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English Articles

Balancing Tradition and Technology: Islam's Approach to Modern Healthcare Across All Ages

Mengimbangi Tradisi dan Teknologi: Pendekatan Islam terhadap Penjagaan Kesihatan Moden Merentasi Semua Zaman

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Abstract

Advancements in medical and healthcare fields have sparked discussions within the Islamic community, particularly regarding healthcare decisions spanning birth to death. Technologies like Artificial Intelligence (AI), Internet of Medical Things (IoMT), robotic-assisted surgery, organ transplantation, 3D bioprinting of organs, and genetically modified babies raise ethical dilemmas. Mental health issues among adolescents due to online content consumption and elderly care complexities add to these concerns. This discussion aims to address the ethical implications of modern healthcare technologies from an Islamic perspective. Supporting Islamic principles with medical progress is crucial, requiring the establishment of Bio-ethics committees guided by Islamic teachings and scholars' rulings. These committees would ensure ethical decision-making in healthcare, considering critical conditions under which these technologies can be ethically employed.

Keywords: Artificial Intelligence (AI), Bioethics, Deep Learning (DL), Health Care, Islam, Medicine.

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Abstrak

Kemajuan dalam bidang perubatan dan penjagaan kesihatan telah mencetuskan perbincangan dalam masyarakat Islam, khususnya mengenai keputusan penjagaan kesihatan bermula dari lahir hingga kematian. Teknologi seperti Kecerdasan Buatan (AI), Internet Perkara Perubatan (IoMT), pembedahan dibantu robot, pemindahan organ, pencetakan bio 3D organ dan bayi yang diubah suai secara genetik menimbulkan dilema etika. Isu kesihatan mental dalam kalangan remaja disebabkan penggunaan kandungan dalam talian dan kerumitan penjagaan warga emas menambah kebimbangan ini. Perbincangan ini bertujuan untuk menangani implikasi etika teknologi penjagaan kesihatan moden dari perspektif Islam. Menyokong prinsip Islam dengan kemajuan perubatan adalah penting, memerlukan penubuhan jawatankuasa Bio-etika berpandukan ajaran Islam dan ketetapan ulama. Jawatankuasa ini akan memastikan pembuatan keputusan beretika dalam penjagaan kesihatan, dengan mengambil kira keadaan kritikal di mana teknologi ini boleh digunakan secara beretika.

Kata Kunci: Kecerdasan Buatan, Bioetika, Pembelajaran Mendalam, Penjagaan Kesihatan, Islam, Ubat.

Introduction

Technology plays an important role in our daily life. Transforming even the simplest devices like hand watches into smart tools capable of displaying vital health information. These technological breakthroughs in the field of medicine and healthcare contribute significantly to enhancing lifestyle and extending longevity. Modernisation in healthcare includes wearables, telemedicine, remote monitoring tools, electronic health records, robotic assisted surgeries, internet of medical things, drug development, artificial intelligence and 3D printing of biological organs.

Tradition here refers to the Islamic perspective, that is approaching the health care predicaments from the Islamic support to the modern health care concepts, systems, and technologies. This study

explores challenges in making healthcare decisions spanning from infancy to the end of life. At various stages, individuals are faced with difficult decisions regarding their healthcare.

Advancements in medicine and healthcare have significantly impacted people's lives throughout various eras. Based on Dr. Sardar's classification, Table 1 divides these eras into four periods: Classic (1920-1950), Modern (1950-1975), Postmodern (1975-2005), and Post-normal (2005-present). The works of Ziauddin Sardar and John Ravetz introduced the term "post-normal times" or PNT in the early 1990s. It is described as a period in which traditional ways of understanding and addressing problems are no longer sufficient. The idea is that we are living in a time of uncertainty, complexity, and ambiguity that goes beyond what we have experienced in the past. PNT is not merely another 'post'—such as post-industrial, post-ideology, post-liberal, and post-modern—concept for analysing and deconstructing. Rather, we see it as both a diagnosis and prognosis. In normal times, we have confidence in our facts and values, and we can take our time in making correct and appropriate decisions. In PNT, there is a sense of urgency, and the future feels like a runaway train barrelling into the unknown.[1]

This paper aims to outline the advancements in medicine and modern healthcare systems, particularly focusing on developments from the postmodern era onward. It also explores concepts emerging in post-normal times and the careful acceptance of these advanced medical procedures from Islamic perspectives.

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[1] Sardar, *The Postnormal Times Reader*.

Table 1: Summarisation of the trending concepts in the field of medicine according to eras[2]

Area	CLASSIC (1920-1950)	MODERN (1950-1975)	POSTMODERN (1975-2005)	POSTNORMAL (2005-)
Medicine	No Antibiotic, or appropriate Anesthetics	'Modern Surgery', Antibiotics, Electrocardiogram (EKG) monitoring, open heart surgery, kidney transplantation	Electronic Monitoring of patients, Microsurgery, Face Transplant	Remote Surgery, Stem Cell Therapy, Synthetic Organs
Knowledge	Pursuit of Reasoned Inquiry	Scientific Progress and Development	Socially Constructed and Relative	Complex, Uncertainties, Ignorance
Technology	Science makes work easier	Ideologically driven for "progress"	Biotechnology & Genome Sequencing	AI, Human-Machine Synthesis
Marriage	Monogamy	Serial Monogamy	Serial, Multiple Monogamy	Hetero, Homo, Trans, Serial, Plural
Gender	Male, Female	Male, Female, (Closet Gays)	Male, Female, LGBTQ+	Undefined
Pandemics	Spanish Flu (1918-1920)	HIV/AIDS	Zika Virus, MERS, SARS	COVID-19

[2] Ibid.

Figure 1 provides an overview and visual representation of the paper's structure and flow. The paper addresses the diverse contemporary healthcare needs, which are categorised into three main generational age groups: childhood, adulthood, and elderly. This classification highlights how different stages of life require specific medical attention and care strategies. By examining each age group, the paper aims to provide a comprehensive overview of the unique healthcare challenges significant to each generation. This research tries to encompass the medical and health care dilemma each generation goes through. The first stage, childhood, covers both maternity and paediatric care due to their interdependence, addressing healthcare challenges and issues related to these areas in one combined section. The next section focuses on adulthood, which includes teenagers and young adults, and explores the unique issues faced during this phase of life. The final section discusses the elderly, examining the challenges and issues related to geriatric care. This structured approach offers a comprehensive analysis of healthcare dilemmas and decisions across all stages of life. We have mentioned a few instances that require difficult healthcare decisions to be made, considering both the patient's well-being and the Islamic perspective. We attempt to explore healthcare challenges from both medical and Islamic viewpoints.
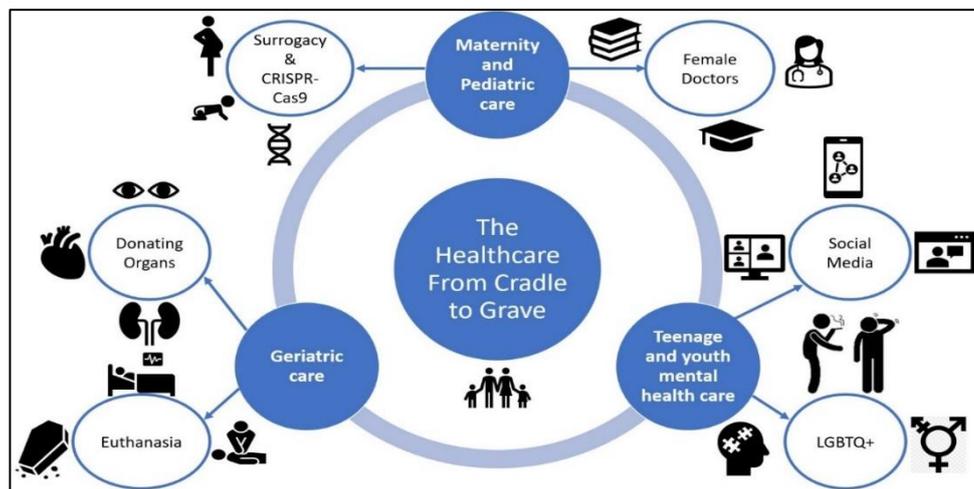
Figure 1: Healthcare life cycle from cradle to grave

Maternity and Paediatric Care

I. **Preference of Female Doctors**

A pregnant Muslim woman visits the hospital for her gynaecology appointment, the husband and the family make's sure that they find a Muslim gynaecologist or at the least they find a non-Muslim female doctor. So that the pregnant woman is comfortable with the female gynaecologist. To avoid the non-mahram interaction. This is from an Islamic perspective, a dilemma that the women are facing. When there is lack of female doctors. To overcome this, we need to have more female doctors from our ummah. It does not specifically apply in the case of pregnancy; we need to have female doctors from all the fields of specialisation in medicine. The root cause of this problem is not religion but culture. Islam is the first religion to give women their rights. Before Islam, there was an era of "*Jahiliyyah*" -- Age of Ignorance, where female infanticide was a common practice. When a baby girl was born, they were buried alive. So, when the age of marriage comes, they are not burdened with the exorbitant cost of the marriage.[3] This practice is still continued in a few south-east Asian countries. All the Qur'anic verse mentioned henceforth are retrieved from quran.com. As stated in Surah An-Nahl verse 16:57- 58.

> Whenever one of them is given the good news of a baby girl, his face grows gloomy, as he suppresses his rage (57) He hides himself from the people because of the bad news he has received. Should he keep her in disgrace, or bury her ⌜alive⌝ in the ground? Evil indeed is their judgment! (58).

As stated in Surah At-Takwir verse 81:8-9.

> and when baby girls, buried alive, are asked (8) for what crime they were put to death, (9).

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[3] Hilal, "The Effects of Islam's Sociocognitive Transformation on Female Rights and Roles."

It was Islam that provided women rights in the true sense. It was not until the 19th century that the western world incorporated women's rights in their constitution. Now they may boast about giving women their rights about liberating the women, feminism, and equality etc. However, it was Prophet Mohammed (PBUH), who was a great advocate for the protection and rights of the female infants. Islamic teachings give utmost importance in providing care, respect, and dignity towards daughters (i.e., women). Therefore, to overcome the issue of lack of female doctors in the medical field, we need to educate our *ummah*'s girls. Gaining knowledge is encouraged in our religion either male or female, regardless of the gender we are expected to seek knowledge even if one had to travel afar. The community should provide a good environment, augmented reality to create classrooms for the education of the girl child. The below excerpt from the hadith emphasises the significance of seeking knowledge in Islam, with the promise that Allah facilitates the path to Paradise for those who actively pursue knowledge.[4] All the hadith excerpts henceforth are retrieved from sunnah.com[5]

> Narrated Abu Hurairah:
>
> that the Messenger of Allah (ﷺ) said: "Whoever takes a path upon which to obtain knowledge, Allah makes the path to Paradise easy for him."

According to Diah et al., it is recommended for a female patient to seek the assistance of a male doctor only in extreme and serious situations where no female doctor or midwife is available, and in the presence of her *mahram*.[6] To prevent women from encountering uncomfortable situations at the workplace, it is crucial to equip women with proper guidance, knowledge, and support. Technology can be utilized to enhance their safety by developing emergency apps capable of alerting the nearest police station and contacting individuals from the phone's contact list. Increasing awareness within the community is also essential.

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[4] *Jami' at-Tirmidhi*, n.d.
[5] "Sunnah.com."
[6] Diah and others, "Giving Birth to a Male Specialist Obstetrician According to Perspective of Islamic Law."

Assisted Reproductive Technology (ART)

It is saddening to see a couple go through the turmoil of not conceiving a baby naturally. Infertility raises the question of whether to go for In Vitro Fertilisation (IVF) treatment or surrogacy. Artificial intelligence is being employed to select the most optimal combination of oocyte and sperm for successful IVF, aiming to improve outcomes for individuals struggling with infertility.[7] While current research in AI for reproductive medicine focuses on areas such as sperm selection, oocyte and embryo prediction, and in vitro fertilisation models, its application is through a surrogate, raising complex ethical questions. Such as whether surrogacy is *halal* or *haram*? What will be the legal status of the child conceived through surrogacy? Determination of lineage and mention that each country follows their own laws in case of surrogacy.[8] However, this is an ongoing topic of discussion with regards to Islamic bioethics. [9] mention that each country follows their own laws in case of surrogacy.[10] Hence, they call for a unified law for the Muslim ummah. [11] explores the ethical considerations surrounding the use of CRISPR-Cas9 (Clustered Regularly Interspaced Short Palindromic Repeats), a technique used to produce gene edited babies from an Islamic standpoint.[12] The author concluded that according to Islamic bioethics, scholars endorse gene editing within the body for medical reasons, as it solely affects the individual and doesn't have repercussions on future generations. However, they strongly oppose to editing genes that could affect future generations, particularly in babies, until additional research is conducted, and strict regulations are established to ensure its use is strictly for medical purposes and not for altering appearance or abilities. A hadith that briefly addresses this topic is mentioned below.[13]

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[7] Chow et al., "Does Artificial Intelligence Have a Role in the IVF Clinic?".
[8] Gul, Naznin, and Zafar, "The Legality of Artificial Insemination: An Islamic Perspective."
[9] Sujadmiko et al. Ibid.
[10] Ibid.
[11] Al Shakaki Ibid.
[12] Ibid.
[13] *Sahih Muslim*, n.d.

Abu Huraira reported:

One day the Messenger of Allah (ﷺ) appeared before the public, so a man came to him and then said: Prophet of Allah, what is Iman? Upon this he (the Holy Prophet) replied: That you affirm your faith in Allah, His angels, His Books, His meeting, His Messengers and that you affirm your faith in the Resurrection hereafter. He said: Messenger of Allah, what is al-Islam? He replied: Al-Islam is that you worship Allah and do not associate anything with Him, and you establish obligatory prayer, and you pay the obligatory alms (Zakat), and you observe the fast of Ramadan. He said: Messenger of Allah, what is al-Ihsan? He replied: That you worship Allah as if you are seeing Him, and for if you fail to see Him. He said: Messenger of Allah, when is the Hour (of Doom)? He replied: The one who is asked about it is no better informed than the inquirer, however I will narrate some of its signs to you. When the slave-girl will give birth to her master, then that is from its signs. When the naked, barefooted would become the chiefs of the people, then that is from its signs. When the shepherds of the black (camels) would exult themselves in buildings, then that is from its signs. (The Hour is) Among one of the five which no one knows but Allah. Then he recited (the verse): "Verily Allah! with Him alone is the knowledge of the Hour and He it is Who sends down the rain and knows that which is in the wombs. And no soul knows what it shall earn tomorrow, and a soul knows not in what land it shall die. Verily Allah is Knowing, Aware."

He (Abu Huraira) said: Then the person turned back and went away. The Messenger of Allah (ﷺ) said: Bring that man back to me. They went to bring him back, but they saw nothing there. Upon this the Messenger of Allah remarked: he was Gabriel, who came to teach the people their religion.

Mental Health Care for Teens and Youth

There is a lack of awareness in the *Ummah* regarding mental health care, especially among adolescents and youth. Parents often only pay attention to their children's health when they fall ill with a fever of a hundred degrees Celsius. They provide care and nursing for the next two

or three days until the fever subsides. Once the child resumes their routine of school, tuition, or play, they are assumed to be in good health, and no further questions are asked. While physical health is often given attention and care, the mental and emotional well-being of children is frequently overlooked or not fully understood.[14] This implies that more education and awareness are needed within the Muslim community to ensure that the mental and emotional well-being of adolescent children is recognised as a critical aspect of overall health, deserving the same attention and care as physical health.[15] Below is a hadith that discusses this matter.[16]

> Abu Hurayra said, "The Messenger of Allah, may Allah bless him and grant him peace, kissed Hasan ibn 'Ali while al-Aqra' ibn Habis at-Tamimi was sitting with him. Al-Aqra' observed, 'I have ten children, and I have never kissed any of them.' The Messenger of Allah, may Allah bless him and grant him peace, looked at him and said, 'Whoever does not show mercy will not be shown mercy.'"

The Social Media Paradox

Social media and AI have significant psychological effects on children, serving as both a boon and a bane. On one hand, these technologies offer educational opportunities, social connections, and entertainment that can positively impact children's development and learning.[17] On the other hand, they expose children to harmful content, unrealistic body images, cyberbullying, and addictive behaviours, which can lead to mental health issues such as anxiety, depression, and low self-esteem.[18] Balancing the benefits and drawbacks of social media and AI is

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[14] Muhyatun, "Overcoming Mental and Emotional Challenges in High School Students: The Role of the Counselor in School."

[15] Dewi, Tentama, and Diponegoro, "Subjective Well-Being: Mental Health Study among Student in the Islamic Boarding School."

[16] *Al-Adab Al-Mufrad*.

[17] Shahzad et al., "Artificial Intelligence and Social Media on Academic Performance and Mental Well-Being: Student Perceptions of Positive Impact in the Age of Smart Learning."

[18] Arora and Gautam, "To Study' The Impact of Social Media on Body Image Dissatisfaction and Cyberbullying among Young Adults.'"

crucial to ensure the healthy development of children.[19] During the COVID-19 pandemic, more kids used the Internet and social media like Instagram, TikTok, and YouTube. They used it to talk to friends and do schoolwork during lockdown.[20] The use of internet is a good example of uncertainty and ignorance.[21] How it transcends from known knows to known unknowns and finally reaching unknown unknowns. The known knows are the toddlers watching the kid's version of YouTube. The known unknowns are children independently exploring the internet. Unknown unknown is where the children erase the searched history. At this stage the parents do not know what kind of content their children are consuming on a daily basis.[22] The content that children watch from influencers impacts their young minds significantly. They are exposed to body negativity disguised as body positivity, where influencers use image filters to appear attractive and promote unrealistic body goals, sizes, and diets. This exposure can lead to issues such as anorexia, bulimia, and distorted perceptions of health and beauty standards.[23]

Figure 2: Various mental disorders [24]

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[19] Shahzad et al., "Artificial Intelligence and Social Media on Academic Performance and Mental Well-Being: Student Perceptions of Positive Impact in the Age of Smart Learning."

[20] Bozzola et al., "The Use of Social Media in Children and Adolescents: Scoping Review on the Potential Risks."

[21] Sardar, *The Postnormal Times Reader*.

[22] Hassan et al., "Muslim Youths'e-Lifestyle and Its Impacts on Well-Being."

[23] Bozzola et al., "The Use of Social Media in Children and Adolescents: Scoping Review on the Potential Risks."

[24] Creelman Ibid.

It is not just the use of devices that have a mental effect on the mind. Peer pressure is a constant challenge that Muslim students face at school and college. They might feel pushed to drink alcohol, use drugs, or do other things that their religion forbids, especially in college. It can be hard to find time and space to pray five times a day, so some might skip prayers to fit in. During *Ramadan*, fasting students might feel pressured to eat or drink during school hours.[25] Also, Muslim girls who wear *hijab* might feel pressure to dress like their peers to fit in, even if it goes against their beliefs.[26]

Western Culture Imposing LGBTQ+ Agenda on Islamic Society

In today's world, traditional gender labels like "girl" or "boy" are no longer sufficient, as individuals may identify as non-gender, non-binary, trans-gender, or cis-gender. This phenomenon extends beyond just the youth and affects individuals of all ages, leading to confusion and the proliferation of unnecessary gender terminology. Muslim youth are particularly pressured to accept these diverse gender identities, despite it being considered forbidden (*haram*) in Islam. It is imperative for scholars, religious leaders, and parents to engage in open conversations with the youth of the Muslim community, rather than succumbing to the influence of Western cultural propaganda on this issue.[27] The Prophet Muhammad (PBUH) expressed concern by referring to the behaviour of the people of Lut, fearing the emergence of similar immoral behaviour within his own community. This highlights the importance of upholding moral values and avoiding sinful behaviour. This shows the importance of maintaining moral standards and abstaining from sinful conduct. A hadith concerning this subject is included below.[28]

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[25] Riwajanti, Kusmintarti, and Alam, "Exploring Students' Religiosity and Halal Lifestyle."
[26] Rauf, Shahabuddin, and Aleem, "Hijab and Challenges to Muslim Women in Western Culture."
[27] Akhyar and Ningsih, "Integrating the Fiqh in the Islamic Education Subject at Junior Highschool Curriculum to Counter LGBTQ+ Ideologies in Islamic Majorities Population Countries."
[28] *Jami' at-Tirmidhi*, n.d.

Narrated Jabir:

That the Messenger of Allah (ﷺ) said: "What I fear most from my Ummah is the behavior of the people of Lut."

The Prophet Muhammad (PBUH) disapproved men who act like women and women who act like men. Relevant hadith is given below.[29]

Narrated Ibn `Abbas:

The Prophet (ﷺ) 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 (ﷺ) turned out such-and-such man, and `Umar turned out such-and-such woman.

Geriatric Care

The good old days are where one dreams of having leisurely life with their children and grandchildren playing around, sitting in your lap, listening to the stories of your youthful life. Who wouldn't desire to experience such tranquillity during their later years. After the struggles and challenges encountered in one's adult years. Everyone desires a serene retirement. However, for most of the elderly population this has just become a dream. Because they are either put in old age homes or if they are living with their children, they are perceived as a burden. The Prophet Muhammad (PBUH) emphasised that the mother deserves the highest level of good treatment, repeating her three times. After the mother, the father and then the nearest relatives should be treated well in order of their closeness. Below is relevant hadith.[30]

Abu Huraira reported that a person said:

Allah's Messenger, who amongst the people is most deserving of my good treatment? He said: Your mother, again your mother, again your mother, then your father, then your nearest relatives according to the order (of nearness).

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[29] *Sahih Al-Bukhari.*
[30] *Sahih Muslim*, n.d.

Old Age Homes

When there are elderly people living in a home, they need constant supervision, medical care, and affection, just as a children need.[31] Old age homes or "retirement home" are a western concept. We are encouraged to put our parents in an old-age home once they are incapable of moving around and unable to contribute to household tasks. This ideology is constantly glorified on the western media and television shows, and thereby influencing our culture.

To illustrate this influence, consider the sitcom "The Big Bang Theory". In this sitcom, among the group of scientists, there a character named Howard Wolowitz, who is Jewish and has a master's degree in engineering from the Massachusetts Institute of Technology (MIT). Although his qualifications are good and commendable, the relationship between Howard and his mother is always shown as hateful, offensive, and berating towards his mother. The show promotes the idea of disparaging one's parents, shouting at them, arguing back, neglecting their well-being, and still expecting them to cater to your needs, including cooking, cleaning and financially supporting you even in their old age. This is portrayed in a humorous manner.[32] However it can profoundly influence the thoughts and perceptions of viewers.

If the relationship between children and their parents is already characterized by resentment, loathing, and hatred, the decision to send the parent to senior care facilities is made swiftly and without hesitation. In such cases, the negative dynamics between them may make the idea of placing the parent in a care facility seem like a logical or even preferable option, as it relieves the children of the burden of caring for someone, they may harbour negative feelings towards. Often, these negative feelings are influenced by the company they keep or the desire to adapt to specific societal norms or peer expectations, which may outweigh any sense of familial obligation or compassion towards their parents.

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[31] Jadidi et al., "Spiritual Needs of the Muslim Elderly Living in Nursing Homes: A Qualitative Study."

[32] Sartika and Pranoto, "Analysis of Humor in the Big Bang Theory By Using Relevance Theory: A Pragmatic Study."

Watching sitcoms where characters speak poorly of their parents influences the young Muslim audience. They may inculcate the same obnoxious behaviour and try to mimic the same with their parents. Islam condemns this kind of behaviour with parents. We are not even allowed to say "uff" to our parents. As stated in Surah Al-Isra verse 17:23-24.

> For your Lord has decreed that you worship none but Him. And honour your parents. If one or both of them reach old age in your care, never say to them ⸢even⸣ 'ugh,' nor yell at them. Rather, address them respectfully (23) And be humble with them out of mercy, and pray, "My Lord! Be merciful to them as they raised me when I was young" (24).

These verses emphasize the importance of kindness and respect towards one's parents, particularly in their old age, underscoring the value of close family relationships, compassion, and the care that families provide for one another in times of need. When a child grows up and is gainfully employed. It becomes their responsibility to take care of their parents.

Various factors must be considered before deciding to admit geriatric patients to elderly care facilities.[33] While the concept may initially seem beneficial, over time, parents often begin to long for their children—wishing to know about their lives, their achievements, and to partake in their family events.[34]

Euthanasia or "Mercy killing" is carried out when the patient's condition becomes worst.[35] An elderly patient suffering from a long-term, incurable disease experiences excruciating pain, both physically and emotionally. The chronic nature of the illness means that the patient endures persistent and often intense pain that cannot be fully relieved with medication or treatment. In addition to the physical suffering, there is a profound emotional and psychological toll. The patient may feel hopeless, depressed, and anxious, knowing that their condition is

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[33] Shrestha et al., "Changing Dynamics of Caregiving: A Meta-Ethnography Study of Informal Caregivers' Experiences with Older Immigrant Family Members in Europe."
[34] Jadidi et al., "Spiritual Needs of the Muslim Elderly Living in Nursing Homes: A Qualitative Study."
[35] Shah and Aung, "Euthanasia from the Islamic Perspective: Ending Life of a Patient Whose Recovery Is Absolutely Impossible."

unlikely to improve. The constant pain and awareness of their incurable status can also strain relationships with family and caregivers, who may feel helpless or overwhelmed by the patient's suffering.[36]

It gets worst in scenarios where in a low-income Muslim family. As they do not have financial ability to support the health care of the patient such as maintaining the patient on ventilation, dialysis,[37] and chemotherapy. How will a person with no financial resources take care of his parents. However, financial inability never becomes the answer for euthanasia. [38] mentions permissibility of end-of-life care with verification of scholar's fatwas and the consultation of doctors is necessary.

In these situations, "Human Intelligence/Emotions" comes into play rather than "Artificial Intelligence". One cannot solve every problem by outsourcing it to AI applications. We may get to know the government schemes and aids to support us monetarily. However, the patients themselves know that no medicine or miracles can save them. Therefore, they insist on spending more time with family rather than visiting hospitals for treatment.[39] This does not mean one is giving up. It simply shows that the family has put in all the effort and support that is humanly possible, and rest is left to Allah. As stated in Surah Al-Ankabut verse 29:57, "Every soul will taste death, then to Us you will (all) be returned". This verse underscores the inevitability of death and the return to the divine, highlighting the importance of trusting in Allah's plan and cherishing familial bonds during one's final moments.

As stated in Surah Al-Baqarah verse 2:286

> Allah does not require of any soul more than what it can afford. All good will be for its own benefit, and all evil will be to its own loss. (The believers pray,) "Our Lord! Do not punish us if we forget or make a mistake. Our Lord! Do not place a burden on us like the

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[36] Khan et al., "Contemplating the Controversy: Exploring the Ethics and Realities of Euthanasia."

[37] Alshelleh et al., "Prevelance of Depression and Anxiety with Their Effect on Quality of Life in Chronic Kidney Disease Patients."

[38] Shah and Aung Ibid.

[39] Jadidi et al., "Spiritual Needs of the Muslim Elderly Living in Nursing Homes: A Qualitative Study."

one you placed on those before us. Our Lord! Do not burden us with what we cannot bear. Pardon us, forgive us, and have mercy on us. You are our ⌜only⌝ Guardian. So grant us victory over the disbelieving people."

This verse highlights that Allah only gives individuals challenges they have the strength to endure, emphasising trust in divine wisdom and the importance of relying on family support and spiritual faith during difficult times.

The Dilemma of Organ Transplantation

The "Organ harvesting" is a nice way of saying "killing on demand" or "organ trafficking". Most of the time refugees, prisoners of war and people who have been detained in the concentration camps become the easy victims of the organ trafficking. This is the one of the most unimaginable, cruel way to die. In Islam, organ donation is only allowed under critical conditions.[40] It is acceptable for a Muslim to donate their organs or to receive an organ if they have a higher chance of survival. However, they must adhere to few conditions before the organ donation or acceptance. Therefore, as a Muslim, you are allowed to accept or donate an organ,[41] but it in no way implies that one can sell their body parts as commodities to overcome financial problems.

The use of 3D bioprinting to create biological organs, could potentially offer a solution to end this inhumane practice of killing individuals for the purpose of selling their organs on the black market. Vital organs like the heart, liver, and kidneys, produced through 3D bioprinting, could possibly extend a person's life. However, one can argue that you are changing the Allah's creation. Authors,[42] discuss the emergence of the 3D bioprinting of the organs and advocate for the establishment of *Shariah*-compliant guidelines for the Muslim ummah regarding its use. Given the current situation, it is crucial to establish such guidelines.

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[40] Padela and Auda Ibid.
[41] Fazli and Hemat, "Organ Donation and Transplantation and Their Ethics in the Light of Islamic Shariah."
[42] Ramli et al. Ibid.

Conclusion

We, as a Muslim ummah, should embrace modern technology with caution, rather than disregarding it entirely. We need to keep an open mind and accept the opportunity for growth and progress, while still honouring our traditional beliefs. It is important to find a balance between tradition and scientific modernization. We can accept modern technology in order to survive in our day-to-day lives, but we must also hold onto our roots and adhere to the laws of Allah, as outlined in the *Quran*, *Sunna*, and *Shariah*. Our ultimate goal is to prepare for the *akhirah*.

Islam is often misunderstood as a restrictive religion, but in reality, it allows us to make use of advanced technologies in life-or-death situations. The intention behind our actions is what matters in Islam, and the greater good of a situation is taken into consideration, rather than material gain.

Deep Learning (DL) and Machine Learning (ML), subsets of AI, are currently dominant trends in the early detection and diagnosis of various diseases, including cancer, infectious diseases, and cardiac diseases. These AI technologies are being implemented in healthcare, such as determining the combination of embryos with the highest survival rate and implanting them inside the surrogate/mother. Medical chatbots can also provide valuable assistance to young people dealing with mental stress, offering a personal psychologist when they may feel uncomfortable visiting a psychiatrist. Furthermore, in the future, helper bots will be developed to provide companionship and monitor the health of elderly patients with dementia and Alzheimer's.

These are just a few examples of the challenges and advancements in healthcare and medicine within the Muslim ummah. It is important that we address these topics with bioethical considerations in line with Islamic viewpoints. As the world progresses, we must also progress as an ummah. It would be beneficial to establish global Muslim ethical committees that follow a unified ruling. In the field of healthcare and medicine, we need to be aware of the Islamic bioethics' rulings. We should consider the ethical implications of medical practices in accordance with our Islamic values and teachings.

Some common bioethics principles in human healthcare that align with Islamic law include respect for life, which emphasizes the dignity and sanctity of life. Informed consent is also important, as the patient has the right to make decisions about their body and healthcare. The treatment provided to a patient should be beneficial and not harmful. End-of-life decisions, such as euthanasia, are generally not permitted, although there may be exceptions depending on the patient's condition and tolerance to medical treatment. Genetic engineering, cloning, and the use of assisted reproductive technologies require careful consideration within the framework of Islamic bioethics law. These matters should be consulted with Islamic jurisprudence (*Fiqh*) and scholars to understand the principles of modern medicine and provide guidance in bioethical dilemmas in healthcare.

One major limitation of the study could be that Islamic scholars might struggle to comprehend the rapid scientific developments in healthcare and technology. This gap in understanding can hinder the integration of modern medical advancements with Islamic teachings and ethical guidelines. For instance, complex issues like genetic modification, 3D bioprinting, and AI in healthcare require a deep understanding of both the scientific principles and the ethical implications involved. If scholars lack the necessary scientific literacy, they may find it challenging to provide informed and relevant guidance to the Muslim community. This could lead to either an outright rejection of beneficial technologies or an uncritical acceptance without considering potential ethical concerns. Therefore, bridging the knowledge gap between Islamic scholars and scientific advancements is crucial to developing informed, balanced, and *Shariah*-compliant guidelines that address contemporary healthcare challenges.

Instead of harbouring prejudice against Islamic scholars, or vice versa, it is essential for the scientific research community to collaborate with them. This cooperation aims to help scholars understand the concepts and principles behind scientific advancements. Such collaboration will enable Islamic scholars to make informed decisions and provide guidance that is both scientifically accurate and in accordance with Islamic teachings. By working together, scientists and scholars can ensure that new technologies and medical practices are

ethically evaluated and appropriately integrated into the Muslim community.

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