevertheless, even though the refugees are given 'protection' if they are registered with UNHCR, they are still seen as in transition for a resettlement to the limited number of relocation countries.

Perpetual wait for resettlement puts forced migrants in a precarious situation, in which they are not afforded clear legal framework to any rights, exposes them to prosecution and detention, their long term presence adding to the Malaysian refugees dilemma.

In terms of healthcare, UNHCR secured a Memorandum of Understanding (MoU) with the Ministry of Health (MOH) in 2005 to offer UNHCR card-holders a 50% discount on the rates offered to non-citizens at the public hospitals. Refugees also have access to private clinics and dedicated healthcare centres run by the NGOs. However, healthcare costs are still relatively high for refugees, with 50% of refugees unable to access healthcare due to costs alone, (UNHCR, 2018), exacerbated by the 2014 amendment to the 1951 Medical Fees Act that involves a 100% increase in medical charges for all foreigners (MOH, 2014).

*Dr. Siti Noraida Habibullah
MBBS (Malaya) MBA (Ballarat) MSc. Global Migration & Social Justice (Glasgow)
Senior Lecturer
Jeffrey Cheah School of Medicine and Health Sciences
Monash University Malaysia
E-mail: siti.noraida@monash.edu

In this paper, the author discusses the healthcare barriers in the form of security and legal protection language difficulties, and the lack of empathy by the locals. Ethics in healthcare refers to the moral tenets and rules that regulate medical practice and the provision of healthcare services. It provides guidance to healthcare professionals on respecting individual rights, addressing societal issues, and puts the welfare of patients, justice, and fairness first. Beyond clinical judgment, ethical standards in healthcare address larger societal concerns such as the access to care, human rights, and healthcare inequality.

From the author's experience and personal sources, there have been incidences of forced migrants being turned away from treatment at the hospitals, as well as negative sentiments posted by doctors in social media, which are misaligned with professional conduct and can lead to the exacerbation of public hostility toward this vulnerable group of refugees. The author explores the role of doctors and their ethical dilemmas when meeting the needs of marginalized population like the refugees and asylum seekers. The author considers the the role of Islamic ethics in the medical profession in promoting justice and fairness in the field of medicine.

Comparative Studies of treatment of refugees in Switzerland, Brazil and Malaysia

Switzerland

Switzerland "grants asylum to refugees and offers temporary shelter to those in need of protection" (SEM 2016). Refugees and asylum seekers arriving in Switzerland are socially and culturally diverse, and significantly distinct from the—Swiss population (Geisen 2005). These leads to challenges in many aspects of adaptation and socialization including cultural and economic positioning in the new society.

The Swiss program not only offers a family reunification scheme, but also sustainable healthcare access. For example, healthcare is covered by obligatory healthcare insurance: "All people living in Switzerland, including children, are required to take out basic health insurance coverage" (SEM 2015a, p. 13). Refugees also have access to the welfare system and can receive welfare benefits.

Brazil

Brazil's commitment to refugee law and protection since the mid-1950s has resulted in the passing of a bill on refugees in 1997 (Law 9474). This bill broadens the protection for refugees by including gross violation of human rights as a criterion for refugee status, creates an administrative process for refugee status determination (RSD), and legally allows for refugee integration in Brazil, which is undertaken by the Brazilian government, UNHCR and civil society together. Bringing social actors other than the government into the fold is regarded as a positive aspect of refugee protection and integration in Brazil, providing for a more holistic commitment to the cause of refugees (Jubilut, 2010).

Health Disparity in Malaysia

Heath disparities have significant social and economic costs to both individuals and societies with social and moral consequences. One of the key indicators of health inequity is maternal mortality and studies show that 99% of maternal deaths occur in developing countries accounting (WHO, 2024) Forced migrants in Malaysia, would be vulnerable to health disparities related to poverty, social marginalization, and poor access to healthcare, economic and social resources as many focus on surviving rather than maximizing their health needs.

The lack of legal framework and community acceptance preclude forced migrants in Malaysia from having a fair and

uncomplicated path to achieving the desired level of health status. Most refugees and asylum seekers are affected by many social determinants of health such as the lack of livelihood opportunities leading to poverty and poorer health outcomes. Health disparities result from the social, psychological, and biological processes that occur within this intersection of social structure and cultural construction (Lane et al., 2018). More studies are needed to fully capture the extent of health disparities between the forced migrants in Malaysia and the local citizens.

Forced migrants or refugees and asylum seekers have systematically experienced greater social or economic obstacles to health based on their status. The lack of attention to the social environment of the deprived society related to education, livelihood, income, and living conditions, contribute to the persistent health inequity. Such lack of concern for the needs of the different 'others' is a violation of the ethical principle of social justice within and between countries to ensure the access to resources required for health (Anderson et al., 2009). With the understanding that the causes for health disparities among refugees are due to a combination of systemic impediments and social determinants of health, medical professionals should be encouraged to "do what they can at their roles as frontliners" to achieve a better outcome for this marginalized population.

Healthcare disparities can also be caused by more subtle factors, such as inherent biases explaining the negative attitudes and microaggressions of healthcare practitioners toward members of these marginalized populations (Dumke & Neuner, 2022). Over the years, despite the health needs of refugees and asylum seekers being repeatedly highlighted in Malaysian public discourse, healthcare access for them remains a challenge. There is inconsistency in the attention given with heavy reliance on a few empathetic doctors to provide fair and impartial treatment to refugees. This inconsistency in the standard of treatment provided and injustice, though sporadic, persists significantly among certain doctors and healthcare organizations. This inconsistency may suggest underlying deep-rooted discrimination or just secondary to individual reluctance from implicit biases, but will ultimately affect patient–provider interactions, treatment decisions, treatment adherence, and patient health outcomes (Hall et al., 2015).

At the same time, there are more administrative changes in certain government hospital because of the alleged 100 million foreigner debt from hospital bills to the government. This causes stricter administrative procedures on the admissions for forced migrants or refugees, in which they have to pay full costs in advance to get prompt and even emergency treatment.

These latest administrative procedures by certain government hospital (not a national policy) goes against Hippocratic oath of "first do no harm" and render doctors facing further ethical dilemma and moral distress for the inability to provide care according to their professional obligations, which in turn adds to the burden to an already overwhelmed system. For example, according to a personal source from an NGO case worker recently, a preterm baby from a refugees family born with respiratory distress syndrome requiring intubation at birth was not allowed to be admitted into one of the neonatal intensive care unit for ventilation and other life-saving treatment, and medical officers had to perform manual ventilation for many hours in the labour room awaiting for immediate funds for the admission.

When compared the treatment of forced migrants or refugees in Switzerland and Brazil to those in Malaysia, it is staggering to see that in the first two countries, the refugees are assigned to a system that not only protects them but also provide them with uncomplicated healthcare access. Granted both Switzerland and Brazil ratified the 1951 Refugee Convention and its 1967 Protocol, but Malaysia, Islam being the religion of the federation[1], should not have to confine her response to a humanitarian needs based on a secular law. Fundamental Islamic principles do not appear to play a significant role in the nation's responses to refugees crisis.

Health Disparities due to Social Injustices in Healthcare

Health disparities among refugees are a stark manifestation of systemic injustice. Addressing these disparities through the lens of social justice requires a commitment to equity, inclusion, and systemic reform. Systemic injustice perpetuates health disparities among refugees through discriminatory policies and practices.

In Malaysia, forced migrants face multiple barriers to health care access, discrimination, fear of deportation, language barriers, and barriers in social assimilation contributing to their vulnerability, not just medically but also socially. It has been documented that asylum seekers' fears of deportation and financial constraints stop them from seeking medical care (Asgary & Segar, 2011). At the core of this issue lies the question of whether accountability toward the patient and advocacy work on their behalf inherently challenge both aspects of the professional responsibilities: societal or judiciary obligations versus direct patient care (Asgary & Smith, 2013). The following are two cases described by case worker and doctors to further illustrate barriers to healthcare access and the conflict of obligations and fair resource allocation when it comes to forced migrants or refugees:

Case Study 1

Madame Ros, a 58-year-old Rohingya widow, found herself in a precarious situation after the passing of her husband due to myocardial infarction. With no source of income, she relied on the kindness of her neighbors for shelter, moving between three different houses as she struggled to find stability.

A year ago, Madame Ros' health took a turn for the worse when she began experiencing prolonged cough, night sweats, and significant weight loss. A diagnosis of pulmonary tuberculosis (TB) was confirmed, and she was prescribed a new anti-TB medication, provided free of charge by the local government clinic.

However, her unstable living situation and financial constraints made it difficult for her to adhere to her treatment regimen, resulting in missed appointments and non-compliance with her medication. Six months later, Madame Ros's symptoms persisted, prompting a reevaluation that revealed she had developed Multidrug-resistant TB (MDR-TB). This more severe form of TB necessitated specialized treatment with second-line medications, rendering her ineligible for the free medication in a government hospital as previously provided.

Case Study 2

K, a 25-year-old male, presented to the Accident and Emergency Department after a work-related injury at a steel manufacturing

[1] Article 3(1) of Malaysia's Federal Constitution (Malaysian Federal Constitution, 2002, p. 15). Available from: Accessible at https://www.asianparliament.org/uploads/Country/Members/malaysia/malaysia%20const.pdf.

factory. Two hours earlier, his right hand was caught in the machinery. Colleagues quickly stopped the machinery, administered first aid to control bleeding, and brought him to the nearest healthcare facility. Physical examination revealed an extensive crush injury with continuous bleeding. K reported that his colleagues used four items of clothing to stem the bleeding, all soaked with blood.
The managing team suspected K had immune thrombocytopenic purpura (ITP) and that needed —platelet and packed red cells transfusion. However, K was a Rohingya refugee who has been in Malaysia since the age of 11. He had no official identification documents, and was not formally registered as a refugee.
On awareness of K's citizenship status, the blood bank and transfusion unit decided that as supplies of blood products were desperately low, they withheld the blood products to K, and reserved them for another patient instead - a Malaysian citizen who was undergoing an elective surgery the following morning, which was deemed by the managing team to be high-risk, and there was a possibility that blood products might be required.

The Role of Islamic Ethics in Addressing Healthcare Disparities among Refugees and Asylum seekers in Malaysia

Racial and religious fanaticism are on the rise globally, even in the most advanced civilizations. Although Muslims make up the vast bulk of refugees, public opinion is manipulated by racism, xenophobia, and populist fearmongering, conflating refugees with economic migrants and even terrorists (Abou-El-Wafa, 2009, p 6). The persistent negative attitudes towards refugees from the locals are (sometimes) reflected among the medical personnel, majority Muslims, and their inconsistency in care provision as described earlier.

The two cases highlight the ethical concerns with ethnicity or nationality playing a central role in ethical dilemma in healthcare. The concept of justice in Islam is rooted in God's Divine nature and is not limited to ethnicity or nationality. Being a signatory or not of the 1951 Refugee Convention should not be a pre-requisite to provide the necessary standards of healthcare. As stated in the Hadith, The Prophet Muhammad ﷺ said, "O My Servants, I have forbidden injustice upon myself and have made it forbidden amongst you, so do not commit injustice.". (Muslim)[2]

The Quran and Hadith's view on justice should provide an impactful guide and direction to the Malaysian Muslim community when considering the needs and plight of marginalised and oppressed population such as the refugees. The Qur'an states, *"Verily, God does not do even an atom's weight of injustice" (Qur'an 4:40).*

Abou-El-Wafa studied the differences between the principles of the Universal Declaration of Human Rights (UDHR) and Islamic law regarding the treatment of forced migrants and found a high-level of similarity - although UDHR is underpinned by universal and lay values whilst Islamic law obviously by the religious ones. The relevance of this revelation to a Muslim, is that adhering to the principles in UDHR is enshrined by Islam as a duty for all practicing Muslims (Abou-El-Wafa, 2009, p. 166). The duty to treat forced migrants or refugees fairly is expected in Muslims as part of their ethos and values, and thus, does not require a state to ratify or enact a law.

[2] *40HadithNawawi: Hadith 24.* (n.d.). https://40hadithnawawi.com/hadith/24-the-forbiddance-of-oppression/

In contrasts to Western ethics, which has developed into a philosophical science based on the writings of Kant and Augustine, and draws human reasonings and experience as the arbiter between right and wrong (Padela, 2007), Islamic ethics draws its resources from religious texts namely the Islamic Sciences (Fiqh), Tafsir (interpretations of the verses of Quran), Hadith and Kalam (scholastic theology). The fact that Islamic ethics is derived from sacred texts or resources, obligates a doctors of Muslim faith to abide by the principles espoused in Islamic ethics. Muslim doctors need to revisit the fundamental Islamic foundations that demand justice for all, regardless of their social characteristics or citizenship status.

Medical decisions made by Muslim doctors on refugees should be guided by religion. The teachings of the Qur'an, the Hadith and Islamic jurisprudence (Fiqh), form the foundation of Islamic ethics in healthcare, which provides a thorough framework for healthcare decision-making. The moral precepts in Islamic ethics highlight the value of justice, the sanctity of life, and the obligation to provide for the marginalised and vulnerable population. Adopting these principles to medical practice and healthcare delivery in Malaysia will lead doctors and administrators to abide to the principles and rules as outlined-in the sacred texts.

Cole (2007) suggests that if we are not able to make ethically principled distinction between citizens and refugees, which can act as a moral basis for discrimination, then we might discover that a system that many consider to be ethical, is grounded in highly immoral standards. As Muslims, we are guided by rules of behaviour underpinned by an unflawed ethical framework from our scared texts and traditions, which applies to all people regardless of their status, especially those who are oppressed and suffering. In the Quran, Allah (SWT) says: "*Help one another in acts of piety and righteousness. And do not assist each other in acts of sinfulness and transgression. And be aware of Allah (Quran 5:2)*

Healthcare providers have a duty to treat all patients equally, regardless of their socioeconomic background, ethnicity, or nationality. The Hippocratic Oath, professional code of conduct and obligation toward patients and society, and upholding human rights and dignity are the foundations of this duty.

A Muslim's faith is based on their submission to the Will of God, guided by their total belief in the sacred text. This presents an added obligation for Muslim doctors as stated in scriptures, that places strong emphasis on kindness and justice toward forced migrants.

"And [they] who settled in the city and embraced the faith before them love those who immigrate to them and find no hesitation in their hearts for what they are given [to share]. They give [them] preference over themselves, even if they are in need. And those who are saved from their own souls' greed, they are truly successful."(Quran 59:9)

This verse not only highlights the responsibility to uphold the rights and well-being of migrants, promoting selflessness and solidarity but also challenges the frequent argument made about that, "Many Muslims and citizens in Malaysia are also in need, so why should we help non-citizens who could potentially reduce our own resource?" The counter argument to this is strengthened by the Hadith from Abu Hurairah r.a that The Prophet Muhammad ﷺ said: "*Charity does not in any way decrease*

wealth'[3] In countries with a Muslim majority, these principles should ideally inspire societal and systemic support for forced migrants. The idea of Muslim Solidarity, an Islamic concept of jurisprudence rooted in the belief that Muslims worldwide share a common bond and responsibility to support and stand in unity with one another (Pratisti, Hidayat and Sari, 2019), in relation to social justice is of extreme relevance to a Muslim doctor.

The obligation of Muslims to be responsible for their brothers in difficulty is another reason for Muslim doctors to treat, provide, and care for refugees and asylum seekers with the same attention and standards as for all other patients. The exclusion of 'some Muslims' from this idea and obligation is unacceptable in a Muslim society and worse in Muslim medical fraternity. In his last Sermon, The Prophet Muhammad ﷺ said that "an Arab has no superiority over a non-Arab nor a non-Arab has any superiority over an Arab; also, a White has no superiority over a Black nor a Black has any superiority over a White except by piety and good action." (*The Last Sermon of Prophet Muhammad(SAW)*, n.d.)

Regardless of faith, doctors are morally obligated to ensure equal treatment and actively address biases that may cloud their judgment. For Muslim doctors who accept that health is necessary for physical and psychological well-being, and abide by the Shari'ah that provides numerous principles of equality and justice, there is no room for discrimination and injustice. Yet, the realities often fall short of these expectations

Conclusion

It is a sobering thought that doctors have prejudices and biases causing significant negative outcomes to the patients whom they have taken an oath to care and protect. As amplified by their oath and status, doctors should be agents of prosocial change, advocacy, and social justice in contributing to a healthcare system that serves everyone equally and is committed to upholding human rights. There is no need to wait for policy change if doctors can lead and advocate for ethical practice, societal understanding, and appreciation of multiculturalism to counter against the damaging effects of individual, institutional, and societal racism, prejudice, and all forms of oppression as stated in the Quran:

"يَا أَيُّهَا الَّذِينَ آمَنُواْ كُونُواْ قَوَّامِينَ لِلَّهِ شُهَدَاء بِالْقِسْطِ وَلاَ يَجْرِمَنَّكُمْ شَنَآنُ قَوْمٍ عَلَى أَلاَّ تَعْدِلُواْ اعْدِلُواْ هُوَ أَقْرَبُ لِلتَّقْوَى وَاتَّقُواْ اللّهَ إِنَّ اللّهَ خَبِيرٌ بِمَا تَعْمَلُونَ"

Do not let the hatred of a people lead you to injustice. Be just! That is closer to righteousness. And be mindful of Allah. Surely Allah is All-Aware of what you do (Quran 5 : 8)

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[3] Sahih Muslim 2588 (n.d) https://sunnah.com/muslim:2588

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ISLAMIC ETHICS ON THE UTILIZATION OF SOCIAL MEDIA IN HEALTHCARE

Muhammad Asroruddin and Siti Aisyah Ismail***

Abstract

Amidst the debate of the pros and cons of social media, it should be viewed as a tool to promote goodness. Exploiting social media in healthcare applications requires a careful reflection of the roles and responsibilities from all parties. This article discusses the role of social media and the Islamic ethical responsibility related to engagements on healthcare issues in the public domain. This is towards ensuring patients and doctors will benefit and apply ethical principles, as well as checks and balances on information circulating on social media[3-5].

Keywords: Social media, healthcare, ethics.

Introduction

As people's information-gathering habits change over time, social media has become the primary source for obtaining virtually everything, including health-related needs. Issues raised in such interactions include authenticity and accountability, privacy and confidentiality, professional boundaries and personal identity, integrity and trustworthiness[1-3].

Social media platforms often use algorithms to target users based on their behaviors, preferences, and even health-related searches. While such targeted health messaging can improve outreach, it must be approached with ethical caution. The **public should remain vigilant** about the accuracy and intent of the information they consume, particularly when it comes to health advice, medical products, or treatment options promoted through these channels.

Social media interaction in health-related issues may take the form of promoting healthy lifestyle, addressing misinformation, and advertising healthcare centers and practices. The interaction empowers healthcare communication, discussion, education and awareness to achieve positive health outcomes, enables smarter choices and better utilization of resources. However, healthcare personnel and the public are advised against open online medical consultation, sharing unverified information, self-promotion, and engaging in hate speech. Social media interaction should focus on helping and supporting each other with respect[3-4].

Many health practitioners find inaccuracies and inconsistencies in the information received by patients on social media, so that the information provided by patients in the practice room may differ slightly or greatly from the current state of health and medical science and services. As a result, patients experience misinformation, and if patients act alone without consulting a practitioner, it will endanger the patient himself for the decisions he has made. Because the interaction is reciprocal, both healthcare personnel and the public should have their own set of conducts. They are free to interact if it aligns with scientific truth, general and professional ethics, and applicable laws[4].

*Dr Muhammad Asroruddin
Universitas Tanjungpura Indonesia
E-mail:
asroruddin@medical.untan.ac.id

**Dr Siti Aisyah Ismail, IMANI (Islamic Medical Association and Network on Indonesia)
E-mail: dr.sitiaisyah@gmail.com

Ethics of Healthcare Personnel

More practically and of relevance to the clinician, the four-principles of bioethics approach is interpreted through the prism of Islamic ethical theory, to assess what evidence supports this oft-used approach in the paradigm of Islam. Ethics of healthcare personnel refers to the moral principles and values that guide the behavior and decision-making of individuals working in the healthcare sector. In clinical practice, a widely recognized and practical framework is the *four-principles approach*, which encompasses **beneficence** (promoting the well-being of patients), **non-maleficence** (avoiding harm), **justice** (fairness in the distribution of resources and treatment), and **autonomy** (respecting the patient's right to make informed decisions)[2,6].

This article focuses on exploring how this four-principles approach aligns with, and is interpreted through, **Islamic ethical theory**—a system rooted in the Qur'an, Sunnah, scholarly consensus (ijmaʿ), analogical reasoning (qiyas), and consideration of public interest (*maslahah*). Rather than accepting the principles at face value, the discussion critically evaluates the *compatibility*, *supporting evidence*, and *practical application* of each principle within the Islamic paradigm[7].

We highly need to assess whether the four-principles model, which originates from Western bioethics, can be meaningfully and authentically integrated into an Islamic moral and legal framework, especially in the clinical context where Muslim healthcare providers and patients navigate complex ethical decisions. This discussion is essential not only for understanding the theoretical underpinnings of Islamic medical ethics but also for guiding healthcare personnel in culturally and religiously appropriate care[7].

Respect for individual dignity and autonomy, the promotion of social justice, ensuring patient safety (principle of la dharar wala dhirar, sadd zariah) and the appropriate use of technology are all ethical values that apply to social media interaction on healthcare from an Islamic perspective. Peer interaction to keep with updated information, share new discoveries, consult experts and network for health advocacy, should protect patient's privacy and be done in a good manner[2].

Ethics of The Public in Healthcare

In the digital age, social media has become a powerful tool in healthcare communication, including **targeted advertising**, **health campaigns**, and **information dissemination**. While this presents new opportunities to reach the public efficiently, it also raises significant ethical concerns regarding **privacy**, **misinformation**, and **manipulation**. Social media targeting in healthcare is growing as a targeted advertising method. The public should be aware. All information should be filtered and appraised. Checking for the credibility of the source of information should be well conducted. Collective benefit always takes precedence over personal interest (principle of *maslahah ammah*). From a public ethics perspective, individuals are no longer passive recipients of healthcare but **active participants** in information consumption and dissemination. This shift demands ethical literacy and **moral discernment** from the public, especially when engaging with health information online. In other words, the social media and information credibility should be properly navigated. The users should practice some steps as follows[3].

Information Filtering and Credibility

Members of the public have a **moral responsibility** to **filter and critically appraise** any health-related information encountered online. Not all content shared via social media is evidence-based or free from bias. False or misleading information can lead to poor health decisions, panic, or

even harm. Therefore, users should be encouraged to[3]:

- Verify the **credibility of the source** (e.g., WHO, CDC, accredited medical institutions).
- Cross-check with **peer-reviewed scientific evidence** or consult licensed professionals.
- Avoid sharing unverified or sensationalist health claims[5].

Islamic Ethical Principle – Maslahah 'Ammah (Collective Benefit)

From an Islamic ethical standpoint, the principle of **maslahah 'ammah** (public interest or collective welfare) holds that **the wellbeing of the community takes precedence over individual desires or unregulated freedom**. This principle supports the notion that:

- Information should be shared only if it contributes positively to the community's health and does not spread fear, confusion, or false hope[6].
- Personal autonomy in speech and expression is important, but it must be **balanced with social responsibility** and the obligation not to harm others.
- In public health crises (e.g., pandemics), **truthful communication**, transparency, and collective cooperation are moral imperatives[9].

For example, promoting vaccine hesitancy based on misinformation not only undermines public health but contradicts the ethical principle of preserving life (*hifz al-nafs*) and promoting the common good. In summary, the **ethics of the public in healthcare**—particularly in the age of social media—require a thoughtful balance between freedom of information and **communal responsibility**.

Both the creators and consumers of health content have an ethical duty to ensure that the information shared is accurate, responsible, and aligned with the principle of **collective benefit over personal gain**, as enshrined in Islamic moral theory[6].

A Shared Moral Responsibility

Thus, public ethics in healthcare involves more than passive compliance. It reflects an **active moral engagement**—where both individuals and institutions bear responsibility to ensure that health-related information supports societal wellbeing. Social media, when used ethically, can serve as a powerful tool for collective benefit. But its misuse can harm the very fabric of public health—physically, psychologically, and socially[9].

In the Islamic tradition, preserving the welfare of society is a divine imperative. As such, ethical engagement with healthcare content online must reflect the values of **honesty, responsibility, and communal care**, rooted in both **Islamic moral theology** and **universal principles of justice and harm prevention**[8].

Bridging The Islamic Ethics and Four Principles

The intersection of Islamic medical ethics and social media presents a complex and evolving landscape. Here's a breakdown of key ethical considerations, combining or bridging between the Islamic ethics and the four principles. It's important as well to understand that Islamic ethics are drawn from a holistic understanding of the Quran and Hadith, rather than single, isolated verses. Therefore, the application of these principles to modern issues like social media requires careful interpretation by Islamic scholars. Some foundational verses and Hadith that relate to the core ethical values are discussed below[3-5].

Core Islamic Ethical Principles:

a. *Truthfulness (Sidq)*

This is paramount. Information shared, especially regarding health, must be accurate and verifiable. Spreading misinformation or false medical claims is strictly prohibited. The Quran stated that, "O you who have believed, fear Allah and be with those who are truthful." (Quran 9:119). This verse emphasizes the importance of being truthful and associating with truthful people. This principle directly applies to the need for accurate information on social media, especially concerning health. Whereas the Hadith stated that, "Indeed, truthfulness leads to righteousness, and righteousness leads to Paradise. And a man continues to speak the truth until he is recorded with Allah as a truthful one." (Sahih Bukhari and Sahih Muslim). This hadith highlights the high value placed on truthfulness in Islam.

b. *Trustworthiness (Amanah)*

Medical professionals and those sharing health information have a responsibility to be trustworthy. This includes respecting patient privacy and confidentiality. The Quran said, "Indeed, Allah commands you to render trusts to whom they are due and when you judge between people to judge with justice. Indeed, excellent is that with which Allah instructs you. Indeed, Allah is ever Hearing and Seeing." (Quran 4:58). This verse emphasizes the importance of fulfilling trusts and acting justly, which is crucial for medical professionals and anyone sharing health information. In Hadith, "There is no faith for one who is not trustworthy, and there is no religion for one who does not keep his promises." (Musnad Ahmad). This hadith underscores the connection between trustworthiness and faith.

c. *Beneficence (Ihsan):*

Social media should be used to promote well-being and provide beneficial information. Sharing harmful or misleading content contradicts this principle.

d. *Justice (Adl):*

Equity in access to health information is crucial. Social media should not exacerbate existing health disparities.

e. *Preservation of Life (Hifz al-Nafs):*

Any information that could endanger life or promote harmful practices is unethical. The Quran said, "And whoever saves one life - it is as if he had saved mankind entirely." (Quran 5:32). This verse highlights the sanctity of human life and the importance of protecting it. This principle is fundamental to Islamic medical ethics. In Hadith, the Prophet Muhammad (peace be upon him) emphasized seeking medical treatment when necessary, indicating the importance of preserving health.

Ethical Challenges in the Social Media Context:

a. *Dissemination of Misinformation:*

Social media's rapid spread of information makes it vulnerable to the proliferation of fake medical news and unverified health claims. This poses a significant threat to public health.

b. *Privacy and Confidentiality:*

Sharing patient information, even anonymously, can violate privacy. Medical professionals must exercise extreme caution when discussing cases online.

c. *Online Consultations and Advice:*

Providing medical advice online without proper examination and context can be dangerous. Ethical

guidelines are needed to regulate online consultations.

d. *Exploitation and Commercialization:* The promotion of unproven or harmful medical products and services for profit is unethical

e. *Maintaining Modesty and Respect (Adab):* Islamic teachings emphasize modesty and respectful communication. Content shared should adhere to these principles.

Key Considerations:

a. *Verification*, users should critically evaluate health information and rely on credible sources.

b. *Professional responsibility*, medical professionals must uphold ethical standards when using social media.

c. *Community awareness*, raising awareness about ethical social media use is essential.

d. *Balance*, social media use should not infringe on time for worship or other obligations.

In essence, the ethics of Islamic medicine within social media require a strong adherence to core Islamic values, particularly truthfulness, trustworthiness, and the preservation of life.

Conclusion

The four-principles approach to biomedical ethics—beneficence, non-maleficence, justice, and autonomy—shares significant common ground with Islamic ethical theory. However, Islamic ethics situates these principles within a theocentric framework, grounded in divine revelation, legal tradition, and spiritual accountability.

For Muslim healthcare professionals, the four principles can serve as a valuable guide when interpreted through Islamic jurisprudence and moral values. This synthesis provides a holistic ethical framework that honors both medical best practices and religious commitments, ensuring compassionate, just, and spiritually conscious care.

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PATIENT PRIVACY AND CONFIDENTIALITY IN THE TECH ERA

*Mustika Chasanatusy Syarifah**

Abstract

Technological progress and the changing digital health environment have provided creative answers to many problems in healthcare system while increasing the volume and variety of digital interactions and personal health data generated and gathered within and beyond conventional healthcare settings[1]. The digitization of healthcare services in Indonesia is transitional, highlighted by the rise of unofficial health organizations or facilities. Issues or adverse effects associated with health service applications include potential concerns surrounding the legality of professional licenses, certifications, therapeutic transactions, insurance challenges, and patient medical records' confidentiality[2].

According to a poll conducted by Deloitte Indonesia, Bahar, and the Indonesian Center for Healthcare Policy and Reform Studies in 2019, 15.6% of consumers were still not satisfied with the applications used for health services. People continue to worry about the security of data in health services, which leads to this discontent[3]. Approximately 61.2% of individuals refrain from utilizing it due to specific trust issues, particularly a distrust in health information, personal data, potential communication failures, the precision of disease diagnoses, and the legal protections afforded to the parties involved.

In medical ethics, patient privacy and confidentiality are paramount, safeguarding dignity and fostering trust—principles deeply embedded within Islamic teachings[4]. From an Islamic perspective, the safeguarding of patient information is not merely a professional obligation but a sacred trust, or *amanah*, rooted in the Quran and the Sunnah.

The Prophet Muhammad (PBUH) said, **"When a man tells something to another and then looks around, it is a trust."** (Jami At Tirmidhi: 1959). This general principle extends powerfully to the doctor-patient relationship, where vulnerability is high and sensitive information is shared. Healthcare professionals, therefore, are entrusted with a patient's most intimate details, and breaching this trust is considered a grave sin. The Islamic concept of *sitr* (covering or concealing) also reinforces this, encouraging the concealment of others' faults and private affairs.

*Mustika Chasanatusy Syarifah, MD, PathFor, Master Degree in Health Law
Head of Department of Forensic Medicine and Medicolegal, Faculty of Medicine, Universitas Nahdlatul Ulama Surabaya, Indonesia.
Forensic Pathologist, Rumah Sakit Islam Surabaya Jemursari, Indonesia.
ORCID: https://orcid.org/0000-0002-7789-7923
E-mail: mustika.cs@gmail.com

However, Islamic jurisprudence recognizes limited exceptions where disclosure might be permissible, even obligatory[5]. These exceptions are typically justified by the principle of preventing greater harm (*maslahah mursalah*) or averting public danger. Examples include reporting contagious diseases to protect the community, or disclosing information if a patient intends to harm themselves or others, or in cases involving serious criminal activities. These exceptions are meticulously weighed against the patient's right to privacy, always prioritizing the greater good while striving to minimize any breach. Ultimately, Islamic medical ethics views patient confidentiality as a profound moral and religious duty, upholding the sanctity of individual privacy within a framework that also considers societal welfare[6].

Since COVID-19, telemedicine users have increased by 60%[7]. A national study involving 36 million working-age individuals with private insurance claims data revealed that telemedicine visits surged by 766% during the first three months of the pandemic, rising from 0.3% of all interactions from March to June 2019 to 23.6% of all interactions in the corresponding period[8].

The digitalization of medical data still has shortcomings and even the potential for data leaks. The pandemic might catalyze harnessing the full capabilities of telehealth. Still, there are worries that swift deregulation could jeopardize safety and privacy, even though existing data, despite its limitations, indicates an overall high quality of care[9]. Following the pandemic, adopting a more nuanced perspective on privacy may be necessary to facilitate telehealth's growth. Privacy concerns should not hinder patients' urgent need for timely care[10]. In this case, it was essential to safeguard patients' privacy from malicious individuals attempting to interfere with their records, prompting the pursuit of both technological and regulatory measures to address this privacy issue[11].

The data in a patient's medical record can be used not only as a reference for determining the treatment but also for scientific research. In this chapter, we will briefly discuss the management of medical confidentiality in today's ever-evolving digital era and how medical personnel should act in the face of these changes.

Keywords: Patient Privacy, Confidentiality, Indonesia, Digitalization, Medical records

1. Privacy and Confidentiality are Two Different Things

Privacy is the ethical entitlement of individuals to control the access and sharing of their personal information. Security of Electronic Health Records entails securing data and protecting resources, including the methods used to store and transfer data within computer systems[12]. In healthcare, privacy signifies that patients ought to manage the utilization of their medical records by granting consent. Patients can view and amend their details as reflected in Electronic Health Records. Within this framework, privacy represents the individual right of patients to maintain complete authority over their information[13].

Confidentiality builds upon the concept of privacy and primarily relates to safeguarding information, particularly sensitive medical data. This concept is distinct from privacy, emphasizing trusted communication or mutual

agreement between healthcare providers and patients. Those who have access to patient records bear an ethical and legal responsibility to maintain the confidentiality of that information[13]. Confidentiality means securing information from unauthorized individuals during data storage and transmission while the patient receives treatment. Confidentiality can be achieved through data encryption and managing access to systems using passwords. Confidentiality addresses privacy issues and helps guarantee that patient information is shielded from unauthorized alterations or deletions[14]. Gaining access without permission can lead to the loss of data and, in some situations, may threaten the personal safety of the individual patient on various levels, for instance, data breaches or leaks related to HIV and other sexually transmitted infections[15].

While privacy and security are closely connected, they are fundamentally distinct. Security refers to the measures that govern who can access personal information, permitting only those authorized. Conversely, privacy pertains to an individual's right to decide when, how, and to what extent others can share or access their personal information[16].

The three key components that support the security of protected health information, as described by HIPAA (Health Insurance Portability and Accountability), are access, administrative, and physical safeguards[17]. Administrative safeguards involve a healthcare facility assessing risks and implementing suitable risk reduction strategies. Access safeguards consist of measures to regulate access to workstations and physical security methods such as system architecture, software, firewalls, and anti-virus solutions to protect against potential threats to stored data. Healthcare providers must be responsible for their practices, and most organizations have policies in place.

2. What Is Included in Patient's Privacy and Confidentiality?

a. Personal Identifying Information, Health Information, and Protected Health Information.

Health information (HI) refers to details concerning an individual's previous, current, and future healthcare or health conditions and information pertaining to healthcare payments. A specific category of health information is known as individually identifiable HI[18].

Individually identifiable information, commonly referred to as personally identifiable information (PII), is often mistakenly equated with individually identifiable health information. Some aspects of personally identifiable information, such as names and social security numbers, may appear in medical records. However, they do not constitute health information and are therefore not classified as protected. While this characterization of protected health information is accurate, it may be misconstrued as personally identifiable information within health records unless we clarify the components of these groups and their connections[18].

According to HIPAA, protected health information encompasses all information that can identify an individual, which includes demographic details, medical records, test outcomes, insurance details, and any other information utilized to identify a patient or to deliver healthcare services or coverage[19]. It also includes transmission forms, including electronic and paper formats. The definition of "covered entity" includes, among others, hospitals, insurance firms, and healthcare practitioners[20].

Confidentiality of protected health information is crucial because sharing it with unauthorized individuals, whether deliberately or unintentionally, can negatively impact patients. For example, in correctional facilities, the incorrect release of protected health information might lead to inmates attacking others who have health conditions associated with considerable social stigma[21]. Although transmitting protected health information typically requires the patient's consent explicitly, there are circumstances in which it can be shared without permission. For instance, protected health information may be disclosed without consent for purposes related to payment and legal proceedings within a correctional facility. Furthermore, if a significant threat to an individual's health or safety can only be prevented through disclosure, such sharing is permissible[22].

b. Electronic Medical Record (EMR)

Before the technology era, medical records were maintained on paper. However, with recent technology advancements, it has become feasible to convert these paper records into electronic formats. Like traditional paper medical records, the electronic version comprises information, including recording a person's medical history. In contrast, the electronic format is stored digitally. The digital version of medical records is called electronic health records (EHR)[23].

Electronic health records (EHRs) are known as electronic medical records (EMRs) and have become increasingly integrated into the worldwide shift towards digital technology. Nonetheless, it is crucial to differentiate between EMRs and EHRs. Electronic medical records digitize the traditional paper charts for a specific patient found in the physician's office. In contrast, EHRs contain all the information available in EMRs and comprehensive health status data for the patient, intended for use by healthcare providers and specialists from various medical fields, as needed. EMRs generate legal documentation at hospitals and serve as the primary source for EHR data[24].

The adoption of EHRs has expanded considerably over the last ten years. EHRs represent a digital version of a patient's medical history maintained by the healthcare

provider over time[24]. Health information systems include sensitive patient data, such as their names, addresses, test results, diagnoses, treatments, and medical histories. Protecting this information from outside parties' unauthorized access and fraudulent activities is crucial. EHRs are anticipated to boost efficiency in healthcare provision, enhance the quality of care, and alleviate financial pressures. However, despite these anticipated advantages, EHRs may still face security risks that could compromise the confidentiality and privacy of patients' personal information[12].

3. **Privacy and Confidentiality of Medical Records**

EHRs are becoming more common among patients, hospitals, doctors, and healthcare providers. EHRs offer several benefits, including lower healthcare costs and improved record storage efficiency. However, adopting EHRs brings up issues related to patient information security, privacy, and accuracy. These issues can influence patients' willingness to share their health data and may lead to serious consequences[16].

The right to privacy now includes an individual's ability to manage their personal information, although this has become increasingly difficult in the age of digital platforms. This contentious issue has been exacerbated by advancements in digital technology, such as the Internet, cloud computing, digital platforms, and the metaverse, among other innovations. For instance, online privacy has often been violated as companies have unlawfully collected, retained, exploited, or misused consumer data without obtaining adequate consent[25].

The Indonesian Medical Council explained in the Medical Record Manual that every doctor or dentist who carries out medical practice must maintain confidentiality regarding the patient's medical history contained in medical records. The Electronic medical record can be entered in for the patient's benefit to fulfil the request of law enforcement officials, the patient's request, or based on applicable statutory provisions only[26].

Based on the American College of Physicians Ethics Manual, confidentiality is the obligation of all holders of personal health information to protect the information according to the privacy interest of the person to whom the information relates. For clinicians, respecting confidentiality "is a fundamental tenet of medical care"[27]. Personal health information in these issues refers to any health-related information collected or exchanged by any entity, including protected health information and individually identifiable health information as defined by HIPAA, as well as personal health or health-related information collected by any entity.

4. **Privacy and Confidentiality for Research**

Maintaining confidentiality and privacy is a crucial ethical aspect of any research that involves gathering information from human participants. Generally, data published from research should be anonymized to protect against the

potential harm to research subjects that could arise from sharing sensitive information. Participants have confidence that researchers will handle their sensitive information responsibly and prevent unauthorized access. This ethical guideline influences a participant's readiness to divulge personal and often private information, impacting the richness and quality of the research data. Sensitive information encompasses a wide range of data, from contact details to protected health information. Ultimately, any identifiable information that can link the research back to participants has the potential to reveal their identities and, therefore, breach their trust[28].

In terms of informed consent, researchers need to obtain the voluntary informed consent of each participant before any data gathering occurs. The informed consent letter should outline the primary goals and purposes of the research, as well as the ethical considerations involved, such as confidentiality and anonymity. It is also important to emphasize the conditions of the research participant agreement and obtain their consent and approval before moving forward with data collection[29]. Establish robust data security protocols for storing and processing information, utilizing encryption and secure database systems. Restrict access to this information to only those personnel who need to have the specific information, and ensure that any physical data is kept in a safe environment[28].

A practical method to protect respondent data is to share files with individuals who require secure access securely. Generally, researchers should manage who can access the data and the timing of that access. Researchers should avoid collecting or sharing data through cloud storage services. The difficulty with cloud storage lies in the lack of complete data control. For instance, if cloud services go offline or are compromised, researchers cannot resolve the problem. While cloud services facilitate information sharing, researchers do not maintain complete control over data in the cloud, further heightening the risk of data breaches and cyber threats for research participants. Instead, researchers should consider storing encrypted data on an external drive and exploring more secure methods for data sharing[30].

5. Potential Challenge and Roadblocks

The emergence of big data has sparked considerable innovation across various sectors by facilitating improved decision-making, tailored services, and predictive analysis. Nonetheless, this innovation frequently necessitates substantial amounts of personal data, leading to fundamental conflicts with data privacy safeguards[31].

a. Data Leaks

Medical data leaks have become a frequent issue in the healthcare industry. Furthermore, this sector experiences the highest expenses from data breaches, over three times greater than other sectors. An IBM report states that the average financial impact of data breaches in healthcare is 7.1 million[32].

A data breach, as defined by the US Department of Health and Human Services, refers to the unauthorized use or release of private health information that jeopardizes its

privacy or security by the privacy rule and represents a significant risk of financial, reputational, or other forms of harm to the individuals involved[33]. Security breaches can also happen inadvertently when healthcare providers exchange information. Approximately 73% of doctors use text messaging to communicate with fellow physicians regarding patient interactions and treatment practices. Maintaining the security of this information is difficult since it's impossible to monitor what is being shared and whether unauthorized parties can intercept it. Mobile phones are primarily designed for personal use and often lack the security features of desktop systems that connect to a shared organizational network. Additionally, mobile devices can be easily lost or stolen, allowing unauthorized individuals access to sensitive information[12]. A data breach can happen when confidential health information is transferred or shared without permission. If the data utilized in medical treatment is compromised due to unauthorized access, patients might suffer fatalities or experience lasting and irreversible damage[33].

b. Increasing Prowess of Attackers

Based on research conducted by Muthuppalaniappan (2020), there have been many cyber attacks on internet networks in several hospitals, including the internet network at Czech Hospital, ransomware attacks on the COVID-19 vaccine trial group in the UK, unspecified cyber-attack on the construction company building the UK's emergency COVID-19 hospitals. One of the largest COVID-19 testing laboratories in the Czech Republic operated within the hospital, leading to a complete shutdown of its IT network. The cyber-attack caused considerable delays in diagnostics across the region, negatively affecting patient care. Additionally, INTERPOL has recently reported that hospitals and universities have been targeted by cyber-criminals who threaten to hold them for ransom[34].

Academic institutions encounter various specific threats, such as the unauthorized disclosure of sensitive research data or confidential patient information. Cyber-attacks also pose a risk to medical academic institutions developing sought-after COVID-19 vaccines or novel treatments[35]. Universities must ensure that all faculty and students understand essential cyber-security principles and know where to report unusual activities. The varied nature of users accessing university networks complicates the task of granting access only when necessary, yet this is crucial for preventing attackers from regularly exploiting legitimate user credentials to infiltrate the network. Employees and students using the internal network from remote devices on home or at campus should utilize a VPN. VPN provides encrypted and secure access to the internal network, significantly minimizing the risk of a breach[36].

Concerns or adverse effects associated with health service applications involve potential issues related to the legality of professional

licenses, certifications, and therapeutic procedures, as well as challenges related to insurance and the confidentiality of patient medical records. The personal information of six million COVID-19 patients managed by the Indonesia Ministry of Health was exposed and circulated on the illicit site RaidForum. This sensitive data encompasses patient identification details (including home address, date of birth, phone number, and identity number) and medical records that feature the patient's medical history, diagnosis with the ICD-10 coding system, clinical assessments, reference identification numbers, supporting tests, and treatment plans[37].

c. Health Care Worker and Office Workers Skills

The primary obstacles include finding methods to enhance EHR systems' ability to safeguard data privacy while still maintaining their performance and interoperability[16]. The healthcare sector encounters numerous cybercrimes where hackers can infiltrate sensitive data and patient information. Additionally, internal issues like inexperienced healthcare staff pose significant challenges. Medical personnel who do not possess the necessary skills to manage EHRs may inadvertently lead to breaches in patient data, which could jeopardize the health and safety of patients[38].

Human mistakes play a major role in data breaches. Staff members may succumb to phishing schemes, inadvertently reveal PHI, or improperly manage data due to inadequate training. Although HIPAA requires training for the workforce on data management and safety, ensuring compliance in this regard can be challenging, especially in large organizations where employees might not completely grasp or follow policies[39].

The preparedness of human resources to implement electronic medical records varies across different healthcare facilities. Similarly, the capacity to offer the necessary facilities and infrastructure for supporting electronic medical record services is inconsistent. Besides, variations in regional circumstances and the availability of internet infrastructure can differ from one area to another[2].

A study indicates that the most worrying issue regarding privacy, confidentiality, and security was the fear of disclosing health information in electronic health records (EHRs) without explicit written consent. One-third of the participants expressed worries about administrative security, citing a lack of proper training on security matters related to EHRs and highlighting insufficient staff awareness of data protection practices. Moreover, there are concerns about unauthorized access to systems by non-medical personnel, threats to physical security, and unexpected system failures[13].

6. Protecting Health Information That Includes Patient Identifying Details

In a time where data holds value comparable to currency, the risks associated with patient information have reached new heights. Every innovation

in healthcare technology transforms patient treatment and healthcare management and alters the medical sector's fundamental ethical guidelines, security measures, and privacy expectations. Tackling these challenges necessitates balancing the significant advantages of advanced healthcare and the urgent need to safeguard patient rights, maintain ethical practices, and ensure security in increasingly digital healthcare environments[2].

a. Protecting Health Information By Sistem

It is necessary to restrict access to the database. Different strategies can be utilized to control access. The database administrator can set permissions such that only specific individuals can write data, and once it has been written, it is designated as read-only. Additionally, the administrator can limit the quantity of data that can be read briefly, capping each account's access to a specific number of patient records daily. The system operation that supports electronic health records can also facilitate access restrictions, with accounts used by various departments having limits on the amount of information they can access within a specific timeframe. Access control measures should also prevent downloading or transferring data and restrict the reading of materials outside one's professional scope. For example, healthcare practitioners should only be able to view patients' medical histories while not having permission to the insurance details or financial information, making it difficult for anyone with account access to view comprehensive patient profiles[40].

Healthcare providers have numerous methods to safeguard protected health information, enhance patient care, and maintain patient safety, especially regarding PHI's electronic storage and transmission. Some standard practices include data masking, encryption, and deidentification. Encryption acts like securing data in a vault, allowing access only to those with the correct digital key or certificate. Data masking substitutes sensitive data points with altered ones while retaining the overall usefulness of the data set as a reference. While encryption is particularly effective for protecting data during transmission, data masking is more beneficial for sharing information with external organizations. Deidentification carefully removes 18 types of identifiable information, including names, phone numbers, and biometric data such as fingerprints and voice prints[41]. De-identification eliminates identifiers from health information, which reduces privacy risks for individuals and facilitates the secondary use of data for studies on comparative effectiveness, policy evaluation, life sciences research, and other purposes[42].

b. The Role of Health Workers in Maintaining Patient Privacy and Confidentiality in the Tech Era

The interlinking of health facilities can lead to unauthorized individuals gaining access to patient medical records, potentially jeopardizing the confidentiality of that data.

Consequently, hospitals, physicians, dental practitioners, and other healthcare professionals must protect medical record confidentiality. Healthcare institutions should establish adequate data backup systems to protect patient medical record information[2].

Safeguarding patient confidentiality necessitates teamwork among all parties involved, which encompasses patients. These organizations hold Protected Health Information (PHI), users of Health Information (HI), creators of automated de-identification tools, and regulatory and law enforcement government bodies[18]. The Privacy Rule established by the Health Insurance Portability and Accountability Act (HIPAA) outlines the regulatory structure and balances the need for protective measures with the availability of health information for secondary (scientific) purposes. This rule specifies the circumstances under which health information is legally protected and describes the methods for de-identifying protected health information for secondary usage. Contemporary clinical text de-identification systems facilitate the advancement of big data, allowing researchers to obtain de-identified clinical data while safeguarding patient privacy[18].

Relying solely on technology to protect an organization is insufficient. Workers are the best line of defense; therefore, they must receive training on effective practices to secure the system. Staff can be instructed on managing patient information and recognizing unusual patterns online or in emails. It is essential for employees to identify suspicious activities, like unauthorized logins to the healthcare organization's computer systems using their accounts, and to understand the appropriate steps to take if they notice any odd behavior[43].

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A SCIENTIFIC REVIEW AND ISLAMIC PERSPECTIVE OF GENETIC ENGINEERING

*Ammar K. Daoud**

Abstract

Modern medical and scientific advances in many fields with their tools of testing and measuring things cause major changes in our understanding of how Allah made His creations. Within these rules of His control of our lives, health and diseases, it deserves to be examined deeply. Genetic testing and manipulations are changing very rapidly in speed and scope into many fields, making it challenging of how to continue to observe their moral, ethical and legal boundaries. Islamic Jurisprudence mandates that good understanding of the subject matter and evidence are prerequisites to passing any judgment on any issue. This review attempts to understand part of the majestic ways of Allah's creation of the human body, earth and heaven, living things and materials in response to his call to look, think and seek evidence of his signs in the universe. This review is not intended to be a deep explanation of the technical aspects of genetic engineering but a general description of it.

"قُلْ سِيرُوا فِي الأَرْضِ فَانظُرُوا كَيْفَ بَدَأَ الْخَلْقَ ثُمَّ اللَّهُ يُنشِئُ النَّشْأَةَ الآخِرَةَ إِنَّ اللَّهَ عَلَى كُلِّ شَيْءٍ قَدِيرٌ" سورة العنكبوت:20

"Say, [O Muhammad], "Travel through the land and observe how He began creation. Then Allah will produce the final creation. Indeed Allah, over all things, is competent". (Sura 29, Al Ankaboot, Verse 20).

Introduction

Human health or disease results from either genetic or environmental factors, or a combination of both. For example, the disease of Phenylketonuria (a preventable cause of mental retardation) is genetic with any of many mutations of the gene phenylalanine hydroxylase (PAH) gene, which causes a lack of or reduced amount of the enzyme that's needed to process the amino acid phenylalanine. This mutation has to be inherited from both parents as it is autosomal recessive form. The effect of the lack of this enzyme is evident in people with normal or high protein diet with this amino acid. If the patient takes a low protein diet from birth for life, it is an environmental state that will allow the person to develop normally without the disease[1]. Furthermore, there are also many gene-gene interactions (like Atopic Dermatitis which occur in people with simultaneous genetic mutations in the FLG genes, IL-4 and IL-4 receptor)[2] or environmental-environmental interactions (like the exaggerated severity in cases of malnutrition and infectious diseases like viral mumps or Tuberculosis[3].

The definition in the Encyclopedia Britannica of " **genetic engineering is**, the artificial manipulation, modification, and recombination of DNA or other nucleic acid molecules in order to modify an organism or population of organisms. The term *genetic engineering* is generally used to refer to methods of recombinant DNA technology, which emerged from basic research in microbial genetics"[4]. **Table1** summarizes in the latest numbers of the many facts known about human genetic material[5] and proteins[6], with the DNA mainly found in the nuclei in chromosomes, but can be found at other sites like the Mitochondria or Extra Chromosomal DNA found in nuclei of cancer cells[7].

*Dr. Ammar K. Daoud, MD, FAAAAI
Department of Medicine – Faculty of Medicine
Jordan University of Science and Technology
E-mail: amdaoud@just.edu.jo

10 Trillions	Estimated Number of Proteins in Each Human Cell
3.2 Billions	Number of nucleotides in the whole human DNA genome of either 1 in 4 nucleic bases
229378	Number of Proteins in the Proteins Data Bank
20000	Estimated Number of genes in human genome
99.9%	Estimated Identical DNA between all humans and the differences only in 0.1%
98%	Estimated non-coding DNA with only 2% transcribed to proteins
46	Number of chromosomes in all nucleated Cells (22 pairs autosomal and 1 pair Sex chromosome)
42%	Body weight % protein (without water)
37	Number of Genes found in the Mitochondria related to energy metabolism inherited only through females
22	Number of Amino Acids (20 in humans coded by DNA and 2 unique for Bacteria Selenocysteine and Pyrrolysine, and almost 400 with modifications)

Table1 Genes and Proteins in Numbers summary of current estimates

Understanding of Genetics or Genetic Engineering depends on deep sound understanding of biochemistry and the biochemical steps encountered. **Figure 1** summarizes the basic knowledge about these processes from the DNA to the proteins. It starts with the gene made of DNA is transcribed into a primary RNA processed to form the mature mRNA that leaves the nucleus into the rough endoplasmic reticulum to be translated into a protein polypeptide chain. Posttranslational processes can occur changing it into the final protein in need. The example of the hormone Insulin journey[8] starts with the INS gene on Chromosome 11 made of 1431 Nucleotides and transcribed into RNA with 3 exon segments (2 intron removed) into the proinsulin mature mRNA that is translated into the polypeptide chain. Proinsulin is composed of 86 amino acids that get cleaved into B chain, A chain (connected by disulfide bonds) and the C peptide as posttranslational modification on it to form the circulating Insulin Hormone. The Insulin drugs for diabetic patients are made by inserting the mature human gene via a plasmid from a virus into bacterial cells that will make the protein needed. This is an example of Recombinant DNA technology use[9].

Genetics

Figure 1 shows that some genetic processes occur at the level of the DNA like Single Nucleotide Polymorphisms, mutations of deletion, insertion, duplications that lead to mis-sense, nonsense or termination of the transcription processes and result in a mildly modified or completely modified protein[10]. Bigger events occur if a whole chromosome (each roughly has 1000 genes) leading to chromosomal anomalies like Down's Syndrome. Other events occur with the transcription from DNA to RNA with Intron/Exon splicing, while for other long pieces of RNA alternative splicing make different end versions of protein from a primary RNA read. The journey of the protein synthesis does not end there. Each protein has 4 levels of complexity in its structure. Primary is the sequence of the Amino Acids it has. Secondary structure is due to interactions of nearby amino acids residues making alpha helixes or beta pleated sheaths, and tertiary due to interactions between faraway amino acid residues like disulfide bonds between Cysteine (an Amino Acid) residues distant in the primary structure chain. Quaternary structure is due to the interactions of multiple polypeptide chains to form the functional protein needed. Other modifications can occur to the protein like breakages or chemical modifications like the event of glycosylation to any protein and we use this phenomenon to estimate the quality of long term glucose control in diabetic patients when we test for the HbA1c level (percentage of glycosylated hemoglobin every 3 months).

Genomics

With the technical advances and the computing power of equipment used, the focus of the study widened to be able to include all the genetic material of an organism and that is called **Genome,** and its

study is called **Genomics**[11]. If we are interested only on the transcribed portions of the DNA (ignoring the vast non-coding parts in the case of humans) then we study the **Exome.** Other studies are focused on the hereditable characteristics of controlling multiple genes expression simultaneously or **Epigenetics** and **Epigenome**[12]. Other tools are focusing in the genetic makeup of the group of bacteria and other organisms (not single organism or pathogen) in different parts of our bodies of environment and thus called **Microbiome**. Other studies focus on the cumulative effects of environmental events to which an individual is exposed to and thus called **Exposome**.

Tools For Studying Genetics

Studying the genes produce a huge amount of data that needs to be looked at[13], (dealing with information is called **bioinformatics**), and best use of this data depend on applying Artificial Intelligence and Machine Learning methods to find the proper associations between the phenotypes and genotypes.

Figure 2 summarizes the available tools to study the different aspects of genetics. Similar to the increase in the power of computers in doing calculations and storing data, the power of the new tools (Sequencers) in reading the genetic data is also increasing exponentially. For DNA Sequencing, the **1st Generation** method (**Sagner's**) was slow reading of single nucleotides of short DNA segments and was labor intensive[14]. It was used for the Human Genome Project that required the collaboration of 20 institutions and laboratories from at least 6 countries worldwide between 1990 till 2003 to finish reading the whole genome of a human. Newer generations of DNA like the second[15], third[16] and fourth generation sequencers (**2nd, 3rd and 4th Generation Sequencers**) are much faster, reading longer segments of DNA automatically at lower prices for doing it. Other types of sequencers are capable of reading the total epigenetic characteristics[17] (**Epigenetic Sequencing**)[18] for the cells or the total DNA in a sample originating from different sources (**Metagenetic genomic Sequencing**)[19]. In clinical cases nowadays, it is possible to request doing for an individual patient to do sequencing of the whole genome for his cells (**Whole Genome Sequencing**)[20], or request a whole exome sequencing for a specific condition (**Whole Exome Sequencing**), concentrating only on the coding DNA which is about 1-2% of the whole DNA. Other studying method can do a **Targeted Gene Sequencing** for a specific disease, while others look into **Whole Genome Association Study (WGAS)**[10] when the exact or suspected gene or genes are not known.

The second group of sequencers analyzes the RNA (**RNA Sequencers**) found in a cell, total (Ribosomal rRNA, Transfer RNA tRNA and Messenger mRNA) or only the mRNA. This reflects the second step after transcription of the DNA for the needed proteins for that cell. Structure of the proteins is also a very important biochemical study of all of its levels Primary to Quaternary, but is usually not a part of the study of genetics. Most amino acids are coded by any triplet combinations of nucleotides, with only ATG sequence which codes for Methionine amino acid and the start codon of the transcription. From knowing the sequence of the amino acids of a protein there are multiple possible genetic DNA and RNA sequences and a single one. **Reverse Engineering**[21] has multiple tools to know possible DNA sequences from the know protein structure.

Genetic Manipulation Mechanisms and Tools:

The use of genetic manipulation tools is very widespread in medicine of humans, animals, agriculture, industry, evolutionary biology, forensics and research, and **Figure 3** summarizes the different techniques that involve it. Especially for bacteria classical **Traditional Genetic Engineering** and **Recombinant DNA Technologies**[9] are used as in making for example human Insulin proteins or monoclonal antibodies in bacterial cultures by the insertion of the human needed gene. Many research tools involve **Inbred Strains of Mice**[22] made (at least 20 generations) by repeated mating of siblings of mice that all of the strain individuals becomes homozygous to all loci of all genes and identical twins to each other, except for the male / female difference between the sex chromosomes. They are weaker and susceptible to the recessive traits than the wild type mice, but in the experiments for example on drugs, the effects will only be due to the factor

changed by the experiment design. Furthermore, other tools are capable of making a change in a strain of mice for a specific allele or gene from a different strain making a **Transgenic Mouse Strain**[22]. Making transgenic strains involves isolating the fertilized egg from a pregnant mouse, injecting a small piece of DNA into it much similar to the **In Vitro Fertilization with Intra Cytoplasmic Sperm Injection** used in infertility treatment.

There are many techniques that will do **Gene Editing**[23], most famous are **CRISPER Cas9** (Clustered Regularly Interspaced Short Palindromic Repeats)[24], **TALEN**[25] **or Zinc Finger** that allows researchers to choose the gene of interest then make a specific change at a single nucleotide from a diseased to a normal one. This might be done in a bacterium, plant, animal or human cells both somatic or reproductive. For example, we might take the bone marrow stem cells of patient with **Sickle Cell Anemia** then make the needed change in the Hemoglobin Beta chain gene, and after editing the gene transplant it back into the patient. This technology is also considered **Gene Therapy**[26] for the genes in the **Germline DNA** (Total DNA found in the fertilized Egg from the start)[27] or **Somatic DNA** (DNA in a body cell which might different from germline DNA by the process of Somatic Mutations which can occur in the cells of specific tissue like the B Cells for the DNA of the Immunoglobulin Genes segment).

Other advances of Gene Manipulation include **Synthetic Biology**[28] (by **Artificial Gene Synthesis**[29] **and Synthetic genome**), making **Epigenetic Modifications** and **Directed Evolution**[30] (via **Viral Vector Delivery, Primary Editing and Base Editing**). A famous gene manipulation technique is **Cloning**[31] with Dolly the Sheep in 1996. Cloning is the process of producing individual organisms with identical genomes, either by natural or artificial means. In nature, some organisms produce clones through asexual reproduction; this reproduction of an organism by itself without a mate is known as **Parthenogenesis**[32]. This cloning can be Therapeutic or Reproductive. Other techniques target the RNA part like **Gene Silencing and Interference by RNA interference and Autosome RNA**[33].

Ethical, Legal Aspects, Islamic Perspective

As expected, the issue of Genetic Manipulation, Gene Editing and Cloning are emotionally charged and raise many questions beside the scientific nature of the Ethical and Legal opinion about them[34]. The **World Health Organization** many times convened experts' workshops for discussion about these issues including openness, transparency, honesty and accountability in decision making and responsible regulatory stewardship of Science and Research Recourses globally[35]. Questions about Inclusiveness, Caution, Fairness, Social Justice, Non-Discrimination, Equal Moral Worth, Respect to Persons, Solidarity and Global Health Justice have to be raised and answered. The issues about genetic manipulations have to be dealt with under jurisdiction of each involved person's or doctor/research's national, institutional and personal system of Declarations, Laws, Regulation, Bylaws and personal beliefs. In 2021 Position statement of the WHO Expert Advisory Committee on Developing Global Standards for Governance and Oversight of Human Genome Editing. Human Genome Editing: A Framework for Governance, of the study of the governing Laws in member countries, almost half of countries had no existing regulations and the 2 to 1 permitted use of and research on gene editing, and very high percentage had written Laws forbidding the use of gene editing for reproductive purposes[36]. The differences in the regulations will encourage Medical Travel to other countries that have preferred opinion or observation of Intellectual Properties Laws of patents for the procedures. **Figure 4** summarizes the recommendation of the expert panel. This richness on the regulations and speed of the scientific progress make it necessary to update the search for them and the active participation of the scientists who engage in the uses in explaining the steps to the other regulatory bodies in conferences, workshops or parliamentary sessions.

Genetic engineering, a rapidly advancing area in biotechnology and medicine, raises complex ethical and religious questions. Muslim scholars, national and international Fatwa Councils have addressed the issues related to genetic engineering and it's utilization in research and clinical settings, by

drawing on the principles of Shari'ah (Islamic law) and the *Maqasid al-Shari'ah* (objectives of Islamic law).

The following is an overview of how Islamic scholarship views gene engineering and therapy.

1. General Islamic Perspective on Medical Treatment

Islam encourages the use of medical treatment to preserve life and health. The Prophet Muhammad (PBUH) said:

"Seek treatment, for Allah has not made a disease without appointing a remedy for it…" (Hadith: Abu Dawood)

Based on this, new medical technologies, including gene therapy, are generally permissible if they aim to treat or prevent disease.

2. Distinction Between Therapy and Enhancement

Islamic scholars often differentiate between:

- Therapeutic gene therapy (to treat genetic disorders like sickle cell anemia or cystic fibrosis) which are permissible, as it serves the objective of preserving life and alleviating suffering.
- Enhancement gene therapy (e.g., altering height, intelligence, or physical traits for non-medical reasons) is generally discouraged or prohibited, as it may be seen as unnecessary tampering with the natural creation (*fitrah*), potentially violating the Qur'anic verse:

"…and indeed I [Satan] will order them to change the creation of Allah…" (Surah An-Nisa 4:119)

3. Principles derived from Islamic Jurisprudence

Islamic scholars and bioethicists use several principles to evaluate gene therapy:

- Darar (Harm): Avoiding harm is a key principle. If gene therapy prevents significant harm or disease, it is more likely to be permitted.
- Maslahah (Public interest): Assessing the benefits to society and individuals. If gene therapy serves the public good, it may be encouraged.
- Yaqin (Certainty) vs. Shakk (Doubt): Prioritizing certainty in outcomes to avoid potential harms. If the outcomes of gene therapy are uncertain or potentially harmful, scholars may adopt a more cautious stance.
- Istihsan (Juristic preference): In new areas like biotechnology, scholars may prefer rulings that align with broader *Shariah* goals, allowing flexibility in rulings to achieve justice and public welfare.

4. Germline vs. Somatic Gene Therapy

- Somatic gene therapy which targets non-reproductive cells is often viewed as more acceptable since it affects only the treated individual.
- Germline gene therapy (alters DNA in a way that passes to future generations) is more controversial, as it may have long-term effects on descendants and raises ethical questions about altering human lineage (*nasab*).

5. Conditions for Permissibility

For gene therapy to be permissible in Islam, the following conditions should be met:

- Therapeutic Intent: The primary goal must be to treat or prevent disease.
- Safety and Efficacy: The therapy should be proven safe and effective through rigorous testing.
- Ethical Compliance: Procedures must not involve prohibited substances or practices.
- Informed Consent: Patients should be fully informed and consent to the therapy.
- Regulatory Oversight: Appropriate bodies should monitor and regulate the application of gene therapy to prevent misuse.

6. Scholarly Bodies and Fatwas

Islamic scholarship has engaged with the ethical and legal dimensions of gene therapy, offering nuanced perspectives that balance medical innovation with religious principles.

Several Islamic organizations have issued guidance. The International Islamic *Fiqh* Academy (IIFA), affiliated with the Organization of Islamic Cooperation (OIC), addressed gene therapy in its Resolution No. 235 (6/24) on the Human Genome and Future Biomedical Applications. The resolution permits gene therapy under specific conditions[37]:

- Medical Purpose: The therapy must aim to prevent or treat genetic diseases.
- Safety and Efficacy: Procedures should be accredited by relevant medical authorities to ensure safety and effectiveness.
- Ethical Compliance: Research and applications must adhere to *Shari'ah* norms, safeguarding human dignity and preventing misuse.
- Prohibition of Enhancement: Using gene therapy for non-medical enhancements, such as aesthetic improvements, is strictly forbidden.

Majma' al-Fiqh al-Islami (Islamic *Fiqh* Council) has deliberated on gene therapy, particularly distinguishing between somatic and germline interventions[38]:

- Somatic Gene Therapy: Generally deemed permissible, as it affects only the individual and can treat specific diseases.
- Germline Gene Therapy: More contentious due to heritable changes. Permissibility hinges on ensuring no harm to future generations and adherence to ethical guidelines.

Al-Azhar University, a leading Sunni Islamic institution, has actively contributed to bioethical discussions. It emphasizes that medical treatments, including gene therapy, are permissible in Islam when they serve to alleviate suffering and do not contravene *Shari'ah* principles. Al-Azhar's scholars advocate for:

- Therapeutic Use: Permitting gene therapy aimed at curing or preventing diseases.
- Ethical Oversight: Ensuring that such therapies do not involve prohibited materials or practices.
- Public Interest: Considering the broader societal benefits and potential risks associated with gene therapy.

Conclusion

The possible scenarios for genetic manipulations are very varied and the answers have to individualized. The most frequent opinions of Islamic Scholars agree to the permission of the genetic manipulation for disease treatment and prevention and in cases of necessities. While for changing God's creation, cosmetic improvement, cloning or reproductive gene editing are mostly forbidden.

(تغيير خلق الله أو التغيير التجميلي و الإستنساخ)

And Allah Most Knowing (و الله أعلم)

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Figure 1 Summary of Genetics Biochemical Principles

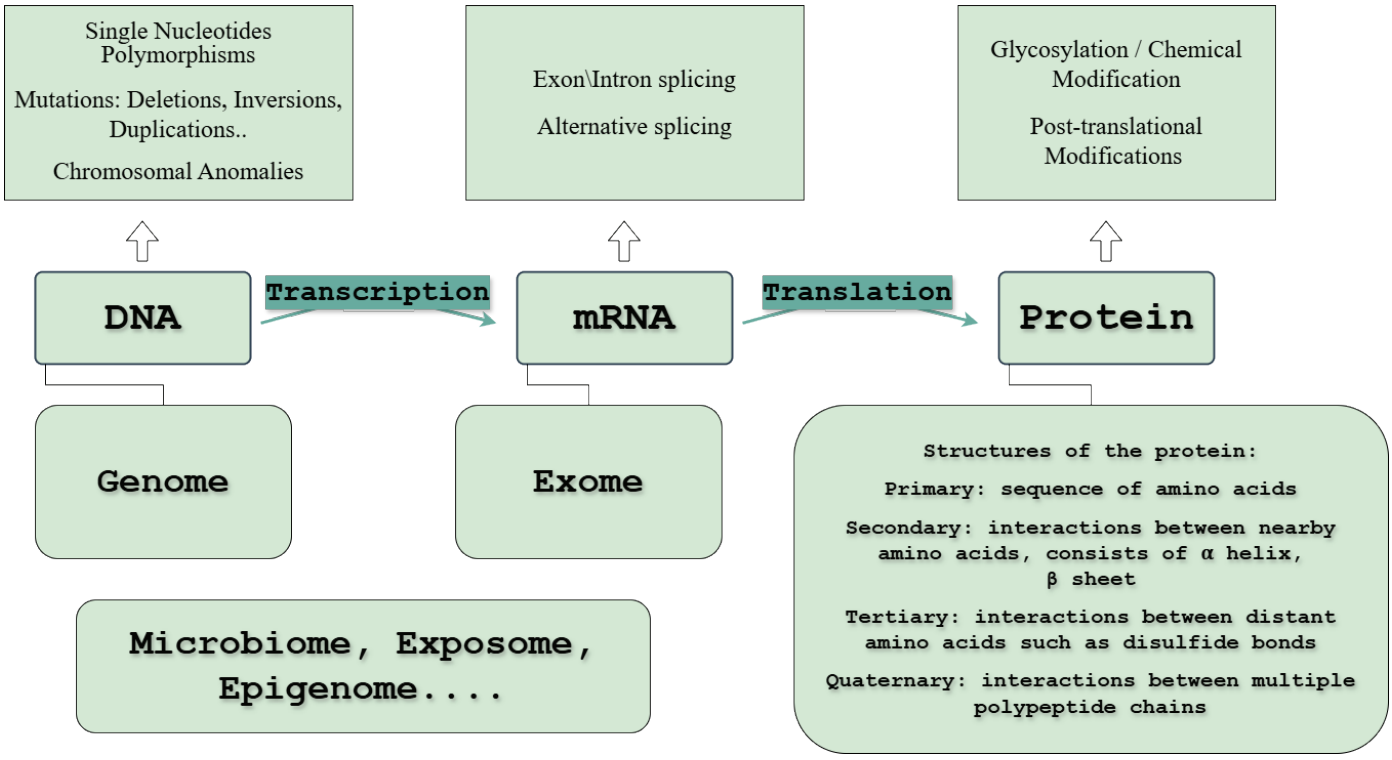

Figure 2 Tools in Studying Genetics

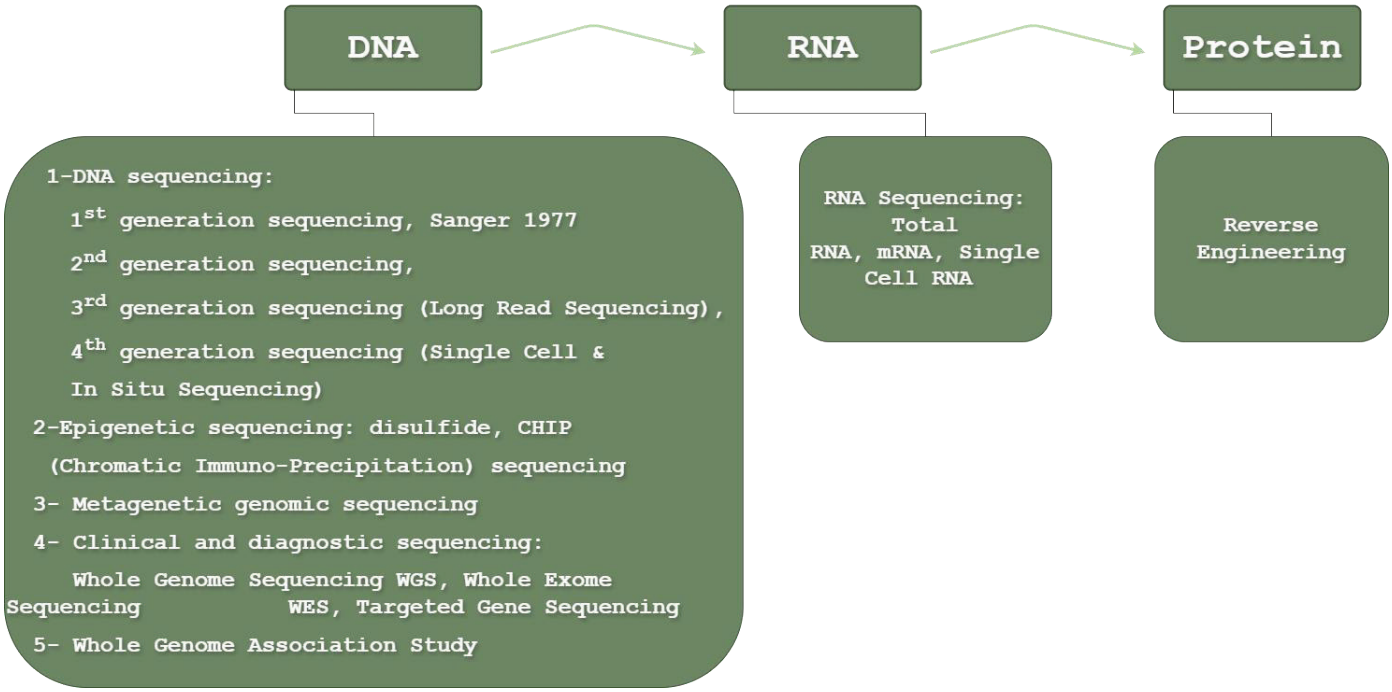

Figure 3 Tools in Genic Manipulations and Editing

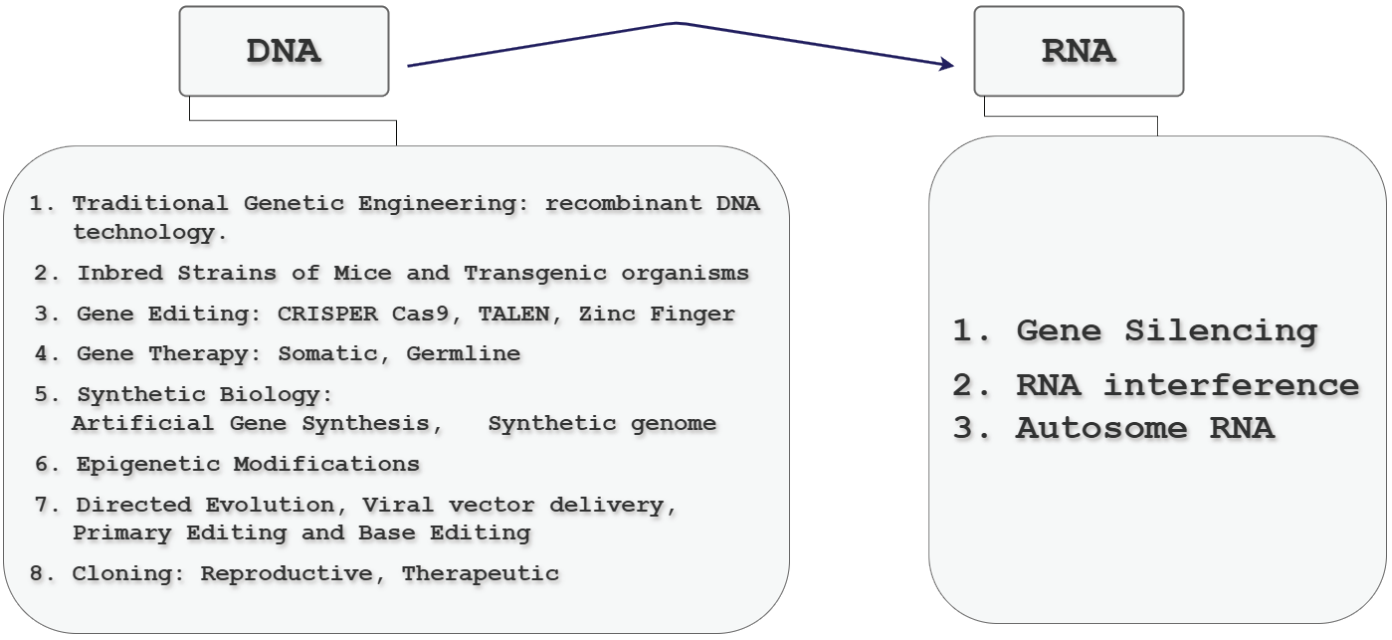

Figure 4 WHO Experts' Panel Recommendations

Box 1.
Recommendations of the Committee on the governance and oversight of human genome editing

1. Leadership by the WHO and its Director-General
2. International collaboration for effective governance and oversight
3. Human genome editing registries
4. International research and medical travel
5. Illegal, unregistered, unethical or unsafe research and other activities
6. Intellectual property
7. Education, engagement and empowerment
8. Ethical values and principles for use by WHO
9. Review of the recommendations

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GENETIC MANIPULATION AND ISLAMIC BIOETHICAL PARADIGMS

*Dito Anurogo**, Ihsan Jaya***

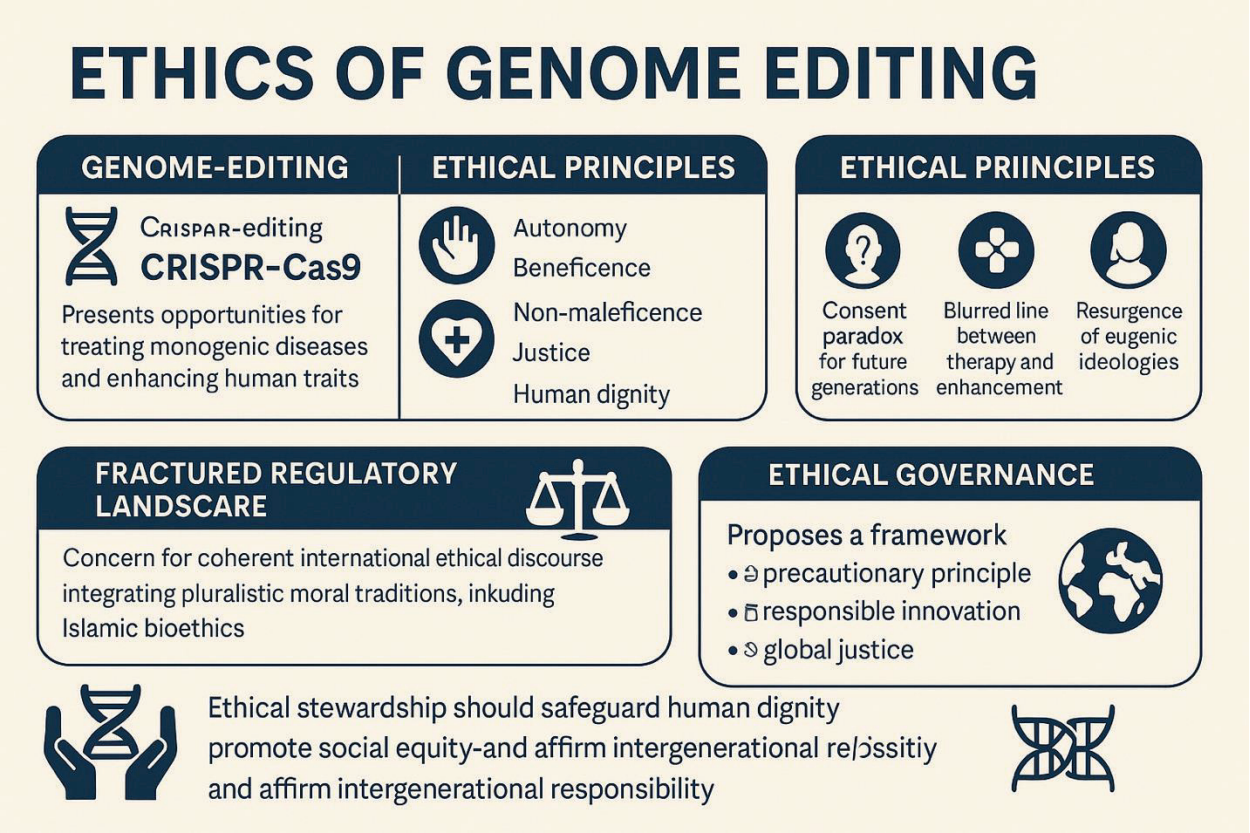
Abstract

The advent of genome-editing technologies, particularly CRISPR-Cas9, has profoundly altered the biomedical landscape, presenting unprecedented opportunities for the treatment of monogenic diseases and the potential enhancement of human traits. Nevertheless, these transformative capabilities simultaneously evoke complex bioethical dilemmas, particularly in the context of heritable germline modifications. This paper critically examines the core ethical principles—autonomy, beneficence, non-maleficence, justice, and human dignity—within the framework of genetic manipulation. It interrogates the profound challenges posed by the consent paradox for future generations, the blurred line between therapeutic interventions and enhancement, the resurgence of eugenic ideologies, and the unpredictability of long-term genetic outcomes. Furthermore, the paper underscores the fragmented and inconsistent international regulatory landscape, advocating for a globally coherent ethical discourse that integrates pluralistic moral traditions, especially with reference to the principles of Islamic bioethics. In response to these multifaceted challenges, the study proposes an ethical governance model anchored in the precautionary principle, responsible innovation, and global justice. Such a framework necessitates rigorous risk-benefit analyses, anticipatory public engagement, equitable access to genetic therapies, and dynamic adaptability to emerging scientific developments. This analysis ultimately argues that the ethical management of genetic technologies must go beyond technical regulation and embody a normative vision that protects the dignity and respect for the human person and humanity, promotes social equity, and affirms intergenerational moral responsibility; taking into account ongoing ethical, legal, and social implications. Through this lens, genetic innovation can be harnessed not merely for technical advancement but for the flourishing of humanity across present and future generations.

Keywords: Genetic Manipulation, Bioethics, Germline Editing, Responsible Innovation, Global Health Justice.

*Dito Anurogo
Faculty of Medicine and Health Sciences,
Universitas Muhammadiyah Makassar, Indonesia

**Ihsan Jaya
Faculty of Medicine and Health Sciences,
Universitas Muhammadiyah Makassar, Indonesia
Email corresponding:
ihsanjaya@med.unismuh.ac.id



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Introduction

The advent of genome-editing technologies, most notably the CRISPR-Cas9 system, has inaugurated a new era of precision genetic manipulation, enabling interventions at a scale and accuracy previously unimaginable. These technologies have catalyzed transformative possibilities in regenerative medicine, offering potential cures for monogenic diseases, and opening avenues for the enhancement of human traits[1]. However, as the technical barriers to genome editing diminish, the ethical barriers loom ever larger. Fundamental principles such as autonomy, justice, beneficence, and the respect for human dignity face unprecedented challenges, particularly in the context of germline modifications that may irreversibly alter the human gene pool[2]. Furthermore, the international regulatory environment remains fragmented and inconsistent, reflecting divergent cultural, legal, and philosophical understandings of human identity and integrity[3]. Against this backdrop, a rigorous and globally attuned bioethical discourse is urgently needed to navigate the moral terrain of genetic manipulation, ensuring that scientific progress does not eclipse essential humanistic values.

The emergence of genome-editing technologies, most notably the CRISPR-Cas9 system, has fundamentally transformed the landscape of biomedical science. For the first time, human beings possess the ability to edit the genetic blueprint with unprecedented precision, efficiency, and accessibility.

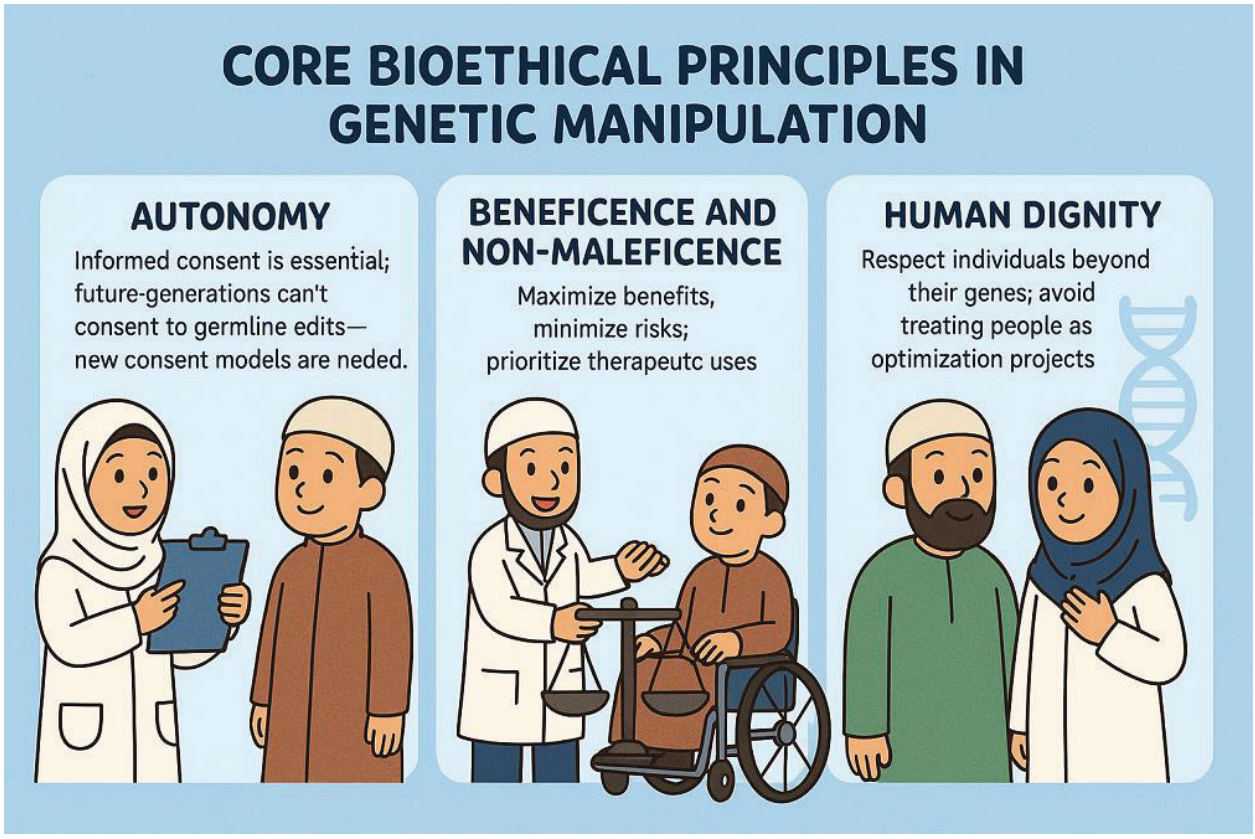
Originally derived from a bacterial immune mechanism, the CRISPR-Cas9 system has been rapidly adapted for therapeutic interventions, regenerative medicine, and the potential correction of heritable genetic disorders[4]. Clinical applications ranging from hematopoietic stem cell modification to the prospective prevention of monogenic diseases exemplify the translational promise of these innovations[5].

However, technological prowess has inevitably outpaced ethical reflection. Genetic manipulation, particularly of the human germline, presents a profound moral dilemma. Modifications made at this level not only affect the treated individual but also propagate across future generations, raising existential questions about identity, consent, and the very nature of humanity[6]. While proponents argue that germline editing offers a preventive strategy against devastating genetic disorders, critics warn of a slippery slope toward eugenic enhancement and the commodification of human life[7].

Furthermore, the regulatory environment governing genetic manipulation remains highly heterogeneous. While certain jurisdictions adopt a precautionary stance, effectively banning germline interventions, others entertain regulatory frameworks that could enable tightly controlled clinical applications[8]. This fragmentation underscores the urgent need for a globally coherent bioethical discourse, one that transcends national boundaries and recognizes the universal stakes involved in editing the human genome[9].

Importantly, ethical frameworks must not operate in a cultural vacuum. Perspectives informed by diverse moral traditions, such as Islamic bioethics, contribute essential insights into the discourse on genetic manipulation, emphasizing principles of human dignity, inviolability, and collective welfare[10]. The integration of such pluralistic ethical viewpoints is indispensable to constructing a governance model that is not only scientifically robust but also socially legitimate and morally defensible.

Against this complex backdrop, this paper aims to systematically explore the bioethical dimensions of genetic manipulation, with particular focus on germline editing. It will interrogate core ethical principles, delineate key controversies, analyze the global regulatory landscape, and ultimately propose an inclusive bioethical framework capable of guiding responsible innovation in genetic technologies. Through this analysis, the paper seeks to balance the aspirations of scientific progress with the imperatives of human rights, justice, and the preservation of human dignity.



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Core Bioethical Principles in Genetic Manipulation

The ethical discourse surrounding genetic manipulation is anchored in the foundational principles of biomedical ethics: autonomy, beneficence (*masālih*), non-maleficence (*la darar*), and justice (*adl*). These principles, although articulated in the context of traditional clinical medicine, acquire new complexities when applied to the domain of genome editing technologies, especially those capable of inducing heritable changes.

Autonomy: Informed Consent and Genetic Intervention

Respect for patient autonomy[11] mandates that individuals must be empowered to make informed decisions regarding interventions that affect their bodies and genetic constitution. However, the principle of autonomy encounters a profound complication in the realm of germline editing: the subjects most affected—future generations—cannot provide consent. This ethical asymmetry raises questions about moral authority and intergenerational justice[12]. Moreover, even in somatic applications, the complexity of gene-editing technologies challenges the adequacy of traditional informed consent processes, necessitating novel models of dynamic, ongoing consent that adapt to emerging risks and outcomes[13].

Beneficence and Non-Maleficence: Balancing Risks and Benefits

The dual imperatives to promote good (beneficence, *maslahah*) and to avoid harm (non-maleficence, *al-darar yūzal)* are central to the ethical appraisal of genetic interventions. Although genome editing holds immense promise for the prevention and cure of genetic diseases, it also carries substantial risks, including off-target effects, mosaicism, and unforeseen long-term consequences[14]. The potential for irreversible and heritable damage necessitates a highly precautionary approach. Ethical prudence demands that genome-editing interventions be limited initially to well-justified therapeutic goals, with rigorous preclinical validation and post-intervention surveillance to minimize harm. The rule of Islamic jurisprudence states that "avoiding damage takes precedence over efforts to gain benefits."

Justice: Fair Access and Social Equity

The principle of justice requires that the benefits and burdens of genetic technologies be distributed equitably across society. Without appropriate regulation, genome editing risks becoming a technology accessible only to the affluent, thereby exacerbating existing health disparities[15]. Furthermore, unregulated enhancement applications could lead to new forms of genetic stratification, fundamentally altering social dynamics and notions of fairness. An ethically defensible deployment of genetic manipulation must, therefore, integrate considerations of global distributive justice, ensuring that marginalized populations are neither excluded from potential benefits nor subjected to disproportionate risks[16]. "Indeed, Allah orders justice and good conduct and giving to relatives and forbids immorality and bad conduct and oppression. He admonishes you that perhaps you will be reminded[17]."

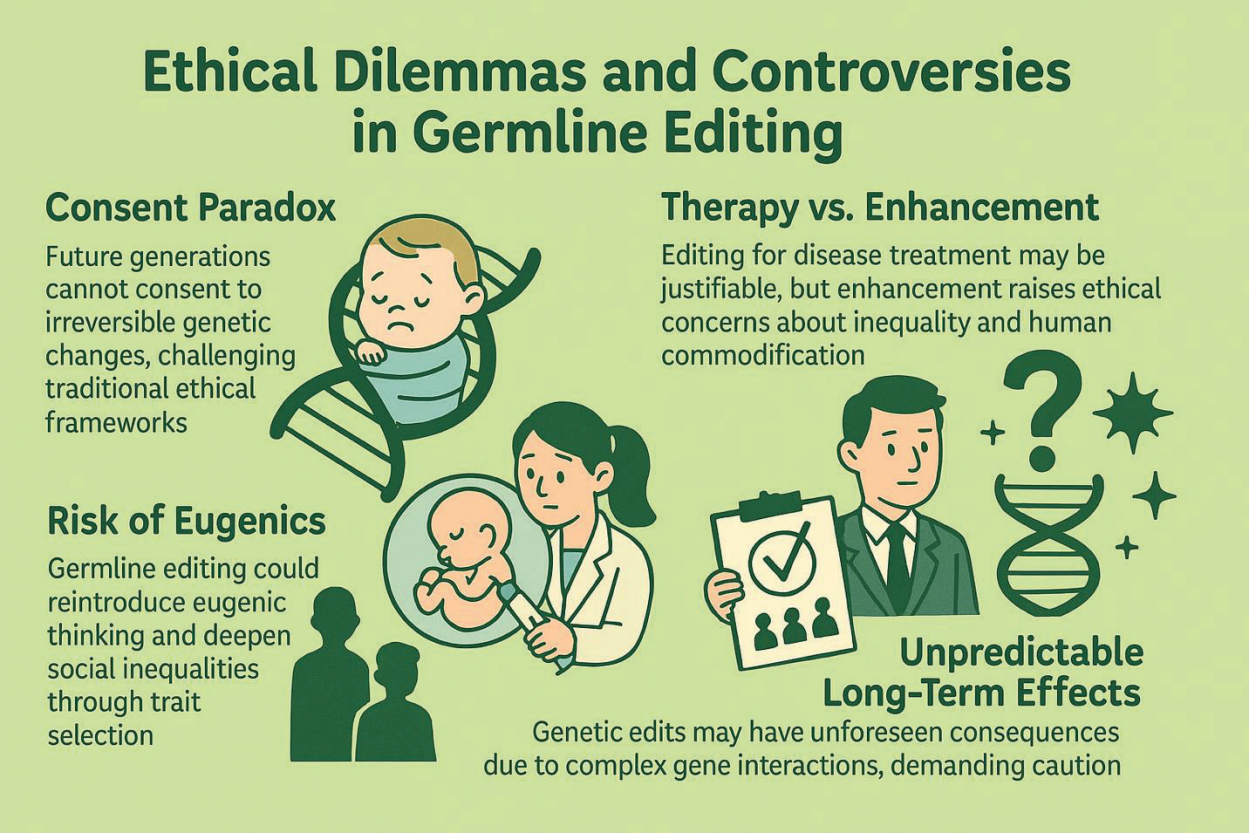
Respect for Human Honor and Dignity: Beyond Instrumentalization

At the heart of bioethical inquiry lies the inviolable dignity of the human person, a concept that resists any reduction of human beings to mere objects of technical optimization. Genetic manipulation, particularly when aimed at enhancement rather than therapy, risks instrumentalizing human life by treating genetic endowment as a modifiable commodity[18]. Ethical frameworks must vigilantly guard against such instrumentalization, affirming that human worth transcends genetic characteristics and is rooted in intrinsic personhood. The statement of Allah "And We have certainly honored the Children of Adam."[19] The Prophet (peace be upon him) delivered a sermon in his last days, during the farewell pilgrimage, where Muslims met in their greatest gathering, and in which he said, "Your blood, property and honor are sacred to one another, like the sanctity of this day in this month in this town. Let those present to inform those who are absent".[20]

Ethical Dilemmas and Controversies in Germline Editing

The editing of human germline cells introduces a dimension of ethical complexity unparalleled in biomedical science. Unlike somatic interventions, which affect only the treated individual, germline modifications

propagate across generations, rendering any error or unintended consequence a permanent feature of the human lineage[21]. The ethical debates surrounding germline editing are therefore not merely theoretical but existential, implicating the very foundations of human identity, responsibility, and justice[22].



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The Consent Paradox: Future Generations Without a Voice

Perhaps the most acute ethical dilemma concerns the absence of consent from those most profoundly impacted by germline modifications: future individuals. Padela has concluded three ethico-ontological perspectives on humans from his analysis of the genetic literature, namely: (i) humans as a source of information about the past, present, and future, (ii) humans as reproductive organisms, and (iii) humans as developing entities[23]. Traditional models of informed consent collapse in this context, raising critical questions about moral authority and paternalism[24]. Some scholars argue that the moral justification for germline editing must rest upon stringent criteria of necessity, proportionality, and unequivocal therapeutic benefit. Yet even under such conditions, the irreversibility of genetic modifications calls into question whether any contemporary generation can ethically

assume the right to dictate the biological inheritance of future ones[25].

Therapeutic Applications Versus Human Enhancement

Another fundamental controversy is the boundary between therapeutic intervention and human enhancement. While editing to correct severe monogenic diseases might be ethically defensible, attempts to enhance cognitive capacities, physical traits, or psychological resilience veer into ethically hazardous territory[26]. Enhancement initiatives risk commodifying human attributes, fostering new forms of inequality, and shifting societal values toward a technocratic ideal of perfection. The absence of a clear normative consensus on what constitutes 'legitimate' enhancement versus 'illegitimate' modification reflects deep societal divisions about the aims and limits of biotechnological progress[27].

Eugenics and the Re-Emergence of Genetic Stratification

The specter of eugenics looms large over germline editing discourse. Although contemporary advocates frame their aspirations in terms of health and well-being, the potential for implicit or explicit selection of traits cannot be ignored. Left unregulated, germline editing could catalyze a new era of genetic stratification, wherein socioeconomically privileged groups engineer advantages for their offspring, entrenching cycles of inequality[28]. This raises profound questions about fairness, human diversity, and the acceptability of reshaping future generations according to prevailing social preferences.

The Unpredictability of Long-Term Outcomes

Finally, the inherent unpredictability of long-term outcomes in germline editing constitutes a significant ethical challenge. Despite remarkable advances in minimizing off-target effects[29], the complexity of genetic networks and epigenetic regulation means that the full consequences of even a single genetic modification cannot be reliably foreseen. The possibility of introducing novel pathologies, disrupting gene-environment interactions, or producing unforeseen evolutionary consequences demands an ethical posture of humility and restraint. Ethical stewardship thus necessitates an unwavering commitment to the precautionary principle, emphasizing careful deliberation over premature application.

Toward an Ethical Model for Genetic Manipulation

Given the extraordinary power and far-reaching consequences of genetic manipulation technologies, a coherent and ethically robust governance model is imperative. Existing ethical paradigms, though valuable, require thoughtful recalibration to address the novel challenges posed by interventions at the genomic level. A future-oriented bioethical framework must integrate the precautionary principle, the concept of responsible innovation, and the imperatives of global equity, while remaining dynamically responsive to emerging scientific and societal developments.

Anchoring Innovation Within the Precautionary Principle

The precautionary principle, long established in bioethics and environmental ethics, mandates that the absence of full scientific certainty must not be used as a justification for proceeding with interventions that may cause irreversible harm. In the context of germline editing, where long-term consequences are inherently uncertain, this principle should serve as a foundational ethical guide[30]. Ethical models must prioritize rigorous preclinical research, transparent risk-benefit assessments, and iterative public deliberation before any clinical application is considered. Ibn al-Qayyim regarded the rule of blocking the means to harm or evil (*sadd al-dharâ'i*) one of the greatest principles of Sharia[31].

Embedding Responsible Innovation

Responsible innovation extends beyond technical safety to encompass anticipatory governance, inclusive deliberation, and reflexivity on broader societal impacts. In the case of genetic manipulation, this requires that scientists, ethicists, policymakers, and lay public collaboratively shape the trajectories of technological development[32]. Ethical oversight mechanisms must therefore institutionalize stakeholder engagement at every stage—from early research to clinical translation—to ensure that innovation reflects collective values rather than narrow technocratic interests[33].

Advancing Global Justice and Access Equity

Genetic manipulation technologies must not become instruments that exacerbate global inequalities. Ethical governance must actively promote equitable access to genetic therapies, prioritize interventions for neglected diseases, and prevent the monopolization of genetic enhancements by privileged elites[34]. International coordination through bodies such as UNESCO, WHO, and national bioethics commissions is crucial to harmonize standards, share knowledge, and collectively monitor ethical compliance across jurisdictions[35].

Cultivating Dynamic and Adaptive Ethical Frameworks

Ethical models must avoid rigid codifications that fail to accommodate the fluidity of scientific knowledge and social values. As genetic manipulation technologies evolve—potentially incorporating artificial intelligence, synthetic biology, and epigenetic interventions—ethical governance must remain dynamic, iterative, and sensitive to context-specific challenges[36]. Bioethics must thus be envisioned not as a static set of prohibitions, but as a living, dialogical practice, capable of critical self-examination and responsive adaptation.

Islamic Medical Jurisprudence

Before coming to the conclusion, the authors quote the discussion section on “Genetic Engineering” from “Islamic Medical Jurisprudence” published by the Saudi Society for the Study of Medical Jurisprudence.

“[…] With regard to an Islamic perspective on gene therapy, we observe that there are several general rules and principles concerning medical treatment in general that are relevant: (i) The general objectives of the Sharia, which aim to take care of the necessities, needs, and luxuries of human beings, to appraise benefits and harms, and to

observe the maxims that are relevant to this, such as, "Avoiding harm takes precedence over bringing about benefit," "A lesser harm is endured for the sake of repelling a greater harm," "Harm must be eliminated," "Harm should not be eliminated by a comparable harm," and "Necessity renders prohibited matters permissible; (ii) Taking means and likely causes into consideration. A prohibited means is prohibited, even if used to accomplish a noble goal. Thus, it is not permissible to use any Islamically prohibited technique for gene therapy, except in case of such necessity that renders prohibited matters permissible. Ibn al- Qayyim regarded the rule of '*sadd al-dharâ'i*' (blocking the means to harm or evil) one of the greatest principles of Sharia." [37]

Conclusion

The unprecedented capacities introduced by genetic manipulation technologies, particularly CRISPR-Cas9, compel a profound re-examination of foundational bioethical principles, as the prospects of eradicating genetic diseases and enhancing human traits are inextricably entangled with existential risks to autonomy, justice, and human dignity. This analysis has illuminated the ethical fault lines surrounding germline interventions—consent for future generations, the blurred thresholds between therapy and enhancement, the resurgence of eugenic paradigms, and the unpredictability of long-term consequences—underscoring the imperative for cautious, globally harmonized, and anticipatory governance. To ethically steward such transformative power, innovation must be anchored within the precautionary principle, driven by responsible innovation practices, committed to advancing global equity, and embedded within an adaptable ethical architecture responsive to evolving scientific and societal landscapes. Ultimately, the challenge is not merely technical regulation, but the cultivation of a normative vision wherein scientific progress serves human flourishing, safeguards the dignity of all persons, and affirms a shared moral responsibility toward future generations.

Conflict of interest: None.

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under the Sharia. It is also obligatory to observe the strict confidentiality regarding the results and to respect the provisions of the noble Sharia which calls for respecting the rights and dignity of the human being.

ETHICAL DILEMMAS AND MORAL INJURIES IN THE MEDICAL PROFESSION

*Mohammad Iqbal Khan**

Abstract

Ethical problems routinely arise during the delivery of healthcare to the masses and times of dilemma do occur such that practitioners and patients are at cross-roads where choice and decision-making become difficult in terms of ethics, moral and spiritual values of the healthcare worker and patient.

This paper attempts a synopsis of the basic principles of medical ethics, identifies some ethical dilemmas that doctors often encounter, and discusses some strategies to address them as well as emphasize the need for enhanced ethics education both for physicians and patients.

Healthcare professionals frequently meet ethical dilemmas, at different levels finding them at a crossroads to balance between patient welfare and professional integrity, resource allocation, and systemic constraints. It is difficult to enumerate reasons for dilemmas but grossly it could arise when two or more ethical principles, beliefs or values are at conflict with each other's. The resolution of an ethical dilemma mandates a multi-step process including identification of the ethical issue, gathering information, analyzing choices, application of ethical framework revoking concerned principles, decision making, implementation of decisions, and evaluation of the impacts of dilemma and remedial measures. Islamic teachings provide robust guidelines on the resolution of ethical dilemmas, particularly in the healthcare management system.

An injury to an individual's moral conscience, values, beliefs, and ethical standards results from an act of perceived moral transgression that one receives during health care delivery process. Moral injury precedes moral distress and if not addressed proceeds to moral injury and if not timely taken care of will progress to further chronic conditions like burnout with all its consequences thereafter. Various triggers have been identified causing distress and its further progression. At all levels certain preventive measures are suggested with timely intervention and progression of moral insults. Resolving ethical concerns through education, training, consultation, and collaboration of an individual physician with peers and society provides a better understanding of a given issue. **Spiritual guidelines** provide robust mechanisms to resolve ethical dilemmas, prevent distress and its consequences, and provide an ethical framework where the main emphasis is on "harm must be eliminated at all cost but not by means of another harm".

*Prof. Mohammad Iqbal Khan, MD; FRCS (Glasg); FRCS (Eng.); DVS (UK); MHPE (Neth); FCPS (Vas Surg)
Professor of Surgery - VICE-CHANCELLOR
Shifa Tameer e Millat University (STMU)
Consultant General & Vascular Surgeon - Shifa International Hospital, H-8/4 Islamabad Pakistan
E-mail: vc@stmu.edu.pk , mikhandr@gmail.com

Ethics education should begin from the impressionable age in homes, continue in medical schools, and after graduation to ensure that doctors develop good ethical practices and acquire the ability to effectively handle ethical dilemmas. Also, education of patients and sanction of unethical behaviour will reduce ethical dilemmas. Moral distress can stem from various situations, including witnessing or participating in actions that go against their moral compass, being unable to provide optimal care due to systemic issues, or feeling betrayed by the system's failure or inefficiency. It might end up with lasting psychological and moral disorders and if not, timely address may lead to disastrous consequences.

By following the teachings of the Quran, Sunnah, and *Shariah* principles related to medical practice particularly, to uphold honesty and integrity in all situations and times and deliver services without discrimination. In case of distress and moral injuries, Islam encourages seeking help, maintaining the sanctity of human life, prioritizing patient well-being, seeking knowledge and excellence in medical practice, and remaining at the cutting edge of knowledge and expertise in the respective field.

Keywords: Dilemma, Reasons for Dilemma, Ethical guidelines, Spiritual guidelines, Moral Distress, Injury, Burnout, Intervention, and Prevention.

Introduction:

The medical profession demands recent clinical knowledge, cutting-edge technical skills, and contextual application of knowledge and skills. However, holistic healthcare necessitates certain ingredients like ethical frameworks, moral considerations, and legal obligations, which have a profound impact on the practice and responsibilities of healthcare professionals. Ethical competencies augment all other competencies and find the best possible solution for the healthcare of the masses. Healthcare professionals acquire, develop, and promote ethical competence as a fundamental qualification and identify the ethical dimensions inherent in their decision-making[1]. Ethical competence not only encompasses the knowledge of ethical principles but also the ability to think critically, reflect on moral issues, and make sound ethical decisions focusing on the patient's interest first. Professional and ethical competencies augment the outcome of each other. A great emphasis is laid on acquiring professional competencies but very little on ethical competencies leaving a lacuna in the healthcare delivery system leading to the birth and growth of ethical dilemmas. Ethical Dilemma refers to a situation where professional conduct faces conflicting moral choices or decision-making making which may arise: a) when there is a conflict between different ethical principles or values, making it difficult to determine the right course of action, and b) when there is an ethical paradox and problem options, neither of which is acceptable from an ethical perspective. In other words, it arises when in the decision-making process between two possible but unacceptable options from an ethical perspective are to be chosen by the healthcare professional[2]. Or when the problem cannot be solved in a way that will satisfy everyone who is involved. The major reasons for ethical dilemmas could be conflicting values, norms, or interests. Other reasons may include when "the right thing to do, but institutional or other constraints make it difficult to pursue the right course of action. Examples of ethical dilemmas are: conflict between the practitioner-patient relationship (autonomy, beneficence, nonmaleficence, and justice),

Practitioner- Practitioner interface (confidentiality, privacy, and trust), or privacy and confidentiality (risk or danger versus confidentiality or breach of trust) or shared decision making (trust, truthfulness, communication, mutual respect). Ethical dilemmas may also arise while allocating scarce resources, which requires the understanding of needs, open communication, making informed decisions, or interference of seniors and administration. In many health conditions being faced by the individual like reproductive health may generate ethical dilemmas. While understanding the issues in an ethical context, using ethical principles like confidentiality, privacy, trust, and remaining truthful may end or resolve a dilemma. However, one should be ready to face another dilemma one after the other and will require help of the peers to mitigate or resolve it. A provider's personal moral and belief system may or may not be congruent with a profession's code of ethics. Sometimes a healthcare giver may need to serve in a dual role and seek a balance between conflicting agendas. In such cases, a healthcare provider can adopt different ethics theories (e.g., virtue ethics, rule-based ethics, situational ethics) to solve ethical dilemmas. It is possible that ethical and legal issues may or may not be in conflict. Ever growing complexities of the healthcare environment, certainly lead to ethical challenges. Every person may encounter an ethical dilemma in almost every aspect of his life, including personal, social, and professional spheres, and needs to understand the issue in its true context. One must consider, proposed considerations and try to outline expected outcomes based on the interpretation of the issue in its socio-spiritual context, carry out cross-examination of the findings, and critically analyze any action plan prior to execution[3].

While executing duties as a caregiver, the healthcare professionals frequently meet ethical dilemmas, such as balancing patient autonomy with medical advice and managing resource allocation in emergency and routine healthcare delivery. As care is being provided at different levels, setups, and situations such as public and private, sectors primary, secondary, and tertiary healthcare facilities dealing with various curative, preventive, rehabilitative, and promotive healthcare works. The caregiver is at a crossroads in balancing between patient welfare and professional integrity, resource allocation, and systemic constraints. Holistic consideration to meet these challenges demands context-specific strategies, strong ethical guidelines, and continuous reflection on a particular issue to avoid escalation of such issues aiming at avoidance of ethical dilemmas and their consequences.

Ethical dilemmas in medical practice arise when healthcare professionals are faced with difficult choices where different moral principles or values conflict. These dilemmas often involve balancing patient autonomy, beneficence (doing good), non-maleficence (avoiding harm), and justice (fair resource allocation). Ethical dilemmas usually result when the patient or caregiver does not agree with or fails to understand the medical care team's plan. Such dilemmas usually only develop when there are misunderstandings between the medical team and the patient or family. While defying consensus solutions, dilemmas also present conflicts of ethical responsibilities and might give the legal needs, a priority. The Professional, scientific, and ethical responsibilities may outweigh the desires of the legal system, and preclude their involvement in that aspect of a legal case. The law cannot determine what is ethical and what is not, it can determine what is

legal. Morality is governed by the ethical norms and principles[4].

Reasons for Ethical dilemmas:

It is difficult to enumerate the reasons for ethical dilemmas in healthcare, but why and how they arise can be figured out, while taking into consideration ethical principles. Grossly it is understood that an ethical dilemma can occur when two or more ethical principles or values are in conflict with each other or when the healthcare provider and his patient are not congruent due to personal, moral, or belief system divergence. In other words, a dilemma may stem from any number of conflicts between cultural beliefs, religious orientations, institutional principles, and personal views or beliefs. While taking into consideration factors leading to the birth of dilemma in healthcare four major factors can be encountered: cultural clash, competing interests, misleading incentives and divergence of religious beliefs. There are several types of dilemmas in healthcare but to summarize those, we can find 1. short-term versus long-term, 2. loyalty versus truth, 3. community versus individual, 4. mercy versus justice, 5. organization versus individual, 6. Personal moral versus professional obligations. The factors that influence the ethical decision-making process are: a) Contingent decision-making, b) Risky decision-making, c) Differences in clinical Judgment, d) Lack of coherence in team decision-making, e) Legal and ethical responsibility, f) Lack of clear criteria or guidelines[5].

Frequently encountered ethical issues causing ethical dilemmas in healthcare practice can be classified as:

Caregiver-patient relationship: Taking into consideration basic ethical principles like patient autonomy, non-maleficence, beneficence, and justice, one must also consider confidentiality, privacy, and trust related to healthcare practice at all times. Sound knowledge of ethical principles, institutional guidelines, and consecration of belief systems may be able to resolve ethical dilemmas arising in physician-patient interfaces[6].

Islamic teachings greatly emphasize correct relationships based on Allah's consciousness and great good, "Help you one another in Al-Birr and At-Taqwa (virtue, righteousness, and piety) and do not help one another in sin and transgression[7]". It is also stressed in Islam that relationship is totally based on doing good for each other and that applies in medical practice as well. For example, *"You [true believers in Islamic Monotheism, and real followers of the Prophet (Salla-Allaahu 'alayhi wa sallam) and his Sunnah (legal ways, etc.)] are the best of people ever raised for mankind, you enjoin Al-Ma'roof and forbid Al-Munkar, and you believe in Allah.[8]"* That was also stressed in other places in the Quran like 3:104 and others. The prophet (PBUH) said: "*He who calls to guidance, will earn a reward like the reward of those who accept his call, without decreasing their rewards. Whoever calls to a heresy, will carry a burden like the burden of those who accept his call, without decreasing their burdens[9].*" It is also emphasized in several other traditions of the Prophet (PBUH) e.g. "*A Muslim is a brother of another Muslim. So, he should neither oppress him nor hand him over to an oppressor. And whoever fulfills the needs of his brother, Allah will fulfill his needs[10].*" Medical practice is designed to remove harm and that is greatly accentuated in Islamic teaching e.g. "*Whoever brought his (Muslim) brother out of a discomfort (distress), Allah will bring him out of the discomfort (distress) of the Day of Resurrection[11].*" The relationship is based on trust whereas, a healthcare professional is not allowed to betray this

trust: *"He who is not trustworthy has no faith[12]"*. Breach of trust is not allowed in any case: *"There are three matters in which there is no excuse for anyone: treating parents well, whether they are Muslims or not; fulfilling promises, made to Muslims or non-Muslims; and fulfilling trusts, whether they belong to Muslims or non-Muslims[13]."*

Shared Decision Making: Taking the patient and family into confidence, effective and trustworthy counseling, developing mutual trust, respect for the patient's choice based on truthfulness, and sound communication between the two parties will diminish the chances of dilemma[14]. One must not forget about the beliefs and religious orientations of both the parties. Whenever, there is a tension between the patient's autonomy, beneficence, and confidentiality that may not be easily resolved. Always other family members of the patient and peers from the healthcare fraternity may be involved in shared and informed decision-making[15]. Decision-making must be understood in the light of Islamic teaching and lay down principles, like; Islam also suggests critical thinking and logical judgment before making a decision[16]. Hence, a cautious and meaningful consultation with the patient and family is required before making a decision. Islam provides a structured and balanced approach to decision-making, emphasizing planning, consultation, and placing our trust in Allah.

The prophet (PBUH) emphasized and practiced making shared decisions and " is related to the concept of shura in Islam, which is a system of consultation and deliberation, particularly in matters of decision-making. The Quran encourages this practice, e.g. *"And those who have responded to their lord and established prayer and whose affair is [determined by] consultation among themselves, and from what We have provided them, they spend[17]"*. Hadith also exemplifies the Prophet's (PBUH) practice of consulting his companions and valuing their opinions in the decision-making process. The decision-making process should be simply understood and respected; *"when you make a decision then put your trust in Allah certainly Allah loves those who put their trust in Him*[18]. "*One who is consulted is in a position of trust*.[19] In the case of healthcare all efforts should be made to make informed and shared decision-making in all aspects of healthcare. "And by the Mercy of Allah, you dealt with them gently. And had you been severe and harsh-hearted, they would have broken away from about; so, pass over (their faults), and ask (Allah's) Forgiveness for them; and consult them in the affairs. Then when you have taken a decision, put your trust in Allah, certainly, Allah loves those who put their trust (in Him)[20]". "Therefore, making a shared decision by involving the patient and knowledgeable peers is crucial in all aspects of patient care — as the Qur'an advises: *'Ask those who know if you do not know[21]'*.

Privacy and Confidentiality:

Privacy is a fundamental human right that underpins freedom of association, thought, and expression, as well as freedom from discrimination. Generally speaking, privacy includes the right: To be free from interference and intrusion, to associate freely with whom, you want, and to be able to control who can see or use information about patents and organizations. One must be aware of the essentials of privacy such as consent, confidentiality, counseling, correct results developing and maintaining connection. There should be no breach in keeping client information confidential and secure including medical records in all forms, particularly digital records[22].

In Islamic tradition, confidentiality and privacy are highly valued and considered sacred human rights. Islam emphasizes the importance of protecting personal information, keeping secrets, and avoiding spying on others. These principles are rooted in the Quran and the teachings of the Prophet Muhammad (PBUH).

Islam gives great importance to the fundamental human right to privacy. 'Do not spy on one another[23]*;* 'Do not enter any houses except your own homes unless you are sure of their occupants' consent'[24]

يَا أَيُّهَا الَّذِينَ آمَنُوا لَا تَدْخُلُوا بُيُوتًا غَيْرَ بُيُوتِكُمْ حَتَّىٰ تَسْتَأْنِسُوا ... .

And if you do not find anyone there, do not enter it until permission is given to you. (Quran, And if you are told 'return', so return that is purer for you; and Allah knows the things you do[25]*.*

"O you who have believed, let those whom your right hands possess and those who have not [yet] reached puberty among you ask permission of you [before entering] at three times: before the dawn prayer and when you put aside your clothing [for rest] at noon and after the night prayer. [These are] three times of privacy for you. There is no blame upon you nor upon them beyond these [periods], for they continually circulate among you - some of you, among others. Thus does Allah make clear to you the verses; and Allah is Knowing and Wise[26].

يَٰٓأَيُّهَا ٱلَّذِينَ ءَامَنُواْ لِيَسۡتَـٔۡذِنكُمُ ٱلَّذِينَ مَلَكَتۡ أَيۡمَٰنُكُمۡ وَٱلَّذِينَ لَمۡ يَبۡلُغُواْ ٱلۡحُلُمَ مِنكُمۡ ثَلَٰثَ مَرَّٰتٖۚ مِّن قَبۡلِ صَلَوٰةِ ٱلۡفَجۡرِ وَحِينَ تَضَعُونَ ثِيَابَكُم مِّنَ ٱلظَّهِيرَةِ وَمِنۢ بَعۡدِ صَلَوٰةِ ٱلۡعِشَآءِۚ ثَلَٰثُ عَوۡرَٰتٖ لَّكُمۡۚ لَيۡسَ عَلَيۡكُمۡ وَلَا عَلَيۡهِمۡ جُنَاحُۢ بَعۡدَهُنَّۚ طَوَّٰفُونَ عَلَيۡكُم بَعۡضُكُمۡ عَلَىٰ بَعۡضٖۚ كَذَٰلِكَ يُبَيِّنُ ٱللَّهُ لَكُمُ ٱلۡأٓيَٰتِۗ وَٱللَّهُ عَلِيمٌ حَكِيمٞ

"O you who have believed, avoid much [negative] assumption. Indeed, some assumption is a sin. And do not spy or backbite each other. Would one of you like to eat the flesh of his brother when dead? You would detest it. And fear Allah; indeed, Allah is Accepting of repentance and Merciful[27]*".*

"*And fulfill (every) covenant. Verily, the covenant will be questioned about*[28]*".*

"Verily, Allah commands that you should render back the trust (amanah) to those, to whom they are due"[29]*. "Allah prohibits violation of trust; "O you who have believed, do not betray Allah and the Messenger or betray your trusts while you know [the consequence*[30]*".*

"Do not come near the wealth of the orphan—unless intending to enhance it—until they attain maturity. Honour your pledges, for you will surely be accountable for them"[31]*.*

"Indeed, Allah commands you to render trust to whom they are due and when you judge between people to judge with justice. Excellent is that which Allah instructs you. Indeed, Allah is ever Hearing and Seeing[32]*".*

Secrets are a kind of trust, contract, and covenant that must be kept and that have been emphasized in the traditions of the Prophet (PBUH). Umar Ibnu Khatab says: *If your brother mentions something to you in private then he walks away, it is an Amanah even if he didn't instruct you not to inform anyone.* The Prophet of Islam (peace be upon him) said: When somebody says something- and looks around himself, his speech is a trust and secret. The Prophet (saw) said, "If a person looks around while talking to another person, that conversation is considered confidential [33]. *"It is not permissible for a Muslim to look inside any house until he has been given permission…"*[34]

"Fulfill the assurances/promises made with people, indeed you will be asked about that (promise)

"Fulfil the trust of those who entrust you, and do not betray those who betray you[35]".

Keeping secret is obligatory while its disclosure is counted as *khiyānah* (betrayal), the opposite of *Amanah[36]".*

A confidential matter is whatever someone tells another with either a prior or subsequent request to keep it secret.

This includes matters that are conventionally known to be confidential, including a person's private characteristics or defects that he or she is loath to make public.

A private matter is confidence in the hands of the person entrusted with it, under Shariah principles and with the ethics of magnanimity and good conduct[37].

Narrated Abu Huraira: Abul Qasim said, if any person peeps at you without your permission and you poke him with a stick and injure his eye, you will not be blamed [39].

"Anyone who (Eavesdrop) listens to people talking when they dislike him doing so or flee from him will have molten lead poured into his ear on the Day of Qiyamah[40].

"Remember˹ when the Prophet had ˹once˺ confided something to one of his wives, then when she disclosed it ˹to another wife˺ and Allah made it known to him, he presented ˹to her˺ part of what was disclosed and overlooked a part. So, when he informed her of it, she exclaimed, "Who told you this?" He replied, "I was informed by the All-Knowing, All-Aware[41]".

"It will be better˺ if you ˹wives˺ both turn to Allah in repentance, for your hearts have certainly faltered. But if you ˹continue to˺ collaborate against him, then ˹know that˺ Allah Himself is his Guardian. And Gabriel, the righteous believers, and the angels are ˹all˺ his supporters as well"[42].

Islamic jurists have described medical information as trust with the caregiver and lay down fundamental principles of privacy and confidentiality.

1. As a fundamental principle, disclosing secrets is a prohibited matter, and disclosing them without a genuine motive warranting it, is reprehensible under *Shariah*.
2. One cannot disclose anything that affects the ease of the patient, his dignity, and family"
3. Secret information includes "all matters that come to the knowledge of a physician, whether or not it relates to the patient's disease, treatment, and related situations, regardless of whether the physician gets the information from the patient or becomes privy to it during the patient's treatment".[43]
4. Identifiable personal information including, but not limited to, written, oral, computerized, or visual clips, photographs, audio records, and laboratory reports are also regarded as confidential regardless of whether these are obtained formally or informally
5. confidentiality appears to be protected by three significant factors which are: a) the demand of *Sharia*, b) the need of the concerned party, and c) the requirement of the profession e.g. teaching and training purposes, with the permission of the patient. In some cases, the information is released to relatives, authorities, and administration for medico-legal purposes, etc.

Privacy of the patient demands that the patient should not be discussed socially, at home, or with irrelevant people. Confidentiality is even more of a duty for professionals working in fields that are

adversely affected by indiscretion, such as medical professions. Such professionals are resorted to for the sake of advice and assistance to people who open up to them and share anything that may help them fulfill their vital tasks properly[44].

Exceptionally, the duty of confidentiality is not imposed in cases where the retention of a secret may entail damage greater than that which might otherwise be suffered by its patient, or where the disclosure of the secret may lead to a public interest that overweighs in importance the risks of its retention Such as release of information about the dangerous contiguous disease.

An ethical dilemma arises when there is a breach of confidentiality or privacy of the patient in avoidable or unavoidable circumstances which need to be enveloped. In that case, a scene of guilt prevails and if not resolved may end up with a moral injury and all its consequences[45].

Allocation of scarce resources:

There are various types of resources being utilized in healthcare. Mostly these resources incorporate the people, facilities, equipment, and funding that enable the delivery of healthcare services to the community. Personnel involved in healthcare management are They include healthcare professionals like Physicians, nurses, paramedics, support, and managerial staff. Facilities include clinics, hospitals with all their accessories, and other facilities where care is provided. Efficient and effective healthcare delivery is not possible without financial resources and management, particularly in a situation, where the resources are limited and scarce. Inequities in health and healthcare are one of the greatest challenges facing the international community today. Resources allocation raises serious questions for healthcare planners, politicians, and ethicists alike. However, allocation of scarce healthcare-related resources entails a three-step process: a) elucidating the fundamental ethical values for allocation, b) using the values to delineate priority tiers for scarce resources, and c) actually implementing the prioritization to faithfully realize the fundamental values[46].

From an Islamic perspective, healthcare resources are allocated in accordance with the broad principles of equity, needs, and indiscrimination. Allocation of healthcare resources prioritizes the well-being of the community and emphasizes the fair distribution of resources, with a focus on providing accessible and affordable care for all, especially the most vulnerable. Sharia integrates the spiritual, physical, and mental well-being of individuals, communities, and societies. Islamic teachings emphasize holistic healing and provide guidelines for preventive, curative, rehabilitative, and promotive aspects of healthcare. Based on the principles of fairness; transparency; and evidence-based, equitable care Sharia emphasizes physical. Mental and emotional aspects of healthcare. For example, personal cleanliness, environmental hygiene, and civic rights of individuals and communities are ritual bindings on believers. These principles are emphasized in the Quran and *sunnah* like ablution and essential baths etc.; "*Believers! Do not draw near to the Prayer while you are intoxicated until you know what you are saying nor while you are defiled - save when you are traveling - until you have washed yourselves. If you are either ill or traveling or have satisfied a want of nature or have had contact with women and can find no water, then betake yourselves to pure earth, passing with it lightly over your face and your hands. Surely Allah is All-Relenting, All-Forgiving*[47]*".* Likewise, oral hygiene, regular exercise, dietary habits, and a

healthy lifestyle are stressed in the Quran and the Sunnah.

Illness and Stigma

Unhealthiness of body and mind might reflect negatively, assigning to an individual which in view of others, discredits and diminishes them from other people. The stigmatized individual becomes a person who is discounted. To be viewed negatively by others, to be avoided, and to be seen as less than a full member of the community is a major burden for a person who is stigmatized being a sick person as a member of the society.

Islamic teachings do not encourage or promote stigma, societal attitudes and individual beliefs can lead to stigma around illness, especially mental health**.** Contrary to stigma, the Islamic teachings view illness as a test or blessing from Allah and encourage seeking medical assistance. However, societal misconceptions and cultural norms can lead to shame and isolation, deterring individuals from seeking help**.** Seeking medical assistance is encouraged in Islamic teaching because Muslims believe Allah has created the cure for every disease: *Narrated by Abu Huraira: The Prophet (PBUH) said, "There is no disease that Allah has created, except that He also has created its treatment*[48]*."* Illness is seen as a test or a means for Allah to expiate sins rather than a stigma; *Narrated Abu Sa'id Al-Khudri and Abu Huraira: The Prophet (PBUH) said, "No fatigue, nor disease, nor sorrow, nor sadness, nor hurt, nor distress befalls a Muslim, even if it were the prick he receives from a thorn, but that Allah expiates some of his sins for that"*[49]*.* Islam also encourages efforts to fight stigma involve promoting open discussions about mental health, challenging negative stereotypes, and emphasizing the importance of seeking medical assistance.

Ethical dilemma in reproductive healthcare

Reproductive health is an important component of the healthcare system. This service requires appropriate levels of care, confidentiality, and truth-telling– possibly more than any other part of the health services. However, appropriate care might be hindered due to conflicting situations and facing ethical issues generating ethical dilemmas. Ethical dilemmas in reproductive healthcare arise from the intersection of healthcare, religious and personal beliefs, social values, and community orientations. While navigating complex choices regarding contraception, abortion, assisted reproductive technologies, and the care of pregnant women, ethical dilemmas may arise. The decision of the physicians, healthcare system, governing terms of reference, and state laws may conflict with the patient's autonomy. Dilemmas may arise during termination and prevention of pregnancy, such as the moral status of a fetus, patients' religious or cultural beliefs, equity base care and access to contraception and abortion, the moral status of surplus embryos, and the moral status of interfering with the natural reproductive process (right to procreate), fairness and the potential for prioritizing certain treatments over others[50].

More dilemma arises from the facts when questions arise while navigating fetal well-being and autonomy of the mother, genetic testing creating discrimination against the

fetus, and several other questions related to the use of fetus for research purposes.

Another dilemma may arise in case of breach of patient privacy particularly in sexual health research and while providing information about reproductive options, is a crucial ethical consideration. Possibly, physician's objections to certain reproductive services, a balance between their rights and the patient's right to access to reproductive facilities, and institutional restrictions might raise ethical questions.

Gender-based violence like testing virginity, and female genital mutilation in childhood as prevailing cultural norms in certain societies generating causes of ethical concerns leading to ethical dilemmas. These ethical dilemmas highlight the complexities of reproductive healthcare and the need for ongoing dialogue and ethical reflection within the medical community and society for resolution.

Islamic perspectives on reproductive healthcare prioritize the sanctity of marriage and procreation within its framework, allowing assisted reproductive technologies (ARTs) like in vitro fertilization (IVF) as long as they involve only the husband and wife. Third-party involvement, including egg and sperm donation and surrogacy, is prohibited. Islamic principles like *maqasid e shariah,* which emphasize protecting human dignity and well-being, are violated when individuals are stigmatized due to illness. Islam encourages compassion, empathy, and supportive relationships within families and communities, which can help mitigate stigma and foster a sense of belonging. The Prophet, (PBUH) said: *"The child is to be attributed to one on whose bed it is born, and for a fornicator there is stoning." (Sahih Bukhari and Muslim).* Islam protects the lineage and its sanctity should be maintained at all costs; "*Whoever attributes himself to other than his father, or is related to other than his own master, there is upon him the curse of Allah, the angels, and all the people.*" (Sahih Muslim).

Resolving Ethical Dilemma

Resolution of an ethical dilemma mandates a multi-step process including identification of the ethical issue, gathering information, analyzing choices, application of ethical framework revoking concerned principles, decision making, implementation of decisions, and evaluation of the impacts of dilemma and remedial measures. The decision should be taken collectively taking into consideration the opinion of ethicists, peers, and if possible other experts. Healthcare dilemma requires a more structured and systematic approach, considering the specific situation, and applying ethical principles and available resources. After understanding the dilemma, all possible remedial measures and options are to be analyzed in the specific context, and the action plan is defined accordingly.

Islamic ethics provides a balanced approach to resolving any ethical dilemma including healthcare dilemmas. Islamic teachings provide guidelines derived from the Quran and the Sunnah emphasizing the prime purposes of *Shariah*. Key considerations include respecting patient autonomy and dignity, while also upholding the values of truth-telling, confidentiality, and justice in all situations. Where it is necessary it mandates to take the opinion of the trustworthy Islamic scholar as guided in the Quran*: "And We sent not before you except men to whom We revealed [Our message]. So, ask the people of the message if you do not know*[51]*"*

Every person may encounter an ethical dilemma in almost every aspect of his life, including personal, social, and professional, while basic principles for the resolution of these values apply in healthcare as well.

Some of the important principles are:

Refute the paradox (dilemma): The situation must be carefully analyzed. In some cases, the existence of the dilemma can be logically refuted. Always value the theory approach: Choose the alternative that offers the greater good or the lesser evil.

One can always find alternative solutions: In some cases, the problem can be reconsidered, and new alternatives may arise as the result of contextual discussion.

The biggest challenge of an ethical dilemma is that it does not offer an obvious solution that would comply with ethical norms. Throughout the history of humanity, people have faced such dilemmas, and philosophers aimed and worked to find solutions to them. Some important steps to be taken in this regard are:

1. Information gathering:

Collect all relevant details about the patient's situation, including their medical history, preferences, cultural and religious background, and any relevant family dynamics.

2. Identify the Dilemma:

Always clearly define the conflicting ethical principles or values at play. Find out the competing obligations or interests involved while dissecting this issue.

3. Explore Options:

Multiple courses of action and their potential consequences should be considered. One must always contemplate the possible outcome of each option under consideration. Impacts on the patient, the healthcare team, and the broader community should be anticipated and considered before application.

4. Apply Ethical Principles:

By using ethical frameworks and principles like beneficence (doing good), non-maleficence (avoiding harm), autonomy (respecting patient's choices), and justice (fair treatment) to evaluate each option under consideration, one can find the best solution.

5. Consult with Others: It is always beneficial to seek guidance from colleagues, ethics committees, or professional organizations prior to final action.

6. Make a Decision: Depending upon the step taken prior one can choose the course of action that best balances the ethical principles and considers the potential consequences.

7. Implementing the Decision: Once reached to the decision, it should be communicated to the stakeholders including the patient ensuring transparency and respect.

8. Reflect and Evaluate: It must be understood that there is always room for improvement in human decisions, therefore, after the decision has been implemented, reflect on the process and outcome to identify areas for improvement in future ethical decision-making.

While resolving an ethical dilemma, key considerations should be:

a. **Patient Autonomy:** Respect the patient's right to make informed decisions about their care, even if those decisions conflict with the healthcare professional's recommendations.

b. **Cultural Sensitivity:** One should be aware of and respect the patient's cultural and religious beliefs.
c. **Confidentiality:** Patient's privacy and personal information should be protected.
d. **Documentation:** It is always desirable to thoroughly document the ethical dilemma, the decision-making process, and the chosen course of action. This repository might help resolve future similar dilemmas.
e. **Ongoing Education:** healthcare workers must be aware of ethical guidelines and best practices in healthcare and how these guidelines can be contextualized[52].

Core Islamic ethical values to resolve the ethical dilemma: Islamic teachings provide robust guidelines on the resolution of ethical dilemmas, particularly in the healthcare management system. Some of the important ethical values and their applicant in resolving ethical dilemmas are:

1. **Justice (*Adl*):** Ensuring fairness and equity in all aspects of life, both in personal interactions and in societal structures. This means treating everyone equally and avoiding favoritism or discrimination. "Verily, Allah commands, *Adl* (fairness, equity, justice) *Ihsaan* (excellence in servitude to Allah, benevolence towards people, graciousness in dealings) and giving to those close to you, while He forbids Fahshaa (lewdness, indecency, licentiousness, immorality), Munkar (bad actions, undesirable activities, generally unaccepted behaviour, not fulfilling one's obligations), and Baghy (rebellion, transgressing limits, exploiting or violating others‟ rights, abuse of authority or freedom). He admonishes you so that you heed the *advice"*.[53]

It has been narrated on the authority of 'Abdullah B. 'Umar that the Messenger of Allah (ﷺ) said: "*Behold! The Dispensers of justice will be seated on the pulpits of light beside Allah, on the right side of the Merciful, Exalted, and Glorious. Either side of the Being is the right side both being equally meritorious. (The Dispensers of justice are) those who do justice in their rules, in matters relating to their families, and in all that they undertake to do[54]"*.

"O believers! Stand firm for justice as witnesses for Allah even if it is against yourselves, your parents, or close relatives. Be they rich or poor, Allah is best to ensure their interests. So do not let your desires cause you to deviate ˹from justice˺. If you distort the testimony or refuse to give it, then ˹know that˺ Allah is certainly All-Aware of what you do[55]". And also "O believers! Stand firm for justice as witnesses for Allah, even if it is against yourselves, your parents, or close relatives. Be they rich or poor, Allah is best to ensure their interests. So do not let your desires cause you to deviate from justice[56]."

Equity-based healthcare devoid of all sorts of discrimination is the ultimate goal of Islamic medical ethics.

2. **Compassion (*Rahmat*):** Showing kindness, mercy, and concern for others, especially those in need. This involves acts of charity and helping those less fortunate. "There certainly has come to you a messenger from among yourselves. He is concerned by your suffering, anxious for your well-being, and gracious and merciful to the believers[57]." The Prophet said: "God is kind and likes

kindness in all things[58]". The Prophet (PBUH) said: *"One of the finest acts of kindness is for a man to treat his fathers' friends in a kindly way after he has departed[59]"*. These are a few examples from the Quran and Hadith and needless to further emphasize the importance of compassion stressed in Islamic teachings.

3. **Consultation (*Shura*):** Involving others in decision-making processes, especially when it comes to matters of importance. Particularly when deciding about patient care. Involving patients in designing their healthcare promotes a sense of shared responsibility and encourages diverse perspectives of healthcare thus improving patient outcomes. As said in the Quran consulting each other in common matters is greatly emphasized: *"It is out of Allah's mercy that you ˹O Prophet˺ have been lenient with them. Had you been cruel or hard-hearted, they would have certainly abandoned you. So, pardon them, ask Allah's forgiveness for them, and consult with them in ˹conducting˺ matters. Once you make a decision, put your trust in Allah. Surely Allah loves those who trust in Him"[60].* The prophet (PBUH) said, "Allow people to barter amongst themselves, but if one of your brothers seeks advice, then let him offer advice.[61]. Once someone asks for a consultation, it is his right to get a consultation from whom he sought, The Prophet (PBUH), said, *"If your brother requests your consultation, let him give counsel[62]".*

4. **Moderation (*Wasat*):** Islamic teaching prohibits adopting extreme views and instructs avoiding extremes in all aspects of life, including consumption, actions, and beliefs. This also implies in medical practice while executing our duties and emphasizes adopting a balanced approach and avoiding excess. This middle path provides equilibrium in actions, beliefs, and overall conduct, as it is described as the "right way" or "best". The Quran uses "*Wasat*" to describe the Muslim community, signifying their role as witnesses over people, and highlighting the importance of moderation as a characteristic of the Muslim faith. *"And thus, We have made you a moderate community that you will be witnesses over the peopl[63]*". This and many other verses emphasize adherence to principles of justice, equity, and moderation, serving as a model for all humankind.

We must not be so excessive in our spending that our family and those who are dependent upon us suffer because of our wastefulness. And also, not be so stingy that others do not benefit from our resources. It is in between these two extremes that moderation is found. Some of the important aspects of Islamic theology are: stability; order; grounded nature of things; completeness or comprehensiveness; and wholeness or fullness while performing our professional responsibilities. As said; Those who are neither wasteful nor miserly when spending but balanced between these" (two extremes)[64]. The Prophet (PBUH) always adopted the moderate ways of action which is greatly emphasized in Sunnah: *"Do*

not do so. Fast and break your fast, pray in the night, and sleep. Verily, your body has a right over you, your eyes have a right over you, and your wife has a right over you"[65]. And also, another hadith; You have a duty to your Lord, you have a duty to your body, and you have a duty to your family, so you should give each one its rights[66].

Honesty (*Siddiq*): Honesty is a cornerstone of ethical conduct, and encompasses truthfulness, sincerity, and integrity in both words and actions. It involves being free from deception and fraud, and it is considered a virtue valued in social relationships and for building trust. Being truthful and sincere in all dealings, both verbally and in actions. Islam considers it a basic belief system while, honesty is a core virtue, emphasizing truthfulness, sincerity, and integrity. It's not just about speaking truthfully but also about aligning one's inner self with one's outward actions and words. Muslim healthcare workers are fortified to be honest in all aspects of life, including dealings with Allah, themselves, and others.

The Prophet (ﷺ) said, "Truthfulness leads to righteousness, and righteousness leads to Paradise. And a man keeps on telling the truth until he becomes a truthful person. Falsehood leads to Al-Fajur (i.e. wickedness, evil-doing), and Al-Fajur (wickedness) leads to the (Hell) Fire, and a man may keep on telling lies till he is written before Allah, a liar."[67] **Patience (*Sabr*): "**Sarb" literally means 'enduring, 'bearing,' and 'resisting pain, suffering, and difficulty,' and 'dealing calmly with problems.' Patience is a key virtue that encompasses endurance, restraint, and perseverance, particularly during trials and hardships. In more general terms it means "patience," which is one of the most important actions of the heart mentioned in the Qur'an. In case of disease and sickness, it is instructed to remain focused on achieving one's goals rather than be impatient, it is also about trusting in Allah's plan, remaining steadfast in the faith, and continuing to strive for righteousness, even when facing adversity. *"And be patient, (O Muhammad), and your patience is not but through Allah. And do not grieve over them (the disbelievers) and do not be in distress over what they conspire*[68]*".* In other incidences, it is also emphasized: "*And be patient (O Muhammad) for the decision of your Lord, for indeed, you are in Our Eyes (sight), And glorify with the Praise of your Lord when you arise*[69] and "*O you who have believed, persevere and endure and remain stationed and fear Allah that you may be successful*[70]*". Patience also stressed in the Sunnah of our Beloved Prophet (PBUH) e.g. Prophet (PBUH) said: "Never a believer is stricken with a discomfort, an illness, an anxiety, a grief or mental worry or even the pricking of a thorn but Allah will expiate his sins on account of his patience" (Sahih Bukhari and Muslim).*

5. **Trustworthiness (*Amanah*):** It is about upholding one's word and obligations, and being reliable in all aspects of life. It is an essential part of faith and a core principle of Islamic medical ethics and signifies fulfilling one's obligations, being reliable, and upholding integrity in all dealings. *"Indeed, we offered the Trust to the heavens and the earth and the mountains, and they declined to bear it and feared it; but man [undertook to] bear it. Indeed, he was unjust and ignorant[71]"*. Trustworthiness is described as a key component of faith and has been discussed as e.g. "And they who are to their trusts and their promises attentive[72]", describes successful believers as those who "are to their trusts and their promises attentive. Fulfilling trust in all matters entrusted to them, including promises, financial obligations, and secrets e.g. *Indeed, Allah commands you to render trust to whom they are due, and when you judge between people to judge with justice. Excellent is that which Allah instructs you. Indeed, Allah is ever Hearing and Seeing[73]"*. Accountability and fulfilling Responsibility extends beyond mere honesty to include accountability before Allah for one's actions. The Quran condemns those who betray promises and emphasizes the importance of fulfilling covenants*: "Fulfill the Covenant of Allah when you pledge and do not break oaths after you swear them solemnly, while you have made Allah a witness over you. Surely, Allah knows all that you do..[74]"*. Likewise other verses in Quran like Al-Maidah, Verse 14, Al-Baqarah, Verse 40, and others. Trustworthiness must be adherent in leadership, knowledge, and other matters. The Prophet Muhammad (PBUH) emphasized the need to fulfill trust and not betray those who entrust us with responsibilities. The Prophet (PBUH) "I have passed through a time in which I did not care with whom amongst you I entered into a transaction, for if he were a Muslim his faith would compel him to discharge his obligations to me and it, he was a Christian or a Jew, the ruler would compel him to discharge his obligations to me. But today I would not enter into a transaction with you except so and so[75]".

6. **Knowledge (*Ilm*):** Seeking knowledge and understanding the world around us, is greatly emphasized in Islamic theology as said in the Quran; "*Allah will elevate those of you who are faithful, and ˹raise˺ those gifted with knowledge in rank. And Allah is All-Aware of what you do*"[76]. Another place it is greatly stressed that knowledge is crucial for decision-making; *(O Muhammad), whenever We raised any Messengers before you, they were no other than human beings; (except that) to them We sent revelation. So, ask those who possess knowledge if you do not know"[77]*.

   Prophet Muhammad (PBUH) said: "Whoever follows a path in search of knowledge, Allah will make easy for him the path to Paradise." (Sahih Muslim). *At is those of His servants who have knowledge who stand in true awe of God. God is almighty, most forgiving"[78]. x*

7. **Piety (*Taqwa*):** Allah's consciousness at all times living in

accordance with Allah's will and striving to please Him through every intention and action. It signifies a deep awareness and respect for Allah's presence and a strong moral compass, encompassing obedience and avoidance of that which displeases Allah. Taqwa is a shield or protective barrier, safeguarding oneself from actions and situations that could anger Allah. The Quran repeatedly emphasizes the importance of developing *taqwa* and encourages believers to attain *taqwa* which is considered the highest level of moral and spiritual development, a way of life that pleases Allah. A few examples from the Quran are:

"This is the Book; there is no doubt in it; a guidance for the *muttaqin* (those who have Taqwa)[79]". Also many other verses like Quran 2:183, 3:195, 65:4, 21:73, and others verses profoundly stress the need for Allah's consciousness at all times. Prophet (PBUH) emphasized it in several traditions for attaining in accentuating taqwa: The Prophet (PBUH) Said, *"Fear Allah everywhere you are and have good character*[80]".

"And those who have *Taqwa* of Allah in their actions and are righteous and faithful[81]."

8. **Responsibility (*Mas'uliyyah)*:** It is about taking accountability for one's actions and their consequences. It encompasses accountability for one's actions, both in this life and the hereafter. The Quran and the traditions of the Prophet (PBUH) underscore the importance of fulfilling responsibilities towards oneself, family, community, and society as a whole. When made accountable a person is individually and collectively responsible for his deeds and actions including performing professional duties. The Quran repeatedly emphasizes that individuals are responsible for their own actions and will be judged based on their deeds on the Day of Judgment. "*And no bearer of burdens will bear the burden of another. And if a heavily laden soul calls [another] to [carry some of] its load, nothing of it will be carried, even if he should be a close relative.* You can only warn those who fear their Lord unseen and have established prayer. And whoever purifies himself only purifies himself for [the benefit of] his soul. And to Allah is the [final] destination[82]". There are social responsibilities of every individual and he is accountable for those; The Prophet (PBUH) used the metaphor " *"Every one of you is a shepherd and is responsible for his flock. The leader of the people is a guardian and is responsible for his subjects. A man is the guardian of his family and he is responsible for them. A woman is the guardian of her husband's home and his children and she is responsible for them. The servant of a man is a guardian of the property of his master and he is responsible for it. No doubt, every one of you is a shepherd and is responsible for his flock.[83]"*. Hadith demonstrates that individuals have responsibilities in various roles, including as a

husband, wife, parent, child, employer, employee, and member of society. Honesty, trustworthiness, and upholding ethical standards are emphasized. Say, "Is it other than Allah I should desire as a lord while He is the Lord of all things? *And every soul earns not [blame] except against itself, and no bearer of burdens will bear the burden of another.* Then to your Lord is your return, and He will inform you concerning that over which you used to differ[84]."

9. Medical research and ethical dilemma

In the era of extensive medical research particularly on human subjects always remains a subject of special interest among the scientific community, the general public and the medical fraternity at large. Emerging 'ethical dilemma' poses a challenge to ethical theory as well as to applied ethics. Research ethics and code of ethical conduct emphasize basic commitment to safeguarding the rights and safety of the research participants who play a central role in research without whom they, their data, or their biological samples research is possible. Ethical dilemma arising during research requires special consideration and timely resolution. Clinical research poses many such ethical dilemmas from the time of formulation of the research hypothesis to the final implementation of the research and its conduct till completion including post-research issues that have to be clearly understood by all the stakeholders in research to carry out their responsibilities in protecting the rights of the participants. However, in the absence of a well-structured Bioethics education, it becomes more important to stress the need for continuous capacity-building exercises at all levels. Knowledge about national and international guidelines and regulations and putting in place appropriate laws in the country will go a long way in ensuring public confidence about the safety and well-being of the research participants[85].

An ethical dilemma arising from designing, conducting, and application of research is not much different from a dilemma arising during clinical practice and transitional research. The resolution of these dilemmas involves a multifaceted approach that considers both divine guidance and human reason, aiming to uphold justice, fairness, and the well-being of the individual and society. Key principles include the "Public Interest" (*Maslaha)*, "Do No Harm," "Necessity," and "No Hardship.

While at all times Islamic teachings emphasize consulting the relevant corners like knowledgeable individuals and scholars, reflection and evaluation of one's actions and motives are essential for ethical decision-making. Islamic principle emphasizes the importance of social responsibility and the need to contribute to the well-being of society while striving for fairness and justice in all interactions and decision-making[5]. The basic principles of decision-making are described in the verses of the Quran and traditions of the Prophet (PBUH); *"It is out of Allah's mercy that you ˹O Prophet˺ have been lenient with them. Had you been cruel or hard-hearted, they would have certainly abandoned you. So, pardon them, ask Allah's forgiveness for them, and consult with them in ˹conducting˺ matters. Once you make a decision, put your trust in Allah. Surely Allah loves those who trust in Him[86]".*

Conclusion

When faced with ethical dilemmas, Muslims are encouraged to: Seek Guidance, consult with knowledgeable religious scholars and seek guidance from the Quran and Sunnah,

critically reflect on the dilemma and carefully consider all aspects of the situation and the potential consequences of different courses of action. While in the decision-making process always consider involving others, particularly those with relevant knowledge and expertise. Always adhere to ethical principles and act with Justice and compassion by choosing the course of action that best aligns with Islamic values, prioritizing fairness, kindness, and the well-being of others. Islamic theology teaches us to be moderate, avoid extremes, and find a balanced approach that minimizes harm and maximizes benefits. Transparency and honesty must be upheld at all costs while remaining truthful in all communications and avoiding any actions that could deceive or mislead others. Core Islamic Ethical principles like the preservation of Life, Do No Harm (La Darar wa la Derar), Beneficence, Truth-Telling, Confidentiality, Justice Patient Autonomy, and Informed Consent. Respecting the patient's right to make choices about their own care, including the ability to consent or refuse treatment, is paramount. "The dearly loved of people to Allah is the person who is the most beneficial to persons" (al-Mujam al-Awsaṭ lil-Ṭabarani #6026) and Allah gives strength to those who are beneficial for others; "…. but as for that which benefits the people, it remains on the earth. Thus does Allah present examples[87]". Islamic teachings instruct caring for terminally ill patients with compassion and do not allow euthanasia and every effort should be made to relieve the suffering, and pain and provide psychological support to all patients without any discrimination. In the era of vigorous scientific research, all efforts are made to prevent human abuse of all kinds and manifestations. Islamic scholars have established guidelines for medical experimentation, ensuring that it is conducted ethically and with informed consent. While resolving ethical dilemmas one should consult and guidance from knowledgeable Islamic scholars on specific ethical issues. Balance decision-making considering the specific context, including the patient's condition, cultural and spiritual background, and any relevant legal considerations, to be taken into account while resolving the specific dilemmas. To remain transparent at all times, honestly and openly communicating with patients, their families, and relevant stakeholders will end up in the resolution of emerging ethical dilemmas and building trust in the healthcare system.

Adherence to an Islamic way of life is guaranteed success and prosperity; The Prophet (ﷺ) said: "The best among you are those who have the best manners and character[88]".

MORAL INJURIES

An injury to an individual's moral conscience, values, beliefs, and ethical standards results from an act of perceived moral transgression. It is the psychological, social and spiritual impact of events involving betrayal or transgression of one's own deeply held moral beliefs and values occurring in high-stakes situations[89]. It results in profound feelings of responsibility and embarrassment, feelings of societal alienation, contempt and anger - that results from the betrayal, violation or suppression of deeply held or shared moral values[90]." In some cases, it may cause a sense of betrayal and anger toward colleagues, management, the organization, politics, or society at large. Moral injury begins to incorporate the concept of moral self within every human, which is not typically the realm of psychology or mental health as we all have moral aspects of ourselves, beliefs, morals, and value systems. It ultimately has the psychological, social, and spiritual impact of

events involving betrayal or transgression of one's own deeply held moral beliefs and values occurring in high-stakes situations like a professional sphere of life. A key difference between burnout and moral injury is that burnout resides within an individual in response to external factors, and thus requires individualized interventions to resolve, while moral injury is reflective of a problem with external factors, in this case, the system of care in which the clinician practices, thus necessitating systematic solutions. It needs ethical expertise to distinguish between burnout and moral injury as there is overlap in the manifestations of these disorders. It is important that we all need to delve into the concept of morality[91].

Causes of Moral Injury: Moral injury precedes moral distress and emotional exhaustion and is related to an organization's ethical climate (e.g. organizational values, practice environment, quality of care) are associated with patient outcomes, and professional interest including retention, engagement, and job satisfaction. The causes of moral injury in healthcare can be divided into: individual factors, team-based factors, and system factors. These factors could be due to commissions (doing harm), omission (failing to prevent harm), or betrayal by trusted individuals or institutions[92]. On an individual basis, moral distress leading to injury could be due lack of experience, decision-making, and competencies of an individual healthcare worker. Team failure could be due to a lack of preparedness and a perceived lack of empathy and respect from supervisors have been found to be potent risk factors for moral injury initiation and development[93]. Similarly, those with line-management duties report feeling guilty about not having adequate resources for their staff and suppressing their needs to care for their staff. Healthcare workers' workplace productivity also deteriorates as a result of experiencing a moral injury[94]. System failure is one of the major causes of moral distress, injury, and even burnout. However, healthcare workers face multiple challenges due to system failure which provides a fertile breeding ground for moral distress and the development of moral injury among healthcare workers, including chronic understaffing and lack of resources. System failure is potentially problematic when the business model comes into conflict with healthcare delivery, during times when healthcare workers are required to see more patients than they can, especially with an inadequate number of resources, and when the systems do not account for the toll, these conflicting priorities can have on healthcare workers and patients alike[95]. Most of the healthcare leaders extensively work on meeting targets set forth for them by the governance. It is found that there is a fine line between efficiency and the perception of an overemphasis on meeting targets and maintaining a public image of strong leadership. Often as the result of not being able to provide person-centered care and feeling complicit in a system that is less equipped to provide high-quality care. Due to these and many other factors related to systematic failure, the workers have to make challenging medical decisions under extreme pressure, experience violence (physical or verbal violence from patients or patients' relatives), and are required to have emotionally charged conversations with

grieving or angry family members; these are all factors that have been found to contribute to moral injury. The workers have to put extra effort into compensating for systemic failures by over-working themselves, leading to burnout, exhaustion, disengagement at work, and cynicism towards their organization.

Consequences of Moral Injury:

Moral injury describes the challenge of simultaneously knowing what care patients need but being unable to provide it due to constraints that are beyond our control. When one has to make decisions that affect the survival of others when medics are not able to care for all who were harmed, freezing or failing to perform duty during a dangerous or traumatic event. Moral injury can occur when someone engages in, fails to prevent, or witnesses acts that conflict with their values or beliefs.

Levels of Moral Injury:

Moral injury is usually understood as the most severe and debilitating experience, **moral dilemma** as the least, and **moral distress** as somewhere between the two moral injury, moral distress, and results of moral dilemma may fall along a continuum. It is understood that ***spiritual damages*** are more serious than physical. **Abuse, rape,** and **violence** may cause similar types of damage, but unsolved moral dilemmas may cause severe and sometimes even more serious damage to the individual psychological distress[96].

Triggers of moral insult: there could be several factors inciting and progressing moral injury like when someone engages in, fails to prevent, or witnesses acts that conflict with their values or beliefs and faces events where one has to *make decisions that affect the survival of others or where all options will lead to a negative outcome. This may include* high-stakes situations; such as life or death; pressures to act quickly without time to think; no clear right and wrong choices; failure to prevent serious harm; and conditions in which doing the right thing is impossible and doing nothing feels terrible.

Moral Injury and PTSD: One must differentiate Moral injury from Post-Traumatic Stress disorder (PTSD). Moral injury events threaten one's deeply held beliefs and trust leading to a cognitive and emotional response that occurs after events that violate a person's moral or ethical code of conduct. It is not considered a mental illness. Post-Traumatic Stress Disorder (PTSD) can occur following threat-based trauma (physical/emotional/psychological etc.).

Moral injuries in healthcare: "The moral injury of healthcare is not the offense of killing another human in the context of war. It is being unable to provide high-quality care and healing in the context of healthcare". Moral injury plagued medicine long before the current pandemics and events. Economic, legal, and institutional pressures frequently forced clinicians to treat patients in ways they found morally reprehensible, whether by rushing them through clinic visits or hospital stays, or by continuing aggressive treatments for dying patients. A professional example of moral Injury in healthcare is: either **Institutional**

Betrayal: i.e. Transgressions by institutions upon individuals who are dependent on that organization or due to **Intrusive Advocacy: A p**sychologist places his or her moral values over the patient's (trampling patient autonomy).

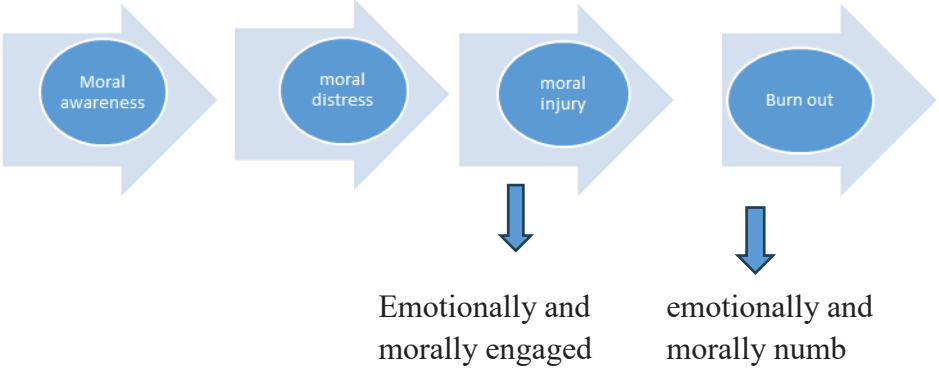
Moral, distress, Injury, and Burnout a continuum: Moral injury always precedes, which is an emotional and psychological distress of being in a situation in which one is constrained from acting on what one knows to be right. If not taken care of will lead to moral injury which is "The lasting psychological, biological, spiritual, behavioral, and social impact of perpetrating, failing to prevent, or bearing witness to acts that transgress deeply held moral beliefs and expectations" " if a moral injury is not timely diagnosed and addressed will lead to burn out which is "A syndrome of emotional exhaustion, loss of meaning in work, feelings of ineffectiveness, and a tendency to view people as objects rather than as human beings[97].

a. Moral distress is an acute condition and is expressed as a condition causing unease, discomfort, frustration, anger, feelings of powerlessness, and palpitations. The remedy for moral distress is to remove inciting situations, system reforms, strengthen moral identity through community, and cultivate moral resilience but if fails to address this situation will progress to **moral injury.**

b. Moral injury is a chronic condition and expresses a feeling of guilt, shame, anger, disgust, social withdrawal, ruptured identity, factual/Empirical crisis, and if not timely managed will lead to **burnout.**

c. Burnout is a chronic condition that leads to numbness, carelessness, disengagement, exhaustion, depersonalization and remedy for this condition will require a sabbatical; intensive therapy for addiction or depression; change of career if not timely managed will lead to: Medical error, malpractice, dissatisfied patients, staff turnover, addiction, suicidal tendencies[98].

Sequences and interplay



Potential ethical Interventions in Moral injuries

Potential Goals:

Clarifying moral authority and relativity of the events, developing a support network, depending on the issue followed by a long-term spiritual/religious healing ecosystem. All sessions should be value clarification and meaning-making while working with moral emotions such as; guilt, shame, and disgust. It is important to understand the issue in an ethical framework and work through the betrayal. Always develop a habit of **FORGIVENESS and COMPASSION** to self and others.

Preventive measures

It is important to empower all members of the healthcare system to raise questions and concerns toward the goal of improving institutional and personal well-being. Address the circumstances and contexts that give rise to moral injury, while providing healthcare. Healthcare leadership and communities must work toward repairing the wounds of the morally injured themselves. Peer support can promote conversation among colleagues who have shared traumatic experiences, emphasizes bearing witness and normalizing clinicians' reactions, and employs frequent expressions of gratitude. Strive to promote a sense of purpose and hopefulness, which are critical for the prevention of moral injury. Communities' support to the health-care workers and frequent expressions of gratitude towards healthcare workers may reduce moral distress. In preventing moral injury, the role of chaplains and spiritual specialists, religious teachings, and the moral canvas of society can always rescue moral distress and moral injuries[99].

From an Islamic perspective, moral injury in healthcare is viewed as a form of harm ("*Darar*") and a possible violation of ethical principles. Mostly failure to uphold trust and duty of beneficence while discharging professional duties leads to moral distress and injury. Islamic ethics emphasizes the importance of avoiding harm, prioritizing the well-being of others, and upholding moral principles in all aspects of life, particularly when providing healthcare services to the masses. In Islamic perspective, "Harm must be eliminated but not by means of another harm" (*Ad-dararu yuzalu wa lakin la bi-darar);* and "Harm is not eliminated by another harm" (*Ad-dararu la yuzalu bid-darar*). "Harm is eliminated to the extent that is possible" (*Ad-dararu yudfa'u bi-qadr al-imkaan)* and "A greater harm is eliminated by means of a lesser harm" (*Yuzal ad-darar al-ashaddu biddarar al-akhaff*) when one has to accept either: *"…do not harm them in order to oppress them…*[100]*"*. Also mentioned in other verses like Quran, 2: 229, 231 and 233, Quran, 4:5. The Prophet (PBUH) said, *"Do not cause harm or return harm. Whoever harms others, Allah will harm him. Whoever is harsh with others, Allah will be harsh with him.*[101]*"*. This hadith emphasizes the importance of avoiding both causing harm and responding to harm with further harm. Healthcare professionals are obligated to avoid causing harm to their patients, including emotional and psychological harm. Here another ethical principle is evoked like *non-maleficence***:** "no harm and

no causing harm". Islamic teachings emphasize that avoiding harm takes precedence over seeking benefit. If a situation involves both potential harm and benefit, the priority should be to minimize or eliminate the harm[102]. *(Precedence of Avoiding Harm).*

Islamic teachings emphasize that avoiding harm takes precedence over seeking benefit. If a situation involves both potential harm and benefit, the priority should be to minimize or eliminate the harm[103]. Healthcare workers should strive to provide *beneficence,* which means acting in the best interests of others. Whenever this principle is undermined, ensues moral distress leading to moral injury. Many Hadith of the Prophet (PBUH) emphasize the importance of helping others, showing kindness, and promoting well-being. "Do good deeds properly, sincerely, and moderately and know that your deeds will not make you enter Paradise and that the most beloved deed to Allah is the most regular and constant even if it were little[104]." *"The most beloved people to Allah are those who are most beneficial to people. The most beloved deed to Allah is to make a Muslim happy, remove one of his troubles, forgive his debt, or feed his hunger. That I walk with a brother regarding a need is more beloved to me than that I seclude myself in this mosque in Medina for a month. Whoever swallows his anger, then Allah will conceal his faults. Whoever suppresses his rage, even though he could fulfill his anger if he wished, then Allah will secure his heart on the Day of Resurrection. Whoever walks with his brother rega*rding *a need until he secures it for him, then Allah Almighty will make his footing firm across the bridge on the day when the footings are shaken"*[105]. Other important Islamic maximus that help in avoiding moral distress are a) to remain respectful and trustworthy at all times, b) remain transparent and truthful, c) always reflect and seek guidance from the Quran and Sunnah, spiritual leaders and scholars of the Text, d) provide support and care to your fellows, peers, and patients, e) Islamic teachings emphasize on systemic changes within healthcare institutions to create a culture that values ethics, supports healthcare providers, and prioritizes patient well-being[106]. The Prophet (PBUH) said, "*Help your brother, whether he is an oppressor or he is an oppressed one. People asked, "O Allah's Apostle! It is all right to help him if he is oppressed, but how should we help him if he is an oppressor?" The Prophet said, "By preventing him from oppressing others."*[107]

Conclusion

Moral injury in healthcare professionals is inversely related to psychological resilience and taxing well-being. Moral distress leading to moral injury occurs when the core values and ethical beliefs of healthcare providers are violated. This may lead to significant psychological distress. Moral distress can stem from various situations, including witnessing or participating in actions that go against their moral compass, being unable to provide optimal care due to systemic issues, or feeling betrayed by the system's failure or inefficiency. It might end up with lasting psychological and moral disorders and if not, timely addressed may lead to disastrous consequences like

burnout, anxiety, depression, and even suicidal tendencies. Islamic remedial measures, however, play an important role by following the teachings of the Quran, Sunnah, and shariah principles related to medical practice and emphasize compassion, justice, and the preservation of life, guiding medical practice and handling difficult situations. Key principles include the sanctity of human life, prioritizing patient well-being, seeking knowledge and excellence in medical practice, and remaining at the cutting edge of knowledge and expertise in the respective field. Islamic teachings are directed to uphold honesty and integrity in all situations and times and deliver services without discrimination. In case of distress and moral injuries, Islam encourages seeking help, maintaining hope, and striving for the best possible outcome while acknowledging the role of divine will. But at the same time doing the best as for as one can including striving for system change and systematic improvement; *"Indeed, Allah will not change the condition of a people until they change what is in themselves. And when Allah intends for a people ill,[3] there is no repelling it. And there is not for them besides Him any patron[108]".*

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CONTEMPORARY GENDER ISSUES: AN ISLAMIC PERSPECTIVE

Mohammad Iqbal Khan, Naveed Butt and Moeza Iqbal*

Abstract

In the modern era gender issues gained remarkable interest, due to gender disparities being encountered in various societies. A wide range of social problems stem from unequal treatment and opportunities based on gender; in education, healthcare, and employment, unequal access to resources, decision-making power, and gender-based violence. Gender issues are approached with a framework that emphasizes both spiritual equality and differentiated roles based on natural differences. In Islam, gender issues are approached with a framework that emphasizes both spiritual equality and differentiated roles based on natural differences. While the Quran affirms the equal spiritual worth of men and women, Islamic tradition and jurisprudence have also shaped distinct gender roles, leading to varying interpretations and practices. Key areas of discussion include Islamic ethics and modern LGBTQ+ issues, which have recently intensified. The Islamic teachings, however, do not recognize such definitions, as scholarly work that interprets sacred texts strongly negates such innovations. Islam only allows sexual relationships with one from the opposite gender and marriage is "a physical, soulful bond between a man and a woman as husband and wife with the purpose to build a happy and eternal family based on faith in the one Almighty Allah. **Disorders of Sex Development (DSD)** is considered a type of ailment as many others and may be dealt with by healthcare professionals. DSDs are birth defects that may occur in any part of the body including internal and external genital organs. Such individuals are not separated from their families; they enjoy all the rights that are considered the rights of any human being. Each defect is a disease and a trial. **Biological predispositions and clinical outcome of DSD:** These disorders are related to external and internal sex organ development which are biologically predisposed and clinically manifest in various forms. As other congenital deformities are being holistically dealt with, Islamic teachings encourage corrective measures with human dignity and respect without any discrimination. These individuals are called Khantha, *hijara*, eunuch, or intersex The term ***'Transgender'*** is an umbrella term encompassing various gender identities. A few of these are Pangender, Polygender, Panromantic, Gender Fluid, Genderqueer, Straight, Lesbian/Gay, Homosexuals. Factors that may influence sexual orientations are: genetics, *desire and self-perception, environment and psychosocial aspects.*

*Prof. Mohammad Iqbal Khan, MD; FRCS (Glasg); FRCS (Eng.); DVS (UK); MHPE (Neth); FCPS (Vas Surg)
Professor of Surgery – Vice-Chancellor
Shifa Tameer e Millat University (STMU)
Consultant General & Vascular Surgeon - Shifa International Hospital, H-8/4 Islamabad Pakistan
E-mail: vc@stmu.edu.pk , mikhandr@gmail.com

Gender dysphoria is a persistent uneasiness or anguish due to a precepted mismatch between an individual's assigned sex at birth and their experienced gender identity. This phenomenon has been discussed in detail in the light of the Quran and *sunnah* and its applications in society at large.

The Human Rights Declaration and LGBTQ+ have been elaborated and how this movement influenced the Muslim societies leading to legislative protection of transgenders. How these legislations are intensively dissected within spiritual framework and how atheistic ideas lead to the annihilation of any society. Some recommendations are included for Muslim countries, societies, and individuals to enable them to handle such ideations and movements based on these convictions. Islamic law is undoubtedly very much against LGBTQ behavior since it overrides the Godliness nature and is not in accordance with the provisions in the Qur'an and Hadith. All Muslim countries must reject LGBTQ and all such like other movements and leadership of these countries must represent the true teachings of Islam. Societies need to be educated; academia and educational institutions must design ecosystems that discourage mind pollution and encourage a natural lifestyle with prevailing divinity in all endures including gender issues.

Keywords: Gender issues, Transgenders, DSD, LGBT, Islamic teachings, and Gender dysphoria.

Introduction

All human beings are born graceful, decorous with inherent goodness and respectability irrespective of their gender, race, beliefs, creed, color, etc. The people must be treated ethically regardless of their gender: *"And We have certainly honored the children of Adam and carried them on the land and sea and provided for them of the good things and preferred them over much of what We have created, with [definite] preference*[1]*"*. While taking into consideration gender as an identity within an ethical framework, we need to dissect the role of an individual who has been assigned gender and how gender orientation operates in different aspects of life within acceptable social and cultural norms. We all accept gender as a complex characteristic mainly associated with masculinity and femininity. In general gender orientation derives social and cultural compartment of any society and in recent days mainstream understanding of gender relates to diverse gender identities than simply that which they were assigned at birth (cisgender) have been able to identify themselves in ways that more closely reflect their experiences and expressions. Regrettably, with the inherently identity-based nature of gender, a crowd of ethical issues arises mostly in the form of discrimination based on gender orientation. Some people are not satisfied with their gender identity based on their physical appearance or may not identify themselves as man or woman, and instead feel that they are somewhere in between, or that the binary conception of gender doesn't fit their experience and identity as non-binary. However, in many non-western cultures, gender has never been a binary concept. For example, in many situations, so so-called transfeminine people after being reassigned themselves from true physical men may be victims of discrimination[2].

On the other hand, gender identity and its social, anthropological, philosophical, academic, and cultural implications remain a

very active research and debate area globally. Identity generates very serious concerns often conflicting with the existing social norms due to its inherently personal nature. During the academic discourse, social scientists' particularly philosophers have significantly influenced public critique with weighty effects on many people's lives [3].

Ethics of gender examines; how prevailing moral and belief systems affect one's life and how gender operates within moral beliefs and practices, aiming to address various gender-related ethical, moral, and social issues like discrimination, inequality, and oppression. Moral norms like fairness, justice, and equal opportunity are the rights of all genders.

Man was created by the Almighty Allah as his vicegerent on earth and bestowed with great respect "Indeed, We have dignified the children of Adam[4]". Allah has created two genders in his wisdom "*To Allah ˹alone˺ belongs the kingdom of the heavens and the earth. He creates whatever He wills. He blesses whoever He wills with daughters, and blesses whoever He wills with sons, or grants both, sons and daughters, ˹to whoever He wills, and leaves whoever He wills infertile. He is indeed All-Knowing, Most Capable[5]".* Though the two genders created by the Almighty are equal in humanity, they differ from each other in their physical appearance, structure, mental and emotional attributes, and feelings. Islamic beliefs affirm that the division of gender is entirely under the control of Almighty Allah.

"O mankind, indeed We have created you from male and female and made you peoples and tribes that you may know one another. Indeed, the most noble of you in the sight of Allah is the most righteous of you. Indeed, Allah is Knowing and Acquainted[6]." Tempering the creation is not allowed in Islam and is considered a satanic act. This means using something created by Allah for a purpose other than what it was intended for, or not using something for the purpose for which Allah Almighty created it. In essence, this means that humans misunderstand the laws set by the creator of the universe and wish to correct them (*Na'uju-Billah*). *(As Shaitan has said) I will certainly mislead them and delude them with empty hopes. Also, I will order them and they will slit the ears of cattle[1] and alter Allah's creation." And whoever takes Satan as a guardian instead of Allah has certainly suffered a tremendous loss[7].*

Though gender issues remained a hot topic at various intellectual, political, public, and societal levels over the past four decades, during the immediate past two decades, a new wave of gender issues under the name of 'Transgender' is a result of the thought that if a man does not like being a man, he can become a woman, and if a woman does not feel good about being a woman, she can become a man. Deceitful academic and political support was provided to the perpetuators and propagators of these thoughts ending with a non-ending debate about the perception of gender and its applications in society. In many countries, national resources have been directed to promote a novel understanding of gender issues in the name of human rights and self-determination. In many countries, legislative support was provided with legal bindings on societies and individuals to respect such absurd ideas citing one or the other reason[8].

Whereas, in Islamic teaching, such feelings are not only discouraged but even if

resemblance is not accepted, gender reassignment and having it officially registered in state institutions is completely deplorable. *It is narrated from Abdullah Ibn Abbas (RA) that he said: The Prophet (PBUH) cursed effeminate men (those men who are in the similitude (assume the manners of women) and those women who assume the manners of men, and he said, "Turn them out of your houses." The Prophet (PBUH) turned out such-and-such man, and `Umar turned out such-and-such woman*[9]. Islamic scholarship unanimously agreed on the sanctity of the genders and strongly opposed gender reassignment as prohibited (haram). Unfortunately, deleterious motivations tempted by *shaitan* somehow espoused in Muslim societies as well leading to even silent but alarming legislations through the parliaments likewise was approved in Pakistan in 2018 by the higher house first and then by the lower house, providing legal protection to such perverted ideas. It was later declared illegal and against the *Shari'ah* jurisdiction by the *Shari'ah* court and now the case is pending before the *Shari'ah* appellant bench of the Supreme Court of Pakistan.

Emerging gender issues and its socio-economical and religious impacts

Pakistan Islamic Medical Association (PIMA) took up this issue on national and international levels. The issue was taken up not only in the parliament but also in a legal battle that was initiated and successfully won by the Shari'ah court. To discuss various aspects of the Transgender issue, the Pakistan Islamic Medical Association (Women's Wing) held a one-day seminar on June 26, 2022, at Shifa International Hospital, Islamabad. This seminar was a timely initiative by the PIMA Women's Wing and encompassed the religious, medical, legal, and psychological dimensions of this issue. In discussing the medical perspective, it was clarified that 'Transgender' and 'Intersex' are two entirely different terms. Intersex is a congenital physical illness and such physical illnesses can be found in any part of the body. We all know that congenital ambiguous genitalia constitutes around 0.017% of the population[10]. Like other illnesses, its potential treatment is the responsibility of the medical community and the governance. Islamic theology provides specific rights to these individuals including their socio-economic, spiritual, and legal rights to all amenities being provided by the society. As for the rights and responsibilities of those carrying such anomalies are concerned, Islamic scholars have discussed the issue and resolved:

a. Allah bestows the gender, and the principle of marriage, and the resulting method of reproduction is a sign created by Allah that serves a purpose and gives assurance of Allah's power and wisdom.
b. Ambiguity between the male and female sexes is considered a disorder and a test from Allah. A suitable solution should be found in this regard by the medical professionals specializing in this field.
c. Changing or modifying clear male or female sexes to adopt self-perceived sexes is seen as disobedience to Allah, a distortion of nature, a change of Allah's creation, a violation of rights and responsibilities and just following lusts. It is considered fatal for the survival of humanity and the protection of the race.

At the outset, let us make it clear that the terms **"gender"** and **"transgender"** are very misleading. They have nothing to do with birth defects. The rulings of Allah

(SWT) regarding the determination of sex at the time of birth are very clear; *"To Allah belongs the kingdom of the heavens and the earth. He creates what He wills. He bestows female (offspring) upon whom He wills and bestows male (offspring) upon whom He wills. Or He bestows both males and females, and He renders barren whom He wills. Verily, He is all-knowing and can do all things*[11]*."* The Quran also emphasizes two sexes i.e. male and female in every creature. It is stated in Surah Al-Najam that He created the pair of male and female and about gender orientation it is mentioned as *"O people! Fear your Lord Who created you from a single soul and created from it its wife, and from them spread many men and women (in the world)*[12]*"* .

Disorders of Sex Development (DSD)

Sometimes, under the influence of certain factors during pregnancy or changes in genetic material (DNA), changes or mutations in the sex cells (i.e., female egg or male sperm), ambiguity in the sex identity of the child occurs. It has been given the names **Khantha**, ***hijara***, **eunuch**, or **intersex**. Such abnormalities are named as "Disorders of Sex Development" (DSD). They may appear in the external anatomical structure alter physiology or show some metabolic disorder.

Birth defects may occur in any part of the body including internal and external genital organs. Each defect is a disease and a trial. Such individuals are not separated from their families; they enjoy all the rights that are considered the rights of any human being. Correcting these defects or diseases is attempted, and society benefits from the talents of these individuals. Special consideration is given to their education and training. Ambiguity in external genitalia at birth is a disability found in 0.017% of the population[10].

Gender ethics examines how gender operates within moral beliefs and practices, aiming to address issues like discrimination, inequality, and oppression while promoting fairness, equality, and the rights of all genders. Management of patients with disorders of sex development (DSD) is undoubtedly challenging. Key tasks that, over the past few decades, have caused much controversy among patients, their families, and clinicians involved in their care include (1) gender assignment, (2) gender-affirming surgery, and (3) disclosure of information. In this context, due consideration must be given to cultural and religious factors. Culture plays an important role in the gender determination of patients with atypical somatic sex development[13]. Cultural influences may contribute to patients with DSD and their families' acceptance or rejection of their assigned gender, to the psychosexual development of the patient, and to medical management. There are reports from several countries such as Saudi Arabia[14], (Taha,1994), Turkey (Özbey, Darendeliler, Kayserili, Korkmazlar, & Salman, 2004), and Egypt (Dessouky, 2001) that indicate increased rates of assignment to the male gender regardless of karyotype, gonadal makeup, and fertility potential because the male gender has a dominant role in society and is thus the preferred sex[15]. In India and Pakistan, DSD children are more likely to be raised as males simply to ensure a better future for these children when they grow up[16]. Even if they are infertile as males, they are more likely than infertile females to achieve economic independence.

Nevertheless, not all Muslim countries have a preference for the male sex. The majority of patients with DSD in Malaysia are Muslims as it is a predominantly Muslim country. Kuhnle and Krahl (2002) reported that, in their experience of working in the largest children's hospital in Malaysia, "it was never difficult to convince a Muslim family to assign a severely virilized girl or an under virilized boy to the female gender. This was not the case for Chinese and Indian families, who on several occasions took off with their ambiguously born child when female sex assignment (or reassignment) was suggested[17]." This could be due to the fact that in Malaysia, Malay Muslim women are entitled to inherit and control their own money, and with divorce, or when widowed, a woman's fortune remains under her control, enabling her to be independent.

Biological predispositions and clinical outcome of DSD

A number of disorders related to external and internal sex organ development are encountered in medical practice. These disorders can also be differentiated on the basis of the severity of their presentation at birth and afterward. A few most commonly encountered are[18]:

1. True hermaphrodites: the baby is born with sex organs of both; it happens during embryogenesis. Doctors get chromosomal analysis to know the genetic makeup of the baby and then a multidisciplinary team of doctors managed by hormonal therapy or surgery to help the baby achieve a near-normal sexual organ to spend a near-normal life.
2. Pure gonadal dysgenesis; the internal sex organs are absent or not formed properly.
3. Mix gonadal dysgenesis; internal genetic organs are present only on one side. Congenital adrenal hyperplasia; a gland present on top of the kidney may produce different hormones in deficient quantity or excess leading to ambiguous genitalia; it has many treatable types.
4. Different syndromes; sex chromosomal defects may be accompanied by defects of eye, heart, brain, or psychological nature, treated by pediatricians.

Clinical diagnosis of the child with ambiguous Genitalia

A simple examination of genitalia reveals three openings i.e., urethra, vagina, and anus, the baby is labeled as female, and if only urethra and anal openings are found baby is labeled as male before detailed investigations[19].

- USG for internal sex organs
- Chromosomal analysis
- Endocrine evaluation
- Serum electrolytes, blood sugar levels,
- Adrenal function evaluation

And more investigations can be used to evaluate the nature of the disease

and definitive therapy or more than one modality of therapy can be used.

Management: A multidisciplinary approach to the management of these patients yields better outcomes. The team members are selected based on clinical and biological diagnosis and may include a pediatric endocrinologist, Pediatric Surgeon, Pediatric psychologist /psychiatrist, Geneticist, Gynecologist/endocrinologist,
Surgeon/urologist, and administrator of health facility. If this team of treating physicians is dedicated and God-fearing professionals, there is no reason why these patients cannot be treated in time with grace, dignity, and without stigmatization. A Muslim doctor can better understand that these are special persons; to treat them and to cater to the psychological needs of patients and their family families is a crucial component of management. All efforts should be directed to make these individuals useful members of society and should be assimilated as part of society. After all, they are the creation of Allah and bear similar rights as other human beings without any discrimination[20].

Gender and Transgender

The word “gender” was generally spoken and understood synonymously with the word “sex”. The use of the word in another sense began in 1955, but those who introduced the word said that “gender” was not a biological sex. That is, if someone is born male or female, they cannot be called “male or female” based only on their appearance, social meaning, or traditional role. Instead, what a person considers himself to be internally is his/her “gender.” The feeling of the person is superior to appearance and the state that person feels about himself. A biological male (biological man) may think of himself as a "female" and can play the role of a woman. Similarly, a biological woman (biological female) can identify herself as a man and thus can play the role of a man. Every individual can choose the role they want to play in society and can select their own identity and assign gender. These thoughts stem from the ideas of the progressive wave of feminism. Thus, "gender" and "sex" are different terms from each other. Sex is the identity given by the creator of the universe. In contrast, gender is the individual's own feelings about his sexual orientation. This feeling is not necessarily permanent, may change over the period and some other day might call himself neither male nor female or neither of these or both of these, and therefore about a hundred types of genders have been discovered so far[21].

Now it is being referred to as the fourth wave of 'feminism.' It began with empowering women to participate in the economic race. They were encouraged to participate in the workforce alongside men. 'Gender' gives each individual the right to express the role they identify with. One's social behavior and even sexual relations can be determined according to one's gender.' For instance, if a 'woman' identifies herself as a 'man' and engages in a relationship with another 'woman,' there is no harm in such a relationship. Similarly, if a born 'man' identifies himself as a 'woman' and establishes a relationship with a man because he is comfortable with this role, it may be considered valid. Such concepts further evolved in 1974, when the term '***transgender***' was coined. The prefix 'trans' is used to denote movement from one place

or position to another, as in 'transport,' 'transfer,' or 'translate.' In the dictionary, a 'transgender' person is defined as someone who recognizes that their gender identity differs from the one assigned to them at birth and now desires to move to a self-perceived identity.

Under the banner of ' fundamental human rights,' international organizations have stepped forward to protect the right of individuals to act in accordance with their self-perceived gender identity. Such individuals may seek recognition and respect from society. It is desirable that medical professionals assist these individuals in achieving their desires, offering support through hormone therapy and surgery. Consequently, a 'biological woman' can modify her appearance, physical structure, and overall presentation to resemble that of a man, and vice versa.

It is widely understood that altering external bodily appearance does not constitute a fundamental change. Each creation of the Creator is unique. Beyond differences in genetic makeup between women and men, every cell in their bodies is fundamentally distinct and unique. Their anatomy, physiology, physical strength, mental performance, thought processes, and emotions differ from each other. Even if bodily appearance is altered through hormones and surgery, the inherent nature of an individual cannot be transformed[22].

Gender dysphoria was initially considered a psychological disorder; however, it has since been removed from the list of diseases and declared a basic human right, with international organizations striving to gain global recognition for this 'right' as 'legal.' The term ***'Transgender'*** is an umbrella term encompassing various gender identities. A few of these are listed below[23]:

Pangender: Embracing all possible 'genders' simultaneously.

Polygender: Identifying with multiple 'genders' concurrently or at different times.

Panromantic: Experiencing sexual attraction to individuals regardless of their gender.

Gender Fluid: An individual who does not identify with a fixed 'gender'; their gender may alter over time, sometimes male, sometimes female, sometimes neither, sometimes both.

Genderqueer: Someone who has not yet determined their 'gender,' whether male, female, neither, or both.

Straight: When a person is attracted to the opposite sex, expressing a normative sexual preference (a man attracted to a woman, and vice versa).

Lesbian/Gay, Homosexuals: Referring to a woman attracted to another woman and forming a relationship with her or a man attracted to another man and forming a relationship with him.

Agender: An individual who does not identify with any specific gender.

Thus, the term "transgender" encompasses various aspects of sexual identity. This term was initially used in Pakistan to denote "Neutrality," presumably in an effort to make "transgender" more socially acceptable. Even in the media, *Hijdha* individuals are referred to as "trans." or “transgender”.

"Transgender” undergo hormone therapy for sex reassignment and may also opt for lower

body surgery to align their physical appearance with their desired gender. This surgical procedure is commonly referred to as "Bottom Surgery" or "Gender Reassignment Surgery."

Factors influencing sexual orientation include:

1. Genes:

Allah says: *Indeed, your Lord is Allah Who created the heavens and the earth in six Days,[22] then established Himself on the Throne. He makes the day and night overlap in rapid succession. He created the sun, the moon, and the stars—all subjected to His command. The creation and the command belong to Him ˹alone˺. Blessed is Allah—Lord of all worlds!* [23]. The determination of the sex depends upon the genetic makeup of a person, which is the unique attributes of each individual assigned by the Lord of the universe. *And do not wish for that by which Allah has made some of you exceed others. For men is a share of what they have earned, and for women is a share of what they have earned. And ask Allah for his bounty. Indeed, Allah is ever, of all things, Knowing*[24]. Humans designed so far could not be able to change the genetic makeup of human beings which is considered a possibility at least theoretically but even before it is said in the Quran if they attempt to do;

"*And I will mislead them, and I will arouse in them [sinful] desires, and I will command them so they will slit the ears of cattle, and I will command them so they will change the creation of Allah." And whoever takes Satan as an ally instead of Allah has certainly sustained a clear loss*[25]*".*

2. Desire and Self-Perception:

Desire to align physical characteristics with a person's self-perception relating to quality of life are a relatively new phenomenon. These individuals usually claim greater emotional and social well-being, although physical and sexual outcomes can be more nuanced. If one follows his every justified or unjustified desire it would lead to unending wishes and life becomes miserable. Pursuing one's desires and asserting one's will can be considered a form of idolatry (Shirk)[26]. The Qur'an warns in several instances that selfishness and following one's own desires are significant obstacles to achieving high spiritual status. "Then, O Prophet, we have placed you on a certain law of religion, so follow it and do not follow the wishes of those who do not know the truth[27]." In another verse, it states: *"And if We had willed, we could have elevated him thereby, but he adhered [instead] to the earth and followed his own desire. So, his example is like that of the dog: if you chase him, he pants, or if you leave him, he [still] pants. That is the example of the people who denied Our signs. So, relate the stories that perhaps they will give thought*[28]. "Tell me, can you take responsibility for a person who has made his selfish desire his god?"[29].

3. The Environment:

Human behavior is greatly influenced by the environment where he was groomed and lived. People share feelings and are greatly influenced by their surroundings. Social pressure is arguably the most important factor in determining behavioral adjustments and shaping one's character. It is paramount that one must follow divine guidelines rather than accept societal influences[30]. On the Day of Reckoning, when their errors and ultimate

fate become evident, individuals will challenge one another. The Quran recounts their disputes in several instances. e.g. As-S'affat, it is stated: *"They will turn to each other and question one another. The subordinates will say to their elders, 'You were the ones who used to come to us from the right side, beautify every evil for us, and discourage us from the truth.' They will respond, 'No, but you yourselves were not believers, and we had no authority over you. The fact is that you yourselves were disbelievers. Now the word of our Lord has been justified against us, and we all have to taste this. So, we led you astray because we ourselves were astray*[31]*."*

Psycho-social effects of DSDs

The child's birth is always celebrated and a moment of joy for the family and friends provided the child is healthy and well. In the case of childbirth with ambiguous genitalia or with Disorder of Sex Determination (DSD), the pleasures are replaced with many sighs and whispers. This condition occurs in 18 children out of 100000 live births. Studies show that parents of DSDs might develop psychological problems. If it is not assessed in time and treated, then there is a fear that parents might make wrong decisions regarding themselves or their children.

Clinicians who see cases of DSD have a responsibility to convey this news to the parents in a professional manner. Meanwhile, if the parents are emotional after hearing this painful news, then adequate time and consolation should be given for expression. As a Muslim Physician, it is important to provide guidance with Shari'ah principles regarding heterosexual and intersex individuals. Children with DSD must also be assessed regularly for their mental health. Their psychological reactions may vary with age and understanding. Repeated physical examinations during diagnosis and treatment can have long-lasting psychological effects on children. These examinations are remembered by the children as traumatic memories. Sometimes they might develop negative perceptions regarding their body (negative body image). A trained physician can always manage the negative impacts of DSD and encourage parents to inform their children about the nature of the examination. Before the examination, the doctor should also tell the child in simple words about the need and procedure of the physical examination. Exposure must be minimal with limited nursing staff. If doctors deal with these cases of DSDs professionally, then they can help these children to live in society with dignity and confidence. They need continuous psychological support and counseling for any emerging situation and prior to any medical intervention[32].

Gender Dysphoria:

Gender dysphoria is a condition characterized by persistent uneasiness or anguish due to a precepted mismatch between an individual's assigned sex at birth and their experienced gender identity. Gender dysphoria is considered a synonym for transgender. It was initially considered a psychological disorder; however, it has since been removed from the list of diseases and declared a basic human right, with international organizations striving to gain global recognition for this 'right' as 'legal.'

From an Islamic viewpoint, gender dysphoria, the incongruence between one's assigned sex and gender identity, is viewed as a condition that deviates from the natural order (*fitrah*) established by Almighty Allah. One might have such feelings and may not be considered sinful, till attempts are made to alter natural orders (*fitrah*). Islamic teachings emphasize the importance of addressing and controlling such feelings to align with religious values and the natural order. Islamic theology emphasizes on *Shari'ah*-based way of life and lifestyle which facilitates the well-being of the individual and society. This lifestyle focuses on *fitrah* of human beings and restricts deviation of whatever kind from the natural order. Desires of human beings including having the gender of one's own yearning is one of several others which one might dream of and not all dreams actualize in life. In *Shari'ah* it might be the temptation of Satan or psychological distress, social difficulties, and emotional struggles or ideation but not allowed in Islamic injunctions[33].

وَلَأُضِلَّنَّهُمْ وَلَأُمَنِّيَنَّهُمْ وَلَءَامُرَنَّهُمْ فَلَيُبَتِّكُنَّ ءَاذَانَ ٱلْأَنْعَٰمِ وَلَءَامُرَنَّهُمْ فَلَيُغَيِّرُنَّ خَلْقَ ٱللَّهِ ۚ وَمَن يَتَّخِذِ ٱلشَّيْطَٰنَ وَلِيًّا مِّن دُونِ ٱللَّهِ فَقَدْ خَسِرَ خُسْرَانًا مُّبِينًا

"I will certainly mislead them and delude them with empty hopes. Also, I will order them and they will slit the ears of cattle[1] and alter Allah's creation." And whoever takes Satan as a guardian instead of Allah has certainly suffered a tremendous loss[34]". What to say about the reassignment of gender of man to women and vice versa even imitating each other with regard to clothing that is unique to one's sex, is strongly prohibited in Islamic injunctions. It emphatically forbids that, to such an extent that the Prophet (PBUH) cursed those who go against the human nature with which Allah created them. The Prophet (PBUH) said, "cursed men who imitate women and women who imitate men, and he said: "Throw them out of your houses." (Sahih Bukhari # 5885). Many other hadiths further emphasize this: *The Prophet (PBUH) cursed the man who wears women's clothing and the woman who wears men's clothing*[35]". (Sunan Abu Dawud # 4098). Narrated by `Aishah (may Allah be pleased with her) said: The Prophet of Allah (PBUH) "cursed masculinized women[36]".

The Human Rights Declaration and LGBTQ

LGBTQ stands for Lesbian, Gay, Bisexual, Transgender, and Queer (or Questioning). The "Q" can also represent "questioning," referring to individuals who are still exploring their sexual orientation or gender identity. The basic concept of human rights is that all human beings can live with freedom, security, dignity, and equal treatment. These rights should be enjoyed by all without any discrimination based on religious, ethnic, linguistic, geographical, age, sex, economic, or social status. Human rights are inherent to every individual and cannot be taken away from anyone without any reason. Contemporary human rights concepts, specifications, and treaties have been formulated by the United Nations. After its establishment in 1945, the United Nations formulated basic principles in its constitution (UN Charter 1946) based on the concepts of human rights presented in the past few centuries. United Nations passed many resolutions related to positive protective rights, and finally, on December

10, 1948, the Universal Declaration of Human Rights (UDHR) came into force. The Universal Declaration of Human Rights (UDHR 1948) covers economic, social, cultural, and political rights along with the fundamental rights to life, justice, and equality of the individual through its 30 articles. Accordingly, every individual has the right to be equal with all, no one should be considered superior or inferior to anyone. Everyone has the right to protection for his life and property and any kind of coercion or violence should not be allowed against him. Similarly, the rights to belief and religion, expression, organization and association, travel and migration, marriage, and establishing a family have been recognized. Education, participation in government, employment, comfort and rest, privacy, and non-interference in private life are also considered fundamental rights. The rights, which the UN Charter and the UDHR, have declared mandatory for all men and women all over the world, have been made part of their state constitutions and laws by the member states of the United Nations[37].

Since its founding in 1945, the United Nations political bodies had not discussed LGBTQ rights (regarding equality regardless of sexual orientation or gender identity) until September 1995, when sexual orientation became a topic of debate in the negotiations on the Draft of the 1995 Beijing Platform for Action at the 4th World Conference on Women, where it was introduced as one of the women's right. While, declaring it an inclination or instinct, homosexuality was declared as a behavior instead of a practice or action, hence the term ‘sexual orientation’ was coined. Homosexuals were divided into four groups; Gays, Lesbians, Bisexuals, and Transsexuals (inclusive of transgender), grouped under the abbreviation of LGBTQ with their rights as LGBTQ rights. Later the initial Q was added for Queer meaning group and was added for Intersex persons. Perverted orientations and desires of these communities were advocated as natural inclinations and orientations, and movements for their recognition and promotion were initiated around the globe, succeeding the full support of the UN and its related international agencies. Later, resolutions, declarations, and statements in support of sexual orientation, gender identity, and LGBT rights were presented and adopted at various forums under the United Nations General Assembly and the Human Rights Council. Some of the important resolutions were passed in 2011, 2014, and 2015. In 2015, 12 international organizations of the United Nations—UNDP, UNAIDS, OHCHR, ILO, UNODC, UNICEF, UNHCR, UNFPA, UNESCO, WFP, UN Women, and WHO—adopted a joint resolution to end discrimination and violence against LGBT persons, calling for an end to violence and discrimination against lesbian, gay, bisexual, transgender and intersex people. Ninety-six member-states of the United Nations have sponsored the declaration in support of LGBT rights in the United Nations General Assembly (UNGA), in the United Nations Human Rights Council (UNHRC), or both. All governments were asked to do more for intersex people and abuses of all kinds should be prevented[38].

Among the first to voice opposition to the declaration, in early December 2008, was the Holy See's Permanent Observer at the United Nations, Archbishop Celestino Migliore, who claimed that the declaration could be used to force countries to recognize same-sex marriage. The OIC-led statement rejected the idea that sexual orientation is a matter of genetic coding and claimed that the declaration threatened to undermine the international framework of human rights, adding that the statement "delves into matters which fall essentially within the domestic jurisdiction of states" and could lead to "the social normalization, and possibly the legitimization, of many deplorable acts including pedophilia". In 2011, fifty-four countries remained as continued sponsors of the statement opposing LGBT rights. UN passed a resolution to finally recognize LGBT rights as human rights in the Human Rights Council in 2011. Further to that UNHCR immediately released a report detailing the violation of the rights of LGBT people in different countries of the world, hate crimes against them, discrimination, and legal punishments for homosexuals. Based on this report, the UN urged all member states to enact laws to protect and guarantee LGBTQ rights. Resultantly it was legally required to promote sexual orientation, and gender identity on self-perceived feelings, and promote homosexuality positively instead of a prohibited or deviant behavior, to criticize laws against homosexuality and to demand for its repeal, to promote and protect gay pride parades and same-sex marriages[39].

After the recognition of LGBT human rights, efforts are underway to legislate on many issues related to same-sex marriage, including having children through adoption or surrogacy, and laws relating to the provision of facilities for: reproduction through IVF; hormone replacement therapies; facilities for sex and reproductive reassignment surgery etc. Citing the same reasons, the demand to formulate laws for non-discrimination in various spheres of life, such as education, employment, medical facilities, military services, and laws against discrimination or harassment was stressed by various agencies including UNO.

In many countries legalization of same-sex relationships preceded the movement for same-sex marriage. The legal status of same-sex marriage has changed in recent years in numerous jurisdictions around the world. So, it has been implemented in 32 countries, including Great Britain, Wales, America, Australia, Germany, France, New Zealand, Finland, Malta, Canada, Spain, Denmark, and Brazil fully or with partial legal protection. While a further 34 countries provide legal protection to same-sex couples. However, homosexuality is still illegal in about 70 countries across Asia, Africa, and the Middle East. In India through a decision of the Supreme Court, homosexuality was given legal protection in 2019, it is still not widely accepted[40].

Countries where the legal punishment for homosexuality is the death penalty include Iran, Sudan, Saudi Arabia, Yemen, Somalia, parts of Nigeria, Syria, and Iraq. Although in Pakistan, Afghanistan, Mauritania, Qatar, and the United Arab Emirates, the death penalty can also be given under Shari’ah law, it has never been implemented so far.

The UN has repeatedly instructed all countries to "repeal existing laws against homosexuality and enact legislation and policy measures in favor of homosexuality and same-sex marriage. International Human Rights agencies like Human Rights Watch and Amnesty International are working for the recognition of the lesbian, gay, bisexual, and transgender people's full set of human rights. Along with the legal initiatives these international agencies take initiatives in different countries to arrange Gay Pride Parades to assess and gain support of homosexuals in those countries[41].

These international efforts are showing results in laws being enacted in these lines around the globe. In Pakistan with the dire need for legislation for the protection of the rights of intersex persons, a law was enacted in 2018, with the title "Transgender Person (Protection of Rights) Act 2018". The Act, along with intersex persons, expanded the term transgender, providing legal protection for sexual or gender orientation, and gender expression based on self-perceived gender identity, hence an attempt was made to open the way for LGBT rights, and same-sex marriages while legislating in the name of intersex persons.

Under the Constitution of Pakistan, 1973, the foremost identity of the Islamic Republic of Pakistan is Islam. The sovereignty of the state belongs to Almighty Allah, and the laws are driven by the Quran and Sunnah should prevail in the country and no legislation repugnant to the Quran and Sunnah can be done according to the Constitution of Pakistan. It is, therefore, incumbent upon the Majlis e Shura (parliament and senate) of Pakistan not to pass any kind of law related to homosexuality as part of our country's laws as well as to protect the laws that criminalize same-sex activities[42].

Islamic Perspective

The question arises as to why Muslims and other divine religion followers cannot approve LGBT or similar movements' notion[43]. Islamic teaching defines the role of the male and female assigning responsibilities and rights for each gender while describing both males and females are decedents of Adam.

يَٰٓأَيُّهَا ٱلنَّاسُ ٱتَّقُواْ رَبَّكُمُ ٱلَّذِى خَلَقَكُم مِّن نَّفْسٍ وَٰحِدَةٍ وَخَلَقَ مِنْهَا زَوْجَهَا وَبَثَّ مِنْهُمَا رِجَالًا كَثِيرًا وَنِسَآءً ۚ وَٱتَّقُواْ ٱللَّهَ ٱلَّذِى تَسَآءَلُونَ بِهِۦ وَٱلْأَرْحَامَ ۚ إِنَّ ٱللَّهَ كَانَ عَلَيْكُمْ رَقِيبًا

"O humanity! Be mindful of your Lord Who created you from a single soul, and from it, He created its mate,[1] and through both, He spread countless men and women. And be mindful of Allah—in Whose Name you appeal to one another—and ˹honour˺ family ties. Surely Allah is ever Watchful over you[44].

وَٱلْمُطَلَّقَٰتُ يَتَرَبَّصْنَ بِأَنفُسِهِنَّ ثَلَٰثَةَ قُرُوٓءٍ ۚ وَلَا يَحِلُّ لَهُنَّ أَن يَكْتُمْنَ مَا خَلَقَ ٱللَّهُ فِىٓ أَرْحَامِهِنَّ إِن كُنَّ يُؤْمِنَّ بِٱللَّهِ وَٱلْيَوْمِ ٱلْءَاخِرِ ۚ وَبُعُولَتُهُنَّ أَحَقُّ بِرَدِّهِنَّ فِى ذَٰلِكَ إِنْ أَرَادُوٓاْ إِصْلَٰحًا ۚ وَلَهُنَّ مِثْلُ ٱلَّذِى عَلَيْهِنَّ بِٱلْمَعْرُوفِ ۚ وَلِلرِّجَالِ عَلَيْهِنَّ دَرَجَةٌ ۗ وَٱللَّهُ عَزِيزٌ حَكِيمٌ ٢٢٨

Divorced women must wait three monthly cycles before they can re-marry. It is not lawful for them to conceal what Allah has created in their wombs if they truly believe in Allah and the Last Day. And their husbands reserve the right to take them back within that period if they desire reconciliation. Women have rights similar to those of men equitably, although men have a

degree of responsibility above them. And Allah is Almighty, All-Wise[45].

Moreover, inheritance and leftover are clearly defined in Islamic Shari'ah and lay down the share of male and female offsprings accordingly:

لِّلرِّجَالِ نَصِيبٌ مِّمَّا تَرَكَ ٱلْوَٰلِدَانِ وَٱلْأَقْرَبُونَ وَلِلنِّسَآءِ نَصِيبٌ مِّمَّا تَرَكَ ٱلْوَٰلِدَانِ وَٱلْأَقْرَبُونَ مِمَّا قَلَّ مِنْهُ أَوْ كَثُرَ ۚ نَصِيبًا مَّفْرُوضًا

For men there is a share in what their parents and close relatives leave, and for women there is a share in what their parents and close relatives leave—whether it is little or much. ˹These are˺ obligatory shares[46].

The share of the man is more than the share of the woman and this logically defined as Muslim women is not responsible for their children's livelihood rather it is the responsibility of the man to take care of the finances of the wife. Muslim man has greater socio-economic responsibilities compared to Muslim women in Islamic society.

ٱلرِّجَالُ قَوَّٰمُونَ عَلَى ٱلنِّسَآءِ بِمَا فَضَّلَ ٱللَّهُ بَعْضَهُمْ عَلَىٰ بَعْضٍ وَبِمَآ أَنفَقُوا۟ مِنْ أَمْوَٰلِهِمْ ۚ فَٱلصَّٰلِحَٰتُ قَٰنِتَٰتٌ حَٰفِظَٰتٌ لِّلْغَيْبِ بِمَا حَفِظَ ٱللَّهُ ۚ وَٱلَّٰتِى تَخَافُونَ نُشُوزَهُنَّ فَعِظُوهُنَّ وَٱهْجُرُوهُنَّ فِى ٱلْمَضَاجِعِ وَٱضْرِبُوهُنَّ ۖ فَإِنْ أَطَعْنَكُمْ فَلَا تَبْغُوا۟ عَلَيْهِنَّ سَبِيلًا ۗ إِنَّ ٱللَّهَ كَانَ عَلِيًّا كَبِيرًا

Men are in charge of women by [right of] what Allah has given one over the other and what they spend [for maintenance] from their wealth. So righteous women are devoutly obedient, guarding in [the husband's] absence what Allah would have them guard. But those [wives] from whom you fear arrogance - [first] advise them; [then if they persist], forsake them in bed; and [finally], strike them [lightly].[4] But if they obey you [once more], seek no means against them. Indeed, Allāh is ever Exalted and Grand[47].

Divorced women remain in waiting for three periods, and it is not lawful for them to conceal what Allah has created in their wombs if they believe in Allah and the Last Day. And their husbands have more right to take them back in this [period] if they want reconciliation. And due to the wives is similar to what is expected of them, according to what is reasonable. But the men have a degree over them [in responsibility and authority]. And Allah is Exalted in Might and Wise"[48].

Changing ones' gender or gender reassignment is prohibited in Islam[49]. One cannot interfere with the normal anatomical and physiological characteristic until medically indicated and justified. Both male and female are the creation of Allah and one cannot change the gender on the pretext of misfit fortune. Both male and female are respectable to Allah and those who are closer to abide His commandment.

مَنْ عَمِلَ صَالِحًا مِّن ذَكَرٍ أَوْ أُنثَىٰ وَهُوَ مُؤْمِنٌ فَلَنُحْيِيَنَّهُۥ حَيَوٰةً طَيِّبَةً ۖ وَلَنَجْزِيَنَّهُمْ أَجْرَهُم بِأَحْسَنِ مَا كَانُوا۟ يَعْمَلُونَ ﴿16:97﴾

"Whosoever acts righteously - whether a man or a woman - and embraces belief, We will surely grant him a good life; and will surely grant such persons their reward according to the best of their deeds"[50].

The creation of Almighty Allah does not follow the wishes of the people, as said in the Quran.

لِّلَّهِ مُلْكُ ٱلسَّمَٰوَٰتِ وَٱلْأَرْضِ ۚ يَخْلُقُ مَا يَشَآءُ ۚ يَهَبُ لِمَن يَشَآءُ إِنَٰثًا وَيَهَبُ لِمَن يَشَآءُ ٱلذُّكُورَ أَوْ يُزَوِّجُهُمْ ذُكْرَانًا وَإِنَٰثًا ۖ وَيَجْعَلُ مَن يَشَآءُ عَقِيمًا ۚ إِنَّهُۥ عَلِيمٌ قَدِيرٌ ﴿٥٠﴾ وَمَا كَانَ

لِبَشَرٍ أَن يُكَلِّمَهُ ٱللَّهُ إِلَّا وَحْيًا أَوْ مِن وَرَآئِ حِجَابٍ أَوْ يُرْسِلَ رَسُولًا فَيُوحِيَ بِإِذْنِهِۦ مَا يَشَآءُ ۚ إِنَّهُۥ عَلِيٌّ حَكِيمٌ

"To Allah belongs the dominion of the heavens and the earth; He creates what He wills. He gives to whom He wills female [children], and He gives to whom He wills males. Or He makes them [both] males and females, and He renders whom He wills barren. Indeed, He is Knowing and Competent. And it is not for any human being that Allah should speak to him except by revelation or from behind a partition or that He sends a messenger [i.e., angel] to reveal, by His permission, what He wills. Indeed, He is Most High and Wise"[51].

There is no doubt the medical sciences have remarkably contributed in improving quality of life and eliminate suffering of those having congenital or acquired deformities[52]. Islamic teaching strongly vouches medical services and the scholars of the text declared it a *fard Kufaya*. However, seeking reasons and citing irrelevant pretexts remained the norms in the name of the furtherance of humanity. Sex reassignment remained a hot topic among philosophers and medics. Islam does not allow such intervention and states against nature. These are considered the temptations of Satan:

وَلَأُضِلَّنَّهُمْ وَلَأُمَنِّيَنَّهُمْ وَلَـَٔامُرَنَّهُمْ فَلَيُبَتِّكُنَّ ءَاذَانَ ٱلْأَنْعَـٰمِ وَلَـَٔامُرَنَّهُمْ فَلَيُغَيِّرُنَّ خَلْقَ ٱللَّهِ ۚ وَمَن يَتَّخِذِ ٱلشَّيْطَـٰنَ وَلِيًّا مِّن دُونِ ٱللَّهِ فَقَدْ خَسِرَ خُسْرَانًا مُّبِينًا ١١٩

"And I will mislead them, and I will arouse in them [sinful] desires, and I will command them so they will slit the ears of cattle, and I will command them so they will change the creation of Allah." And whoever takes Satan as an ally instead of Allah has certainly sustained a clear loss[53]".

Islamic teaching even specifies a code of social ethics for gender encounters and asks both the sexes to remain in their own domains but when they do interact must abide by the laid down principles of interaction with the opposite sex.

وَقُل لِّلْمُؤْمِنَـٰتِ يَغْضُضْنَ مِنْ أَبْصَـٰرِهِنَّ وَيَحْفَظْنَ فُرُوجَهُنَّ وَلَا يُبْدِينَ زِينَتَهُنَّ إِلَّا مَا ظَهَرَ مِنْهَا ۖ وَلْيَضْرِبْنَ بِخُمُرِهِنَّ عَلَىٰ جُيُوبِهِنَّ ۖ وَلَا يُبْدِينَ زِينَتَهُنَّ إِلَّا لِبُعُولَتِهِنَّ أَوْ ءَابَآئِهِنَّ أَوْ ءَابَآءِ بُعُولَتِهِنَّ أَوْ أَبْنَآئِهِنَّ أَوْ أَبْنَآءِ بُعُولَتِهِنَّ أَوْ إِخْوَٰنِهِنَّ أَوْ بَنِىٓ إِخْوَٰنِهِنَّ أَوْ بَنِىٓ أَخَوَٰتِهِنَّ أَوْ نِسَآئِهِنَّ أَوْ مَا مَلَكَتْ أَيْمَـٰنُهُنَّ أَوِ ٱلتَّـٰبِعِينَ غَيْرِ أُو۟لِى ٱلْإِرْبَةِ مِنَ ٱلرِّجَالِ أَوِ ٱلطِّفْلِ ٱلَّذِينَ لَمْ يَظْهَرُوا۟ عَلَىٰ عَوْرَٰتِ ٱلنِّسَآءِ ۖ وَلَا يَضْرِبْنَ بِأَرْجُلِهِنَّ لِيُعْلَمَ مَا يُخْفِينَ مِن زِينَتِهِنَّ ۚ وَتُوبُوٓا۟ إِلَى ٱللَّهِ جَمِيعًا أَيُّهَ ٱلْمُؤْمِنُونَ لَعَلَّكُمْ تُفْلِحُونَ

"And tell the believing women to lower their gaze and guard their chastity, and not to reveal their adornments[1] except what normally appears.[2] Let them draw their veils over their chests, and not reveal their 'hidden' adornments[3] except to their husbands, their fathers, their fathers-in-law, their sons, their stepsons, their brothers, their brothers' sons or sisters' sons, their fellow women, those 'bondwomen' in their possession, male attendants with no desire, or children who are still unaware of women's nakedness. Let them not stomp their feet, drawing attention to their hidden adornments. Turn to Allah in repentance all together, O believers, so that you may be successful[54]".

Those who are unhappy with their biological sex, and want to change it must be reminded that everything they aspire is being bestowed by the Lord, according to the wishes aligning thought process of someone. The creator has molded the creation in the best way[55]:

ثُمَّ سَوَّاهُ وَنَفَخَ فِيهِ مِن رُّوحِهِۦ ۖ وَجَعَلَ لَكُمُ السَّمْعَ وَالْأَبْصَارَ وَالْأَفْـِٔدَةَ ۚ قَلِيلًا مَّا تَشْكُرُونَ

"But He fashioned him in due proportion, and breathed into him something of His spirit. And He gave You (the faculties of) hearing and sight and feeling (And understanding): Little thanks do ye give[56]".

A Muslim should be thankful to Allah for the best of the best creation being human being (man or woman) and be grateful, to Almighty for the honor awarded to him/her:

يَـٰٓأَيُّهَا ٱلنَّاسُ إِنَّا خَلَقْنَـٰكُم مِّن ذَكَرٍ وَأُنثَىٰ وَجَعَلْنَـٰكُمْ شُعُوبًا وَقَبَآئِلَ لِتَعَارَفُوٓا۟ ۚ إِنَّ أَكْرَمَكُمْ عِندَ ٱللَّهِ أَتْقَىٰكُمْ ۚ إِنَّ ٱللَّهَ عَلِيمٌ خَبِيرٌ

"O humanity! Indeed, We created you from a male and a female and made you into peoples and tribes so that you may get to know one another. Surely the most noble of you in the sight of Allah is the most righteous among you. Allah is truly All-Knowing, All-Aware[57]".

وَلَقَدْ كَرَّمْنَا بَنِىٓ ءَادَمَ وَحَمَلْنَـٰهُمْ فِى ٱلْبَرِّ وَٱلْبَحْرِ وَرَزَقْنَـٰهُم مِّنَ ٱلطَّيِّبَـٰتِ وَفَضَّلْنَـٰهُمْ عَلَىٰ كَثِيرٍ مِّمَّنْ خَلَقْنَا تَفْضِيلًا

"Indeed, We have dignified the children of Adam, carried them on land and sea, granted them good and lawful provisions, and privileged them far above many of Our creatures[58]. The Prophet (PBUH) said, *"Anyone who plays deceit does not belong to us[59]"*

Islam regulates and pays attention to the benefits generated by the life of humans in facing life on earth, one of them related to the lusts vented out of the designated human nature. This sort of sexual deviation is indeed strictly opposed by Islamic teaching since it violates the rules that have been set out in the Qur'an and Hadith as the guiding view for the Muslim people in undergoing their lives[60]. The compilation of Islamic Law has emphasized prohibitions related to LGBTQ, which is embedded in the terms of a legal marriage, namely a soulful and biological bond between male and female in accordance with the compilation of Islamic Law. In other words, said articles imply a prohibition against same-sex marriage. There is a verse that tells the story of the heinous practices committed by the people of Prophet Lut, as said in the Glorious Quran;

وَلُوطًا إِذْ قَالَ لِقَوْمِهِۦٓ أَتَأْتُونَ ٱلْفَـٰحِشَةَ مَا سَبَقَكُم بِهَا مِنْ أَحَدٍ مِّنَ ٱلْعَـٰلَمِينَ ﴿7:80﴾

إِنَّكُمْ لَتَأْتُونَ ٱلرِّجَالَ شَهْوَةً مِّن دُونِ ٱلنِّسَآءِ ۚ بَلْ أَنتُمْ قَوْمٌ مُّسْرِفُونَ ﴿7:81﴾ وَمَا كَانَ جَوَابَ قَوْمِهِۦٓ إِلَّآ أَن قَالُوٓا۟ أَخْرِجُوهُم مِّن قَرْيَتِكُمْ ۖ إِنَّهُمْ أُنَاسٌ يَتَطَهَّرُونَ ﴿7:82﴾ فَأَنجَيْنَـٰهُ وَأَهْلَهُۥٓ إِلَّا ٱمْرَأَتَهُۥ ۖ كَانَتْ مِنَ ٱلْغَـٰبِرِينَ ﴿7:83﴾ وَأَمْطَرْنَا عَلَيْهِم مَّطَرًا ۖ فَٱنظُرْ كَيْفَ كَانَ عَـٰقِبَةُ ٱلْمُجْرِمِينَ ﴿7:84﴾

(7:80) And remember when We sent Lot [as a Messenger to his people and he said to them: 'Do you realize you practice an indecency of which no other people in the world were guilty of before you? (7:81) You approach men lustfully in place of women. You are a people who exceed all bounds.' (7:82) Their only answer was: 'Banish them from your town. They are a people who pretend to be pure.' (7:83) Then We delivered Lot and his household save his wife who stayed behind, (7:84) and We let loose a shower [of stones] upon them, Observe, then, the end of the evil-doers[61].

In a hadith qudsi, "Allah curses those who commit the deeds of Lut's people, Allah curses those who commit the deeds of Lut's people, and Allah curses those who commit the deeds of Lut's people" as much as three times' Besides, fiqh scholars have also agreed to declare as unclean LGBT practices based on the Hadith of the Prophet (PBUH) as narrated from Abi Said: "In fulfilling his

rights and freedoms, everyone is obliged to adhere to the limitations set by laws intended to ensure recognition and respect towards the rights and freedoms of others, and to fulfill fair demands in accordance with considerations of morality, security, and public order in a democratic society[62]."

As such, the government is obliged to set the boundaries in the interest of the State. No human
rights of one person can be made to serve as a ground to disturb or rob other people's rights.
However, gay, lesbian, and transgender practices are not human nature, so it is not possible to realize their wish to legalize same-sex marriage. LGBT supporters always bring up equality of rights in society. Equality, however, is applied in the services provided to people with differences such as ethnicity, race, and so on[63]. A Muslim strongly believes that humans have been created in the best way and created the most excellent of moulds, bestows the finest body unlike other creatures. . Man was given the finest and noblest faculties, thoughts, knowledge, and intellect which no other creature has been blessed with.

لَقَدْ خَلَقْنَا ٱلْإِنسَـٰنَ فِىٓ أَحْسَنِ تَقْوِيمٍ ٤

"Indeed, We created humans in the best form[64]".

Transgender Persons (Protection of Rights) Act 2018 In Pakistan:

This law was passed by the National Assembly of Pakistan in May 2018 and was promptly implemented nationwide to safeguard the rights of 'transgender' individuals. Section 3(3) of the Act states:

"Every transgender person, as a citizen of Pakistan, has the right to register their gender based on their personal feelings once they reach the age of 10 years." (Right to register themselves according to their self-perceived gender identity)[65].

The law further clarified gender identity as "every individual having an inner feeling of being a man, a woman, both simultaneously, or neither. It can be in accordance with the sex assigned at birth, or vice versa." The law also gives other definitions of the term as a "transgender" person is someone who is:

Neutral, with mixed male and female characteristics or ambiguous gender identity at birth.

Eunuch is someone who was born as a normal boy but later became castrated or amputated.

The law grants them the right to register with NADRA (National Database and Registration Authority) and obtain identity cards reflecting their sexual orientation. Accordingly, this information will appear on their passport and other official documents. Medical institutions are also obligated to provide facilities according to their preferences, and the provision of these facilities cannot be denied or interrupted. Their share in inheritance will be determined based on the gender mentioned on their identity card. This practice is a clear violation of Islamic inheritance laws[66].

Another important thing is that a 'man' who identifies as a 'woman' will be able to marry a 'man,' just as a 'woman' who identifies as a 'man' can marry another woman. Thus, they have been given legal justification for homosexuality in the country. However, it's worth noting that under Section 377 of the Pakistan Penal Code (PPC), homosexuality is considered a crime and an offense. Therefore, it is expected that the next demand will be to abolish this law so that

there is no legal obstacle in the way of homosexuality[67].

Transgender Legislation and Islamic perspective

As said above Allah created man in the best form and honored him as His caliph. When a person becomes heedless of this honor and surrenders to the temptations of Satan, they deviate from their rightful path and risk becoming fuel for hell. It is said: "They deify the rebellious Satan who has been cursed by Allah. They obey Satan who said to Allah, 'I will take an appointed portion of your servants, mislead them, arouse in them false desires, and order them to slit the ears of cattle. I will also command them to change the divine structure.' Whoever takes Shaytan as their guardian instead of Allah has suffered a manifest loss. Shaytan makes promises and arouses false desires, but all of Shaytan's promises are nothing but deception. The dwelling of these people is hell, from which they will find no way of escape.[68]

The Holy Prophet Muhammad, peace be upon him, warned against imitating the devil's ways and said: *"Allah has cursed those men who imitate women and those women who imitate men. Four men incur Allah's anger in the morning, and Allah is angry with them in the evening."* When asked who they are, he replied: a. Men who impersonate women. b) Women who resemble men. c) Those who engage in unnatural acts with animals. d) Men who fulfill their desires with other men. (Sahih Bukhari)

Islam does not allow even the outward resemblance of men and women to each other. So, how can it permit legal protection for changes in one's natural anatomy or physiology and appearance, etc. Similar is the case such as castration, which results in the loss of male characteristics. Narrated by Hazrat Ibn Masoud: "We were on Jihad with the Prophet, and we did not have our wives with us. So, we asked the Messenger of Allah, 'Why should we not castrate ourselves?' He forbade us from doing so." (Sahih Bukhari)

Allah The Almighty has bestowed the best creation upon mankind, making them His caliphs on this earth, defining the rights and responsibilities of every member of society. For the fulfillment of sexual desires, marriage between a man and a woman is the only permissible form. To ensure the protection of modesty, purity, and chastity in society and to stabilize the institution of the family, Islam upholds all fundamental human rights based on goodness, mercy, justice, and kindness. However, following one's own desires cannot be equated with human rights[69].

Legalizing "transgender" rights deprives individuals of their dignity, erodes faith, and jeopardizes lives. Unjust surgery and altering the internal chemical structure of the body lead to numerous complications, causing mental distress and even suicidal tendencies. Life becomes a nightmare, and sexual immorality erodes human dignity. It results in a waste of wisdom, wealth, and capabilities.

All Muslim scholars share the same stance on sex reassignment surgery. Al-Azhar of Egypt, Dar Al Afta of Saudi Arabia, scholars of Malaysia and Qatar, and scholars of all schools of thought in Pakistan concur on this matter. Mufti Taqi Usmani states:

"It is important to note that changing the apparent sex of a person through surgery

or medication is considered tampering with Allah's creation, which is illegitimate and forbidden according to the Qur'an and Hadith. However, if a person has some feminine or masculine signs or a combination of both due to a defect, the symptoms of the opposite sex should be treated or operated upon to correct the defect. Shari'ah permits this transformation, so the person becomes a full man or a full woman. Shari'ah rulings will apply to the dominant sex or the sex that becomes dominant after correcting the defect, provided that it is not *khansamushkil*." In response to a question, Dr. Muhammad Ali Albar from the authentic Afta center under the Ministry of Awqaf of Qatar stated: "How can such an operation be allowed, which involves altering Allah's creation and deviating from instinct? Surgery can only be performed when the situation is uncertain. For example, if a person is biologically a woman but has male-like organs, then there is no issue with undergoing surgery to return to their natural and original sex. However, if the organs are normal and there is no doubt about it, then performing a sex change operation is not permissible. Psychological inclination alone cannot justify this operation; instead, the person should be advised to have faith and submit to Almighty Allah[70]."

Saudi scholars consider gender reassignment a criminal act, A Similar stance is also taken by scholars in Egypt[71].

Recommendations

- Quran and Sunnah education should be made mandatory to guide people's behavior and tendencies. Educational institutions, media outlets, and publications should create an organized and coherent environment in this regard.
- In cases of gender ambiguity at birth, a thorough evaluation of the child should be conducted. DNA tests, ultrasounds, and other tests can help determine a child's sex. All possible remedies should be available to correct any confusion, and the state should fully cooperate with the family.
- Children with sexual ambiguity should be treated like normal children within their families, providing them with all the necessary facilities for education, training, and development. Government measures are essential to eliminate the '*guru'* culture prevalent in society.
- The "Transgender" law should be completely withdrawn, and legislation can be enacted if necessary for intersex individuals.
- Castration should not be allowed for men with normal male characteristics unless it is deemed necessary for medical treatment.
- The use of the word 'gender' to replace 'sex' is incorrect, and the inappropriate use of this word should also be banned.

Conclusion

All Muslim countries must reject LGBTQ and all such like other movements and leadership of these countries must represent the true teachings of Islam. All efforts are made to educate societies and communities about the deleterious spiritual, social, environmental, and economic effects of such unnatural and illegal movements. Academia and educational institutions must devise the correct ecosystem in the institutions to combat such activities among youth through research and educational interventions. All

efforts are made to shape the minds of the people in line with the divine guidelines which are according to real human nature in all aspects. The legislators of the Muslim countries must be aware of the hidden agenda of LGBT and such like movements and must be equipped with the necessary knowledge regarding these activities.

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Example: Meltzer PS, Kallioniemi A, Trent JM. Chromosome alterations in human solid tumors. In: Vogelstein B, Kinzler KW, editors. The genetic basis of human cancer. New York: McGraw-Hill; 2002. p. 93-113.

h. Conference proceedings:
Example: Harnden P, Joffe JK, Jones WG, editors. Germ cell tumors V. Proceedings of the 5th Germ Cell Tumour Conference; 2001 Sep 13-15; Leeds, UK. New York: Springer; 2002.

i. Newspaper article:
Example: Tynan T. Medical improvements lower homicide rate: study sees drop in assault rate. The Washington Post. 2002 Aug 12;Sect. A:2 (col. 4).

j. Audiovisual material:
Example: Chason KW, Sallustio S. Hospital preparedness for bioterrorism [videocassette]. Secaucus (NJ): Network for Continuing Medical Education; 2002.

k. In press:
Example: Tian D, Araki H, Stahl E, Bergelson J, Kreitman M. Signature of balancing selection in Arabidopsis. ProcNatlAcadSci U S A.In press 2002.

l. Homepage/web site:
Example: Cancer-Pain.org [homepage on the Internet]. New York: Association of Cancer Online Resources, Inc.; c2000-01 [updated 2002 May 16; cited 2002 Jul 9]. Available from: http://www.cancer-pain.org/.

m. Qur'anic Verse:
Example: The Glorious Qur'an: Mariam: 19: 54.

n. *Hadith* from printed volume:
Example: IbnHajar al-'Asqalani. Fath al-Bari bi-SharhSahih al-Bukhari (The Creator's Inspiration in Interpreting the Verified Collection of al-Bukhari).Cairo, Egypt: Al-Bahiyyah Egyptian Press; 1930. Vol 11, p. 405.

o. *Hadith* from database:
Example: Sahih Al-Bukhari, Book 79, Kitaab al-Tibb, Chapter 1, Hadith 5354. [on-line] Available from: http://www.muhaddith.org.

11. Number the tables consecutively, and use Arabic numerals. Each table must be cited in sequence at an appropriate point in the text. Each table has to have a caption. These should be brief yet indicate closely the purpose or content of the table. Each column should be precisely defined by headings. Abbreviations and special designations should be explained in a footnote to the table.

12. The term figure includes all types of illustrations such as graphs, diagrams, photographs, flow charts, and line drawings. Figures must be cited consecutively in the text with Arabic numerals. If photographs of patients are used, either the subjects should not be identifiable or written permission to reproduce them should accompany the submission.

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