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JBIMA Editorial

Prof Sharif Kaf Al-Ghazal, Editor in Chief

Assalamo Alaikom

In light of the recent review on the state of the NHS, it is worth us taking a step back and considering our contributions and input to the service.

Approximately 10% of doctors in the NHS are [Muslim](#) and there is growing recognition of the role that Muslim doctors and other health workers play within it. The service is clearly in a difficult state, and Lord Darzi's words in his review that "the NHS is in critical condition" is striking though perhaps unsurprising. Patients are struggling to see a GP, community waiting lists have soared to 1 million with 80% being children and young people, and A&E is in a truly awful state with long waits contributing to approximately 14,000 additional deaths per year.

A lot will need to be done to improve the NHS for patients, and just as importantly, its staff too. After all, as the saying goes, you can't pour from an empty cup. Staff have to be looked after to ensure that patients are looked after too.

The founding principles of the NHS are in line with our values as Muslims. It is free at the point of care and is funded by everyone through general taxation. We all pay for it; it belongs to us all. Healthcare is a basic human right and an essential pillar of any civilized society.

Without adequate healthcare, citizens will never be able to flourish and treatable diseases will spread misery. No matter your background, your gender, your religion and your financial status, if you need medical attention, you will receive it free of charge. We would go further and suggest that even a person's immigration status should have no bearing on using the NHS for free at the point of need. As the prophet PBUH once said, *there is no superiority of Arab over non-Arab*. We treat everyone with respect and dignity; we are all Allah's creation.

Whilst the NHS is part of the UK's national fabric, it must be protected. Moving towards a service which is focused on prevention and not just cure, investing in

crumbling buildings and better utilising digital systems will help ensure it is ready for the challenges of the 21st century. The voice of staff and patients should be better channelled to drive change too. The UK has an ageing population and the next decades need new thinking and innovation.

There are real challenges for Muslims within the NHS, both patients and staff. Staff have at times faced discrimination within the NHS with instances of micro aggressions and institutional racism still prevalent. There is a real lack of Muslim leaders and decision-makers in the NHS, and progression to the highest echelons is still a huge challenge. Patient outcomes in areas with higher numbers of Muslims are also poorer, with hospitals in said areas being more likely to be under-resourced. Allah says in the Quran "*We have sent you 'O Prophet' only as a mercy for the whole world*" (Surat Al Anbiya'a – Ayah 107) and with that, we follow the example of the Prophet PBUH and apply it to our lives; in this case rising to the challenge and working with colleagues to help repair the NHS.

As we think about the issues the NHS faces and the hard work required to overcome them, we must at least be grateful that there is a functioning healthcare system in this country. Our brothers and sisters in Gaza have been suffering the consequences of a blockade for over 2 decades and a devastating war for almost a year.

According to Dr Ghassan Abu Sitta who spoke at the BIMA Conference in the University of Warwick recently, as of the 24th of August, 36 hospitals have been destroyed in Gaza since last October and more than 800 healthcare professionals have been killed. The healthcare situation is apocalyptic but it is not being spoken widely enough about. As healthcare professionals, we have a duty to ask how we can lessen and ease suffering, and when we cannot, how we can raise awareness of it so other can lessen the suffering.

The Palestinian people are trapped they have nowhere to go. There is a danger that after a year of the Israeli

invasion, people begin to forget and dismiss the fewer news stories coming out of Gaza. This is a mistake.

We still have a responsibility to advocate for an immediate ceasefire and to help them rebuild their healthcare system. May Allah ease the pain of our brothers and sisters.

May Allah always keep us on the right path. May He always bless us and grant us success, and May He accept all that we do in his service.

Wassalam.

Prof. Sharif Kaf Al-Ghazal
JBIMA, Editor in Chief

Lighting the Torch of Knowledge in The Darkness of The Middle Ages: The Arab-Islamic influence on Ophthalmology

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Abstract

The eyes have fascinated scholars for millennia. From anatomy and disease to the process of vision, many have contributed to the present understanding of optics. The difficulty lies in establishing the origins of discoveries. Obtaining original manuscripts is arduous as texts have been lost in wars, conflagrations and disasters. Praise for developments is sometimes ascribed to early scholars who may have inspired later academics. Greek luminaries such as Aristotle and Galen laid strong foundations which the Arabs built upon, keeping the candle of knowledge burning in the Middle Ages, a time when Europe was in darkness. This article aims to review the Arab-Islamic impact on optics by presenting ancient theories, the contributions of prominent Arab scientists and exploring how the rise of Islam allowed them to flourish and influence optics.

Introduction

Historically, the study of the eye has often involved two different but related approaches. Mathematicians, physicists and even philosophers explored the physics of light, vision, and optics whereas physicians sought to understand the anatomy and related pathology. Historically scholars acquired a wide knowledge base, before focusing on specific interests. In fact, many were generalists not oculists. Ophthalmology as a distinct specialty only became recognised in the 19th century in the United Kingdom.¹

However, the medical treatment of the eye is referred to in the Ebers Papyrus, an Egyptian scroll dating back more than 3000 years.² It is not until the ancient Greeks that reliable records are found.

The ophthalmoscope was not invented until the 1800's, so a direct internal view was not possible to ancient

physicians. They were limited to observing the external eye or cadaveric dissection, therefore understanding of the anatomy of the inside of the eye remained relatively constant for centuries.³ Some authors have argued that the Romans offered little new input and the encyclopaedias of medicine they did gather, were described as "Not a medium for the communication of an expanding knowledge; rather, they were repositories for a static body of ancient wisdom".⁴

The Arab-Islamic empire, referred to by this name due to the universally spoken Arabic language and Islamic rulers, expanded substantially after the passing of Prophet Muhammad (PBUH, 570-632 AD) reaching India, North Africa and even Spain.² At its height physicians and scientists flourished with a particular interest in the eyes.²

This paper will discuss the key figures in the Middle Ages, between 500-1500AD and their influences.

Ancient theories

Alcmaeon of Croton c. 500 BC is thought to have been the first to dissect the eye and describe its contents although this is disputed as there is no remaining evidence of his works.⁵ Herophilus, born 335 BC is reported to have been the first to describe the layers of the eye: an outer cornea and sclera, a grape-skin like iris, choroid and the inner retina.⁶

With regard to vision, Empedocles (c. 493-433 BC) proposed that there were two different emanations: light radiating from the eyes to the outside world, often referred to as the emission or extramission theory, and also reflection from objects travelling to the eye, the intromission theory. He was unable to explain how the light in extramission and intromission were reconciled into a singular image.⁴ Plato (c. 427-348 BC) believed in the extramission theory but this was rejected by Aristotle (c. 384-322 BC), arguing that emissions from the eye itself would require a body of some kind which did not exist or had not been discovered.⁷ Aristotle noted an interesting concept whereby objects in direct contact with the eyeball or in a vacuum could not be seen. This led him to focus on the properties of the medium between the eye and objects concluding that it must be transparent and continuous with the surface of the eye such as air. The eyeball must then contain a watery component receptive to the incoming light and colour from the external medium.^{4,7}

Euclid (c. 300 BC) persisted on the path of extramission optics but as a mathematician, devoted his attention solely to the geometry and physics of vision, excluding the anatomical components. It is said that Ptolemy in 2nd Century AD Egypt did consider these components, however his first book was lost in medieval times.⁴ Only fragments of the work exist in Latin, translated from an earlier Arabic translation of the original Greek text. Galen, born 129 AD, developed Herophilus' anatomical theory and believed that the eye consisted of membranes: cornea, sclera, choroid, retina and conjunctiva; internally there were three sets of fluid: the albuminous, crystal and vitreous fluid.⁸ In the literature it appears that Greco-Roman scientists after this time had little interest in ophthalmology, although it may be that works were destroyed in conflict or deemed unimportant to preserve.

The rise of Islam

The darkness in development was not restricted to ophthalmology. By the 6th Century the Roman Empire was a fracturing realm, Latin Western Europe losing

connection to the Eastern Byzantine side rich in Greek philosophy and science.⁹ Medicine was not mainstream, and patients were susceptible to "quacks and charlatans".¹⁰ Conversely, Muslim armies post Muhammad (PBUH, 570-632 AD) conquered swathes of Western Asia and North Africa, gaining control of east Byzantine.¹¹

By 661 AD the Umayyad Caliphate transferred the capital to Damascus but the integration between cultures began with the accession of the Abbasids c. 750 AD, heralding the Islamic Golden Age particularly under Caliph Al-Ma'mun (786-833 AD). He established 'The House of Wisdom' in Baghdad in a significant endeavour to translate Greek texts to broaden the Arab knowledge in astronomy, science and maths.^{12,13} This translation movement partly flourished because people in Arab countries studied Greek to understand liturgical texts.

Historians have debated the motives behind the effort to assimilate Greek learning. For medicine, the Arab Caliphates were based on the teachings of Islam which places emphasis on good health. Farag reports Europe at the time was awash with charlatans capitalising on the ill, whereas Islam condemned them.¹⁰ Ibn Majah reports the teachings of Muhammad PBUH: "Whoever gives medical treatment with no prior knowledge of medicine is responsible (for any harm done)".¹⁴ Furthermore, the Quran states: "Whoever saves a life, it will be as if they saved all of humanity".¹⁵ Islam held physicians in high esteem and encouraged the search for knowledge in all regards. The Sufi sect placed unique significance on the eyes, considering them to be mirrors to the soul.¹⁶ Politics and geography also played a crucial role in Arab development. Nestorian Christians fleeing Byzantine persecution sought refuge in Muslim lands bringing with them Greek texts which they translated to Syriac and Arabic.¹¹ Shifting the capital from Damascus to Baghdad meant a reliance on local Byzantine civil servants and administrators further integrating the cultures and enabling scholars from different backgrounds to connect.^{13,17} The Caliphate's tolerance to other religions, encouraged research and empiricism, at a time when the West was enforcing 'dogmatism'.¹⁸ It is claimed that between 800-1400 AD, the number of manuscripts written in Arabic surpassed those in Latin, Greek and European languages combined, with almost 30 books on ophthalmology produced.¹⁹ The Greeks did not produce a substantial ophthalmology textbook, only short works. It was the Arabs who were the first to introduce detailed encyclopaedic textbooks, with accurate descriptions of the symptoms, methods of diagnosis and treatment of diseases of the eye.²⁰

Empedocles Combined theory		Aristotle Transmission Medium		Euclid Extramission Theory		Ptolemy Physics & Psychology of vision	
500 BC	400 BC	400 BC	350 BC	335 BC	300 BC	2 nd Century	
Alcmaeon of Croton 1 st Dissection		Plato Extramission theory		Herophilus Layers of the eye		YEAR 1 BIRTH of JESUS	Galen Physics & Psychology of vision

Figure 1. Approximated timeline of early works. Produced by Umar Ahmad

Perhaps one of the most substantial driving forces was disease. Egyptian Ophthalmia, otherwise known as trachoma or contagious keratoconjunctivitis, plagued the Middle East for millennia from the Pharaonic period to Napoleon's arrival in Egypt in 1798 when tens of thousands of French soldiers were infected during the invasion.²¹⁻²³ Trachoma was a major cause of blindness in the Muslim world further increasing the interest in ophthalmology. Individual aspirations were an additional factor. Caliph al Ma'mun expressed a keen interest in Greek medicine sending delegations to Alexandria and Asia to obtain Greek manuscripts while taking esteemed scholar Hunain Ibn Ishaq with him on campaigns against the Byzantines.¹¹ It became customary for Caliphs to offer patronage to scholars and inviting them to position at their courts. This enhanced the leader's reputation whilst also giving them a personal physician and learned guide.⁹

Prophet Muhammad PBUH		Abassid Caliphate	
	570-632	661	750
YEAR 1 BIRTH of JESUS	Umayyad Caliphate Capital moved to Damascus		

Figure 2. Timeline of Islamic Empire by Umar Ahmad

The Islamic golden age

Despite the different religious backgrounds, Yuhanna ibn Masawaih (Johannes, 777-857 AD) a Christian, was appointed the Caliph's court physician in Baghdad where he authored the first recognised monograph on ophthalmology in the Islamic world, Kitab Dagħ-al-ayn or Disorders of the eye.²⁴

To aid his immense translation efforts, Al Ma'mun employed philosopher Abu Yusuf Yaqub ibn Ishaq al Kindi (Alkindus, 801-873) who went on to serve his successors too.

Al-Kindi's desire was to compile historical knowledge in search of what he termed the truth. Although not an oculist, he did have an interest in vision.⁴

In his work 'De Aspectibus', Al-Kindi disagrees with Aristotle's medium theory. Aristotle had proposed that vision involved external objects generating 'motion', which travelled through a medium and 'impressed its form' on the eye. However, Al-Kindi highlighted that a circular object in the same plane as the eye was seen as a straight line and not circular meaning that the 'motion' produced did not mirror the object entirely.⁴ He argued that light and visual rays travel in a straight line and he was also the first to explicitly state the concept that a luminous body emits light rays in all directions from every point on its surface.⁴

A contemporary of Al-Kindi, Nestorian Christian Hunain ibn Ishaq (Johannitius, 809-873) studied medicine under Ibn Masawaih. He wrote the first systematic textbook of ophthalmology covering anatomy, pathology and the physics of vision. The 'Book of the ten treatises on the eye', contains the first detailed drawing of the eye including the optic nerve and the six extraocular muscles.¹⁹ He remained upon the Galen school of thought illustrating the outer layers as a continuation of the meninges.¹⁶ Galen described the crystalline lens as an anterior component however Ibn Ishaq incorrectly positioned it in the centre of the eye suggesting all other parts were designed to nourish it.^{16,25} The subsequent treatises discuss at length a multitude of eye diseases including trachoma, corneal ulcers and cataract. Explaining the optics of vision, Ibn Ishaq accepted Plato, Aristotle, and Galen, proposing that a spirit is emitted from the eye coinciding with light rays reflecting off objects.²⁵

Revolution in Optics

Abu Ali al Hasan ibn al-Haytham (Alhazen, 965-1039 AD) referred to as the father of optics, was arguably the greatest writer in Arab ophthalmology. 'Kitab al Manazir' or Book of optics, the most renowned of his ninety texts, was an intrepid piece diverging from preceding Euclid, Ptolemy and al-Kindi's beliefs.⁴ Al-Haytham refuted the extra mission ideology raising several critical objections. Firstly, light and visual rays could not emanate from within the eye otherwise humans

would be able to see in the dark. Similarly, focal light in darkness only illuminates a fixed area. Lastly, we are able to see distant objects such as stars immediately without a delay which would be caused by light leaving and returning to the eye. He presented his exposition of the intromission theory using geometry to show that sight required perception of light rays travelling from objects towards the eyes not from them.²⁶ It is important to note here that Persian physician Al-Razi (865- 925) did possibly reject some of the prevailing theories about vision earlier than al-Haytham, but the manuscripts evidencing this have not survived.⁴

Interestingly, Ibn Sina (980-1037), a Persian polymath had independently arrived at similar conclusions to al-Haytham at a similar time.⁴ Named Avicenna in the West, he is regarded as one of the most influential figures of the Islamic Golden Age. Often referred to as the 'Prince of Physicians', he penned The Canon of medicine, an encyclopaedia of medicine used as a standard and reference across Europe until the 18th Century. His work included a detailed description of the six extraocular muscles, similar to ibn Ishaq, and their roles in eye movement. Furthermore, he correctly stated that nerve fibres only partially crossed over at the optic chiasm.¹⁶

Quite possibly the most revolutionary yet overlooked finding came from Ibn Rushd (Averroes, 1126-1198). In both his works translated as 'Colliget' and 'Epitome of the Parva Naturalia' he refers to the 'final tunic' and 'innermost coat' i.e., the retina as the 'perceptive faculty', moving away from nearly a millennium of belief that the crystalline lens was the region of primary photosensitivity.^{4, 17} However, German scientist Johannes Kepler (1571-1630 AD) is widely credited with the discovery that light is focused by the lens onto the retina then transmitted to the brain.⁴ Interestingly, Kepler was inspired by Ibn al-Haytham who is considered to have pioneered the modern scientific method. His systematic recording and repeatable experimental designs are said to have influenced Kepler.²⁷

Clinical Contributions

Cataract surgery is one of the oldest invasive procedures in history, yet tracing the origins is challenging due to the lack of verifiable literature. The earliest authentic records are of Sushruta, an ancient Indian from around 600 or 700 BC, referring to a method called couching whereby the lens is forced out of the visual field using a curved needle inserted at the limbus through the pars plana.^{28,29} This method increased risks of glaucoma, posterior capsular rupture and blindness.³⁰ Nevertheless, the

procedure was widely practiced in the world, until the 18th Century when Jacques Daviel performed a lens removal procedure (1747).³¹ Even though he is credited as the inventor of cataract extraction, Arabs had developed this process much earlier. Al-Razi outlined the technique of an earlier physician Antyllos (2nd century AD Rome) in which a hollow tube is used to remove the lens. Ammar ibn Ali al-Mawsili in the 10th Century put this into practice after inventing a hollow needle to enable lens extraction and says he performed many of these operations.^{13,28}

Eyelid surgery was mentioned a great deal in the Arab texts, and this often concerned the removal of various tumours and cysts, including lacrimal abscesses and fistulas. Symblepharon, (adhesion of eyelids) was also treated surgically. Intricate procedures were used for treating the consequences of Trachoma, including trichiasis and entropion. The Arabs may have been the first to describe peritomy to treat pannus caused by trachoma; while an instrument was used to keep the eye open, very small hooks were used for lifting and a very thin scalpel, scissors or a needle were used for the excision.³⁰

Corneal surgery was also performed. El Zahrawi (Albucasis, 936-1013 AD) described a technique to treat pterygium which involved using a needle, horse-tail hair and removing the part of the cornea with a sharp, smooth blade.³²

Another example of the Arab-Islamic contributions is the non-surgical treatment of amblyopia. George Comte de Buffon is often credited with the introduction of occlusion therapy for amblyopia in 1743, however Thabit Ibn Qurrah (836-901 AD), a polymath living in Baghdad, described the method to patch the normal eye before him in his book 'Vision and Perception'. In fact, Paulus de Aegina, a 7th century Byzantine, who was highly regarded by the Arabs, had previously attempted to treat strabismus using a perforated mask.³³

The practice of Medicine and Ophthalmology

Medicine has tried to distance itself from quackery for centuries. The Arabs introduced the idea of qualifying examinations for admission to the medical profession.³⁴ In the case of malpractice, the family could start proceedings against the doctor, with witnesses and written prescriptions being produced in evidence. If found guilty, the doctor could be fined, barred from practice or both.³⁵ In ophthalmology Al-Razi strongly

disapproved of charlatans and called on authorities to stop them.³⁶ Itinerant oculists were considered to fit into this category and Ibn Sina said that they "...go about from place to place attacking men's eyes with their lancets and applying worthless ointments. There is no honesty in them".³⁷ A Muhtasib, a type of 'Censor' who was appointed by the Caliph, ensured that the interests of the people were protected, and this included strict checks on oculists. Only if they were satisfied could the oculist continue in practice. One of their tasks was to examine practitioners on their knowledge of Ibn Ishaq's Ten Discourses on the Eye, and also a practical examination. This tested competence in the handling of instruments, such as a hooks (for the removal of growths within the conjunctiva) and lancets for bleeding.³⁷ Unlike some of their predecessors, Arab Oculists were known for their compassion. In his detailed description of cataract couching, Ali Ibn Isa, teaches to "speak kind words to the patient so that his anxiety may be lightened".²⁰

Conclusion

Sobotka described development in Europe during the Middle Ages as stagnating, impeded by schoolmen.¹⁸ In contrast Arab-Islamic scientists were willing to stand on the shoulders of the giants that came before them. Al-Kindi states: "It is fitting then for us not to be ashamed to acknowledge truth and to assimilate it from whatever source it comes to us, even if it is brought to us by former generations and foreign peoples".⁴ He continues: "First to record in complete quotations all that the Ancients have said on the subject, secondly to complete what the Ancients have not fully expressed".⁴ The Arabs did not simply translate ancient Greek knowledge. They challenged existing ideas, developed theories, combined the physics of vision with anatomy to elevate their understanding and utilised their expertise in clinical practice. Arabic medical and scientific textbooks were translated into Latin and disseminated into Europe during the Renaissance, and some continued to be used for centuries.

The achievements of the Arab-Islamic world are summarised well by eminent German ophthalmologist and historian Julius Hirschbirg. In 1905, after 5 years of research, he addressed the American Medical Association remarking: "During this total darkness in medieval Europe they lighted and fed the lamps of our science- from the Guadalquivir to the Nile and to the river Oxus... they were the only masters of ophthalmology in medieval Europe."³⁸

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Medical Research Ethics in Islamic Context

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Abstract

Medical research has a crucial role in the development of medical knowledge. Ethical behavior is essential within the sphere of human medical research. Numerous regulations about research involving human subjects have been issued, such as the Helsinki Declaration and the Belmont Report. Despite these guidelines, significant abuse of human subjects and a profound violation of the standards of medical ethics were encountered. Most of the currently accepted Western principles of ethics in research are consistent with the instructions of Islam known to us more than 14 centuries ago. Islamic law automatically bans all immoral actions. A researcher who pursues scientific knowledge to cause harm is subject to God's rage. In Islam, injustice is forbidden. Coercing and exploiting vulnerable groups to participate in medical research is incompatible with Islamic law. **Researchers should be equipped with knowledge and comprehension of religious perspectives related to human research.**

Introduction

Islam opens the door to research. In many verses of the Glorious Quran, God encourages people to learn and look for wisdom to build the earth (Only those fear Allah, from among His servants, who have knowledge (Qur'an 35:28). God states in the Holy Quran, "...And follow not (i.e., say not, or do not or witness not) that of which you do not know.." (17; 36). Islam encourages the use of science, medicine, and biotechnology as solutions to human suffering. Thus, Muslims throughout the world may be eager to make use of the latest medical developments.¹ Islam forces the dissemination of knowledge and prohibits hiding it; as the Prophet (peace be upon him) (PBUH) said: "Whoever conceals knowledge which Allah has made beneficial for mankind's affairs of religion, Allah will bridle him with reins of fire on the Day of Resurrection."²

In the golden Islamic era from the 9th to the 11th century, many discoveries and huge advances in science and medicine were revealed. For example, Mohammed Zakariya AlRazi (born in 854 CE) was the first to conduct clinical trials comparing two identical groups of monkeys and humans.³

Muslim countries with common backgrounds and ethical concerns should involve themselves in research that suits the local situation. Many underdeveloped countries need research to provide affordable medicines to the low socioeconomic classes, and many researchers feel the deficit in the contributions of Muslims in the medical field.⁴

Clinical research requires that it conforms to internationally recognized ethical guidelines. For Muslim physicians, conforming to Islamic ethical guidelines is an added requirement. Muslim physicians and scientists should monitor externally sponsored research in their own countries to ensure that these guidelines are followed.⁵

Ethical Codes and Unethical Practice

The Nuremberg Code, established in 1948, was the first international document that emphasized voluntary participation and informed consent. It appeared after the Nuremberg Trials of the Nazi Physicians (World War II) who experimented with prisoners of war, gave them lethal drugs, caused pain and suffering to all of them, and

ended in the death of many. All the experiments were not serving any benefit to those researched and of course, were done without any consent. The Nazi physicians had abandoned the traditional ethical commitment of the physician to individual patient welfare. They were committed and found guilty. The Nuremberg trials of the Nazi Physicians opened the eyes to what was happening both in the democratic countries of the West and the heinous experiments of Nazi Germany.⁶

Japanese physicians during World War II undertook biological warfare research on military and civilian prisoners, often causing terrible suffering. Subjects died either because of experiments or were put to death when no longer useful. These crimes were not publicized as were those by Nazi physicians, nor were Japanese physicians tried in the Tokyo War Crimes trials.⁷

The World Medical Association issued guidance in 1964 to help physicians while conducting biomedical research on humans. The Declaration of Helsinki regulates worldwide research ethics and establishes standards for “non-therapeutic research”. The Declaration of Helsinki is the foundation for current Good Clinical Practices (GCP). Later, in 1979, the Belmont Report was published, emphasizing basic ethical principles and guidelines for conducting research with human subjects.⁸ Many other international laws and regulations were established.

Despite these international ethical codes, there were many irregularities, deceits, and unethical practices that were exposed by Western physicians, moralists, and the media. The occurrence of blatant unethical procedures is disappearing in the West. The drug companies pushed their experiments and unethical procedures in third-world countries. But even there, the international codes are exposing them.⁶

In the 1950s, American prisons hosted an increasing variety of non-therapeutic medical experiments some of which were risky such as injecting live cancer cells to study the natural killing-off process of the human body.⁹ The Willowbrook hepatitis study (From 1956 through 1971) involved intentionally infecting healthy but mentally challenged children with hepatitis by feeding them a solution made from the feces of those with active hepatitis.¹⁰

In a hospice in Massachusetts in the 1950s, handicapped children were told that they would go on an enjoyable trip and would be given lots of delicious food. The children were unknowingly being used in anon-

therapeutic experiment whereby they were given radioactive food to examine the effect of radioactive materials on human beings. Much later, each of them was given US\$ 60,000 as reparation. This incident remained unknown until eventually, it came to the attention of a journalist, who wrote a book about it which was published in 2004.^{11,12}

Post-Awareness Research

In the Cincinnati Radiation Experiment (1960–1972), Eugene Saenger, a cancer researcher at the University of Cincinnati School of Medicine began one of the most notorious human radiation experiments of the postwar era. Over more than ten years, Saenger and his research team exposed approximately 80 patients with terminal cancer to potentially lethal doses of radiation; at least eight of them have died from radiation poisoning.¹³

In Jewish Chronic Disease Hospital (1963), twenty-two chronically ill and debilitated noncancer patients were injected with live human cancer cells. Patients were not told of the cancer injection. The hospital covered up the lack of consent and tried to fraudulently obtain consent.¹⁴ Two years after the investigation, the American Cancer Society appointed the principal investigator as a Vice President.

The Tuskegee Syphilis Experiment (1932–1972) targeted 600 poor and illiterate African American males (399 with syphilis and 201 without). They were told that they were being treated for “bad blood”. The study was originally designed to last for 6 to 8 months, but it turned into a long-term study that continued for 40 years. Researchers followed their progress without providing penicillin, which was a known antidote as of 1943. Twenty-nine men died directly from syphilis and 100 others died of illnesses related to syphilis.¹⁵

Learning from these traumatic and often cruel moments in history gave impetus to developing international ethical guidelines, driving research conduct, and protecting the rights and safety of those participating in studies today.¹⁶

Islam and Medical Research

Islam is not only a religion; it is a way of life. The Shari’a controls the everyday activities of Muslims. Once an individual freely joins Islam, he is bound by Islamic rules and hence he is obliged to follow instructions and rules in the Quran and Hadith. The rejection of

secularization within Muslim communities does not affect the relationship between Muslim countries and secular states as Islam respects others' beliefs and choices.¹⁷

Islamic bioethics is an extension of Shari'ah (Islamic law), which is itself based on two foundations: The Qur'an (the holy book of all Muslims and the Sunna (based on the Prophet Muhammad's words or acts). Development of Shari'ah in the Sunni branch of Islam also required ijma (consensus of jurists after the death of the prophet) and qiyas (analogy) using human reason when no clear rule is found in the Quran or Sunna, resulting in 4 major Sunni schools of jurisprudence.¹

In Islamic communities, religion greatly influences behavior and practice. Teaching human research ethics to researchers in Islamic communities will not be meaningful and effective if resources heavily rely on foreign, word-to-word translated guidelines that do not address the Islamic cultural dimension of ethical human subjects research.¹⁸ Ethical principles and guidelines have been developed by international organizations such as the World Medical Association (WMA) and the Council for International Organizations of Medical Sciences (CIOMS). The Islamic Organization for Medical Sciences (IOMS) in Kuwait convened a meeting in Cairo, Egypt, in 2004 and produced a document advancing an Islamic viewpoint on these principles and guidelines. Dr. Husam Fadel elaborated in depth on these principles outlined in the "International Ethical Guidelines for Biomedical Research (An Islamic Perspective)."⁵

While researchers involved in the design or conduct of research with human subjects are typically familiar with international ethical guidelines, religion's impact on participants' perceptions of human research should not be underestimated.¹⁸ Medical research in the Islamic community should conform to and not violate the 5 maqasid-shari'ah which are the preservation of religion, life, and health, progeny (curing infertility), intellect, and wealth. If any of the five purposes is at risk, permission is considered to undertake human experiments that would be otherwise morally unacceptable in Islam.¹⁹

Ethics of Medical Research

Respect for Persons

This principle "incorporates at least two ethical convictions: first, that individuals should be treated as autonomous agents, and second, that persons with diminished autonomy are entitled to protection."²⁰ Islam respects autonomy even on the issue of belief. The

Qur'an declares that "there is no compulsion in religion" (Quran 18:29) and that each person has the full will to accept Islam or refuse it.

In Islam, a similar principle applies, that is, "no one is entitled to dispose of the rights of a human being without his [her] permission". In the human subjects' research context, this implies that "no one should be involved in a research project without his[her] free and voluntary consent".²¹ This is stipulated in the fiqh rule: "No one is entitled to dispose of the rights of a human being without his permission" and "No right of a human being can be canceled without his consent." This statement is arguably in conformity with the Belmont principle of respect for persons.^{5,18,21}

If a participant may be concerned about the presence of a religiously prohibited ingredient in a trial medication or placebo, the medical researcher should disclose the ingredients to him/her during the process of informed consent.¹⁸

In Islam, consent is allowed under the doctrine of the "human temporary custody of life". This means that the subject and physician or researcher are accountable before God for any decision made, such as consenting to a highly risky experiment that has no potential direct benefit. This is why Islam would object to phase I trials in healthy subjects unless under unique and compelling circumstances with every effort made to protect the participants, detect complications as early as possible, and take the necessary steps to treat them.¹⁹

Informed Consent

The research should be fully explained to the participants in simple language, that they could fully comprehend. Any questions should be answered. A written document in simple language should be given to the participant. He/she should be given enough time to review it, ask questions, and have free choice to accept or refuse participation; alternatives (in case of refusal) should be explained. Refusal of participation will not in any way affect his/her right to full treatment and management. The participant can withdraw at any time. The researched person even then, will not affect his right to full treatment and management.⁶

The foreseeable risks, discomforts, and hazards should be explained, indicating the probability, magnitude, and duration. The risks should include physical, psychological, social, legal, and economic risks. If any hazard occurs during research, the research should be stopped immediately and the participants should be

informed, treated for any injury, and compensated duly. Many consent documents declare that no compensation will be paid in case of injury or even death. This should be changed, and the Institution Review Board (IRB) should not accept the research until the sponsors agree to treatment and compensation. The subject's confidentiality should be always protected.⁶

Beneficence:

The first main principle of Islamic Medicine is the emphasis on the sanctity of human life which derives from the Qur'an: "If anyone saved a life, it would be as if he saved the life of all mankind" (Quran 5:32.). The verse says: The person who helps to preserve the life of even one person is the protector of the whole of humanity, for he possesses a quality which is indispensable to the survival of mankind. It is reported that Prophet Mohammed (PBUH) said, "There should be neither harming nor reciprocating harm".²² He also said "Allah likes when anyone does a work, to do it with perfection".²³

Based on sound logic and clear Islamic teachings, the physician has no right to recommend or administer any harmful material to his patients. The Qur'an says: "And He makes for them good things lawful, and bad things are forbidden" (Quran 7:157). A person who pursues scientific knowledge to cause harm is subject to God's wrath. God says: "And they learn what causes them harm and brings them no benefit, and they already know that whoever purchases it has no share in the hereafter" (Qur'an 2:102).

Human experimentation can be associated with potential hazards and risks. These risks have to be balanced against the harm caused by the disease and the potential benefit of the proposed new treatment (risk/benefit ratio). When balancing possible harms against benefits, human subjects researchers can apply Islamic rules such as public interest overrides individual interest; accepting the lesser of two harms; necessity overrides prohibition; harm has to be removed at any cost if possible (IMANA Ethics Committee 2005); and "if a less substantial instance of harm and an outweighing benefit conflict, the harm is forgiven for the sake of the benefit".⁵ An example of "Necessity legalizes the prohibited" is participation in a phase I trial. When there is an endemic disease with no available successful standard of care, and there is a promising new drug as proven by experimental studies, it would be permissible to expose healthy volunteers to the potential harm of participation in such trials for the benefit of the community if they receive no payment for such a utilitarian attitude.¹⁹

Islamic law automatically bans all immoral actions as "Haram" and automatically permits all that is moral as Mubaah. Walton et al.²⁴ explored the health beliefs of practicing Muslim women and found that all research participants (100%) strongly agreed that smoking, alcohol, and overeating were harmful to the body. So, while consuming alcohol is a harmful action, and is thus prohibited by Islam, and is even illegal in some Islamic communities, it may be considered beneficial in other cultures.¹⁸

Justice

The principle of justice is an established principle in Islamic law, and it calls for fairness in all affairs of life, including the context of human subject research. Justice is often regarded as synonymous with fairness and can be summarized as the moral obligation to act based on fair adjudication between competing claims. The Qur'an says: "Indeed We have sent Our Messengers with clear proofs and revealed with them the Scripture and the Balance (justice) that mankind may keep up justice." (Quran 57:25). Researchers should not offer potentially beneficial research only to some patients who are in their favor or select only 'undesirable' persons for risky research. In Islam, injustice is forbidden. Coercing and exploiting vulnerable groups to participate in research is incompatible with Islamic law, as is excluding women of reproductive age from biomedical research.¹⁸

The Prophet Mohammed (PBUH) said: "There is no special merit of an Arab over a non-Arab except by righteousness and piety".²⁵

The Prophet (PBUH) stated: "Ihsan is to worship Allah as if you see Him, and if you cannot achieve this state of devotion then you must consider that He is looking at you."²⁶ Ihsan which has no equivalent in English means to be good, generous, sympathetic, tolerant, forgiving, polite, cooperative, selfless, etc., In life, this is even more important than justice; for justice is the foundation of a sound society but Ihsan is its perfection. Justice protects society from bitterness and violation of rights, while Ihsan makes it sweet and joyful and worth living.¹

To apply Ihsan in the research context some points must be considered; investigators are required to be qualified and committed to conducting the research; safeguards for the well-being of the participants should be in place, the data should be accurate and transparent; and the methodology must be correct.^{3,27}

Medical Research in Vulnerable Subjects:

Vulnerability in research occurs when the participant is incapable of protecting his or her interests and therefore, has an increased probability of being intentionally or unintentionally harmed. The vulnerability can be due either to an inability to understand and give informed consent or to unequal power relationships that hinder basic rights. Excluding subjects from research for the only reason of belonging to a vulnerable group is unethical and will bias the results of the investigation. To consider a subject or group as vulnerable depends on the context, and the investigator should evaluate each case individually.²⁸

Incompetent adults should not be exposed to any nontherapeutic research. The consent of the guardian is imperative. The research should be useful to the person(patient) or his group. There should be no other alternative to obtain that information. Prisoners and incarcerated persons should not be exposed to research unless it is going to help the person or group. The consent of the prisoner is legally invalid; however, it should be obtained without coercion.⁶

Volunteers, or so-called volunteers, are easily forthcoming from the poorer, more vulnerable sections of the population who would even risk suffering pain or bearable damage for small payments. This is true of many kinds of research, in addition to research on issues such as organ

transplantation and the like. It is unethical to exploit a subject's poverty and vulnerability in this manner. Medical students, prison inmates, and other such groups have frequently been used for medical experiments in exchange for different favors and advantages.²⁹

Research on Children

The participation of children in clinical research is essential because children develop different diseases and respond to treatment in a different way than adults. Nevertheless, many drugs have inadequate information on toxicity and administration regimens for children. Medical research on children has increased in the last 20 years. International ethical regulations for conducting clinical research on children may not pertain to Muslim communities where religious beliefs play a big role in the decision-making process.³

Few regulations released details about the participation of children in clinical research.³⁰ Among the reviewed documents, the guidelines by the Islamic Organization of Medical Sciences—released in 2005 from Kuwait

(IOMS, 2005) and updated in 2016—were the most balanced and included all key points of research ethics. The latter from Kuwait documents stated that “Children and adolescents must not be included in health-related research unless a good scientific reason justifies their exclusion.”³

Among Muslims, three items might add to the inherent difficulties in children's participation: the right knowledge, the uncertainty about religious judgment, and the cultural barriers in the relationship between parents and children.³¹ In pediatrics, the research questions should be scientifically sound and lead to the understanding, advancement, or improvement of a medical issue for a larger population.³

Children should not be exposed to nontherapeutic clinical research. The consent of the minor is invalid and hence it is obligatory to obtain the consent of the guardian. The assent is the agreement of the child to participate in research when he/she is not competent to provide legally valid informed consent.

Children under seven cannot comprehend the intricacies of medical research. However, children who can comprehend and understand should be informed in simple language and their consent obtained. If they refuse, no research should be done on them, despite the guardian's consent.⁶

Women in Research

Those who call for equality between men and women falsely accuse Islam of not giving women their rights. Islam protects women's dignity and rights more than any other regulation, or laws currently used in Western countries. Women are different biologically, physiologically, and psychologically from men. Islam 1400 years ago realized this and looked at women and men equally in issues related to general legal rights and differentiated between them in their financial responsibilities, heritage, family responsibilities, testimonies, and the right to divorce.^{32,33} The Prophet Muhammad (PBUH) in his last speech at Arafat Mountain instructed Muslims to take care of women. He stated: "Show fear towards God regarding women, for you have got them under God's security".³⁴

The woman in Islam represents the cornerstone of the family, and it is the responsibility of a man to ensure her protection and welfare. Two prerequisites are needed for a female to participate in research: the first is the approval of the family and the second is that the women

must consent to the proposed research project. The approval of the husband is an important pre-requisite because he is the protector of the family, and her protection against any harm is a crucial issue. If she refuses, the husband has no right to force her to participate.³³

If participation may be hazardous in case a woman conceives, the investigator should offer her pregnancy testing and provide her with access to effective contraception before the research. The participation is conditional on voluntary informed consent, including information on the precautions taken to spare her and her fetus if she becomes pregnant from any hazards.⁵

Research on Pregnant and Lactating Ladies

Islamically, there is no objection to the participation of pregnant women in biomedical research because of the potential benefit of the research to them and their fetuses. There will always be some risk. Islamically, accepting the possibility of such harm would nevertheless be permissible if the mother or the fetus is likely to gain an absolute or outweighing benefit. When there are potential risks for the fetus, even when they are minor or outweighed, the investigator should also obtain the consent of the father. Ethically and Islamically, the investigators should make an extra effort to explain the trial, the potential benefit to the fetus, and the potential complications before she agrees to participate in the trial.⁵

The research should benefit the pregnant lady, her fetus, or the group. Clinical research should in no way expose the pregnant lady, nursing mother, fetus, or baby to any harm. The lady should avoid pregnancy if the research period is prolonged, and contraception should be used. The consent of the husband or any other member of the family is not enough. The consent of the husband may be essential in research involving reproduction.^{6,33}

Conclusion

Research is a potential engine for the development of any nation. Despite the presence of many international regulations, medical research on human subjects is replete with horrendous stories of cheating, maiming and even killing many innocent persons.

Islam emphasizes seeking and disseminating knowledge. Morality and ethics in Islam are of divine origin. Medical research in the Islamic community should conform to and not violate the 5 maqasid al-shari'ah which are the preservation of religion, life, progeny, intellect, and wealth. For Muslim physicians, conforming to Islamic

ethical guidelines is an added requirement. Muslims should be the first to broadcast those ideals since saving a life, for a Muslim, would be as if he saved the life of all mankind.

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Donating and Receiving Milk Through Milk Banks – The Issue of Milk Kinship and the Barriers and Challenges For Muslim Mothers and Babies

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Introduction

The concept of milk kinship establishment has been a barrier for Muslims to donate and receive donor human milk for many years. During the recent relaunch of the Centre for Islam and Medicine (CIM), a lively roundtable discussion moved the discussion forward to enable solutions to be found to this delicate debate.

The benefits of human breast milk to infants are well known, from protection against common childhood illnesses to being less likely to develop obesity as they get older. (1) For premature babies, receiving formula milk can increase their risk of developing necrotising enterocolitis, one of the leading causes of death in this cohort of infants, as well as increase the risk of sepsis and inflammation of the gut endothelium. (2) Donor breast milk is used to protect babies when mothers are still establishing their own milk supply or if infants do not have access to their own mother's milk. (3)

Infants have received donor milk for thousands of years. When mothers were unable to breastfeed their infants, they were given to wet nurses who breastfed them. (4) Human milk banks, created in the twentieth century, help to "screen and recruit donors, and have wide-ranging

precautions to ensure the safety of donor milk," including testing for bacteria and heat treating the milk at 62.5 degrees for 30 minutes. It is estimated that more than 800,000 infants receive donor milk across the world each year. (5)

Breastfeeding, with specific criteria, causes a milk kinship in Islam between an infant and the woman breastfeeding him or her. This milk kinship, known as 'rida' or 'rada', prohibits marriage between the breastfed individual and close relatives, such as the children, of the donor. (6) This milk kinship, whether through wet nurses, or through milk banks, can cause challenges when breastfed infants grow and consider marriage. When donor human milk is anonymised, further barriers are created due to the real but extremely small chance of marrying a milk relative, and this impacts on the clinical use of donor milk in areas with predominantly Muslim patients. (7)

Milk Banks and Milk Kinship in Islamic Law

A variety of opinions have been expressed regarding milk banks by Islamic scholars. Shaykh Yusuf al-Qaradawi presented his responses to a question regarding milk banks in 1983 at the Islamic Organisation of

Medical Sciences (IOMS) and also at the International Islamic Fiqh Academy (IIFA) in 1985. In 2004, his fatwa was presented at the European Council for Fatwa and Research (ECFR), which issued a ruling stating that there should be no barrier in Islam to the establishment or use of human milk banks.

Al-Qaradawi praised the donation of milk and the aims of a milk bank to help protect the lives of premature infants. His fatwa, religious edict, opining that there was no barrier in Islam to milk banks was on the basis that this type of donation and feeding of milk did not institute kinship and therefore did not cause marriage prohibitions in Islam. His opinion was based on 3 arguments:

1. Based on the exact meaning of 'rada', establishing kinship would involve suckling and being in close contact with the donor mother, not just consumption of her milk. As donor milk from milk banks involves bottle feeding, Al-Qaradawi said this would not cause kinship.
2. The anonymity of the woman or women donating milk and the exact amounts of milk donated meant that kinship could not be established.
3. In a situation of hardship, where the preservation of life was a concern, a lenient approach was more appropriate.

These opinions and arguments were challenged in 1983 and 1985, where the majority of scholars did not accept the arguments, and also more recently in 2014 when Mufti Zubair Butt was asked to provide a response on behalf of the Muslim Council of Britain (MCB) to a similar question posed regarding the Islamic perspective on milk banks. (8,9)

1. The opponents argued that 'rada' did not only mean direct suckling and could be from a bottle, an opinion held by the majority of Muslim jurists within the well-known four Sunni schools.
2. The opponents accepted the second argument but did challenge the idea of allowing this situation of uncertainty to occur. In the Shafi'i and Hanbali schools, milk kinship is only established after a minimum of 5 satiating sessions of suckling. The Hanafi school require only one suckling session, irrespective of the amount suckled. There are also differences of opinion regarding pooled milk and the establishment of milk kinship; Imam Abu Yusuf opined that kinship only occurs with the donor whose milk is dominant. The preferred Hanafi and also the Hanbali and Maliki opinions are that milk kinship occurs with all donors to the pool. The Shafi'i school

have additional conditions to decide if kinship is established. With regards to anonymity, the Hanafi, Shafi'i and Hanbali schools all agree that this does not establish kinship, whereas the Maliki school take a more cautious approach.

3. The opponents felt that there were obvious processes that could be put in place to avoid requiring a more lenient approach.

Milk Banks and Donation in the United Kingdom

The British Association of Perinatal Medicine recommend that "donor human milk may be considered in babies born at < 32 weeks gestations and/or < 1500 grams to establish enteral feeding when mother's own milk is unavailable or insufficient to meet their baby's requirements." (10) UK human milk banks adhere to NICE clinical guidelines, which require tracking and tracing of donor milk with records being kept for a standard of 30 years. The documented information includes the donor and recipient identities. Donor milk is not pooled in the UK and each donation is from a single donor.

Milk Banks in Muslim Majority Countries

Human milk banks have been established in countries such as Iran, Kuwait, and Malaysia. There are different methods of ensuring that milk kinship is not a challenge, from rulings that bottle feeding does not establish kinship to both donors and recipients sharing identity and information, and single donor and recipient agreements making it easier to trace donations and milk relatives.

In Pakistan, the first milk bank for premature babies suspended its service in June 2024, before donations had begun, after a fatwa citing pre-conditions to establishing the milk bank was withdrawn due to concerns regarding milk kinship. (11)

Muslim Council of Britain Round Table Discussion 2015

In April 2015, the MCB hosted a round table discussion involving scholars, paediatricians, and members of milk bank organisations. The key resolution was that "concerns about milk kinship should not lead to donor human milk being withheld from vulnerable infants, as there are safeguards in place that guarantee the traceability of milk from donor to recipient." (8) Solutions were suggested to improve the traceability of

donated milk so that if there was any concern that an individual and their future spouse's mother had received and donated milk, then with the relevant consent, information could be shared to clarify whether the mother's milk had gone to this particular individual. There was also an agreement that the team would recommend extending the duration of the keeping of donor milk records at the next review of the NICE guidelines. This would be for longer than the current 30 years to ensure difficulties would not occur for individuals wanting to marry after this period.

Contemporary Muslim Mothers and Infants and the Use of Milk Banks

The Centre for Islam and Medicine held an Islamic Bioethics Seminar on April 25, 2024. During the event, a discussion took place involving scholars, medics, and specialist midwifery and milk bank colleagues. Case studies were presented involving Muslim women whose infants had either had or were recommended human donor milk due to health issues.

The need for human donor milk usually comes at a very emotional and sensitive time, after childbirth and when a baby is often vulnerable and unwell. This is a period where mothers are at significant risk of poor mental health and the lack of adequate information, which is sensitive to the needs of Muslim parents, and which addresses the issue of milk kinship, can lead to struggles with mental health and tensions between parents and within families. The parents can feel guilty about whether they are going against the teachings of Islam and one parent even thought that it would be best for their child to marry a spouse from a different country.

Parents often seek the counsel of scholars they trust within their communities. Unfortunately, the advice they are given can be conflicting and confusing. A lack of awareness from healthcare professionals means parents are not always signposted to specialist colleagues and therefore feel a lack of support during this difficult and emotional journey.

Muslim parents also have concerns regarding the traceability process and worry that records are only kept for 30 years. They are also concerned that the milk their child receives will be from multiple sources.

The focus has been on infants who require breast milk for medical reasons. There are also mothers who are unable to provide their healthy infants with breast milk but are

willing for them to receive donor human milk, and improved information and guidance will help them too.

What Next?

We must all be clear, as concluded in the 2015 MCB roundtable discussion that "concerns about milk kinship should not lead to donor human milk being withheld from vulnerable infants." (8) Pragmatic and patient-centred outputs will help to ensure that the systems and processes in place help reassure everyone involved, and all parents in situations where donor human milk is required will be provided with the necessary information to make informed decisions.

When the NICE guidelines are updated, it is imperative that the length of record keeping is increased. There must be robust systems to ensure traceability of donated milk so that donors and recipients are aware of who to contact should they discover that a potential spouse may be a milk relative. Should donors and recipients keep their own records to help tighten the process?

Further discussion and debate are required of scholars to come to an opinion regarding whether issues such as donor anonymity can be used as a legitimate reason for milk kinship to not be established, and therefore make the use of milk banks more acceptable to Muslim parents and families.

Education of healthcare professionals, scholars and parents will allow for a better understanding of the need for donor human milk, and allow the dissemination of appropriate guidance to those who need it.

The consensus at the Islamic Bioethics Seminar was that all colleagues wanted to work together to help improve the current situation for Muslim mothers and infants requiring donor human milk. Future expert meetings and roundtable events can help to ensure that the ideas suggested over the last few years can come to fruition and improve the health of vulnerable infants who will benefit greatly from this work.

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Treatment using porcine derived low molecular weight heparin. What are the Islamic ethical arguments?

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Abstract

Muslims are forbidden from consuming meat that is not halal as mentioned in the Quran. Heparin is commonly used as an anticoagulant to prevent and treat thromboembolism. However, heparin contains porcine derived products, making it unsuitable for Muslim patients [1]. Some individuals including Muslim patients and healthcare professionals are unaware of this information.

A literature review will be conducted to delve into the implications for Muslim patients regarding the use of heparin and its porcine-derived ingredient. This comprehensive analysis will explore potential alternatives and consider these factors in shaping future healthcare practices, aiming to address the needs of Muslim patients while ensuring adherence to religious beliefs and values.

Muslim patients should actively seek suitable alternatives to heparin when available, consulting with their healthcare providers to explore options that align with their religious beliefs and medical needs. Current practice often involves the use of fondaparinux as an alternative to heparin. However, if out of necessity and no alternative exists, the use of medication containing haram animal ingredients is permissible for Muslim patients [2].

By disseminating information on a larger scale through avenues such as leaflets, media campaigns, and public health initiatives, patients and health care professionals can become more aware of which medications contain

haram animal ingredients. This widespread education empowers patients to seek suitable alternatives, ensuring they make informed decisions about their healthcare. Similarly, healthcare professionals can offer tailored treatment suggestions to Muslim patients, extending this approach to accommodate those with specific dietary requirements, thereby ensuring comprehensive and culturally sensitive care.

Ultimately, this review seeks to promote a healthcare approach that integrates religious considerations into medical practice, ensuring that all patients receive care that aligns with their beliefs and values.

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Empowering Student-Led Advocacy: A Manchester Case Study in Fostering Sustainable Support for Muslim Medical Students and Staff in UK Universities

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Muslim medical students and staff face significant challenges in raising concerns within higher education institutions (HEIs), often encountering dismissive attitudes, inadequate responses from programme leaders, or short-lived superficial symbolic wins. Such attitudes contribute to a culture where Muslim concerns are trivialised and advocates for change are labelled disruptive. To address the pervasive issue of marginalisation within HEIs, the authors introduced the Manchester Muslim Medical Student Guide (MMMSG), aimed at fostering tangible and sustainable change [1].

This study explores the implementation and impact of the MMMSG at a medical school in Northern England. The authors engaged stakeholders, including faculty leaders and legal teams, to develop a comprehensive guide catering to the unique needs of Muslim students and staff. Informed by student questionnaires, focus groups and the authors' lived experiences, the MMMSG covers vital topics like accommodation, religious practices, attire and combating Islamophobia. It offers practical advice, email templates and university contact details for assistance and escalation. The guide maintains Islamic integrity while ensuring comprehensive coverage of

essential issues. Faculty engagement during its development ensured the department's deeper understanding of overlooked issues and equipped them with tools to address concerns effectively. The guide's effectiveness stems from its high-quality content and the accountability it establishes for faculty members.

The release of the MMMSG sparked nationwide interest, with the team supporting twelve healthcare-related faculties across the UK in tailoring the guide to their specific university and degree programmes, including dentistry, pharmacy, nursing and midwifery. Its impact led the Medical Schools Council (MSC) to develop a staff faith guidance document, providing recommendations on fostering inclusivity for students of faith [2]. Positive feedback from the General Medical Council (GMC) prompted plans for a document review and dissemination of a second edition.

The host university awarded the MMMSG a Highly Commended Award [3] and submitted the work for the Times Higher Award, highlighting its significant impact on student welfare and institutional inclusivity.

The MMMSG's success lies in its transformative impact on institutional culture and student experience. Through the data-driven approach and active involvement of students and faculty in its development, the guide became a catalyst for meaningful change, ensuring Muslim concerns were validated and compelling faculty leaders to address previously overlooked issues. The MMMSG has initiated a new era of collaboration between students and institutions, fostering positive transformations in healthcare education across the UK.

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Continued Efforts to Raise Awareness About Organ Donation in the BAME Community

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Despite ongoing efforts by BIMA, there remains a substantial disparity in the rates of people opting in for organ donation between the white and BAME communities. The "Annual Report on Ethnicity Differences in Organ Donation and Transplantation 2022/2023" highlights that Opt-in registrations from ethnic minorities rose to 11.7% from 7.8% in 2019-2020, yet the numbers are still quite low compared to the population in UK. [1],[2], [3].

The British Islamic Medical Association has been working relentlessly throughout and has organized a series of nationwide community meetings and campaigns with the collaboration of Northumbria University and Northeast North Cumbria Renal network, other healthcare professionals, religious scholars, faith leaders, and transplant patients to raise awareness about the significance of organ donation from a Muslim perspective. Events have been organized at 17 different public forums since last year; including educational and religious platforms, where the process of organ donation was elaborated, attendees were informed about recent changes in organ donation laws and the common misconceptions were addressed. Patients who had received organ transplants shared their challenging experiences of being on long waiting lists. Additionally, pre- and post-event questionnaires were conducted to gather feedback.

Training sessions for Muslim scholars, distribution of informative leaflets and posters in public places like GP surgeries, grocery stores, and restaurants, and even a hike to further promote awareness were part of the campaign. Moreover, social media has also been an effective platform for raising awareness about organ donation

through initiatives like Ramadan campaign, National Organ Donation Week campaign, and the release of an Organ donation film, which gained over 4000 viewers.

Despite progress, ethnic minorities remain underrepresented due to lower family consent rates and longer waiting times. It is evident from the consensus that there is significant room for improvement in the attitudes of minority ethnic groups towards organ donation. Hence, with sustained efforts, this gap can be bridged gradually.

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Muslim Healthcare Students' Experiences with Dress Code Policies in Hospital Placements

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Background:

Muslim healthcare students striving for professional excellence can face a unique challenge: reconciling religious dress codes with hospital policies. While previous research highlights the potential conflict for Muslim healthcare professionals, limited data exists specifically for students.¹ Understanding the student experience of dress code policies and the intersection with faith-based principles is crucial for promoting inclusivity within medical education and the healthcare setting as a whole.

Aims:

An inclusive healthcare workforce is essential for the delivery of optimal patient care. With 3.3% of NHS workers identifying as Muslim, professionals must not be made to feel that they have to choose between their faith or adherence to dress code policies, and that their career progression is not limited further than it already is due to racial and social disparities, as discussed in a 2017 BMA report.^{2,3} This study aims to provide valuable insights into the challenges faced by Muslim healthcare students, so barriers such as dress code policy can be addressed early on in training, as otherwise this can lead to talented professionals being deterred from reaching their career goals, and limiting patient access to culturally competent care.⁴

Methods:

To address this gap, an online survey was distributed via the University of Birmingham Islamic Medical Society WhatsApp groups and Instagram page. The survey explored students' experiences of dress code policies during placement, and the extent to which these policies

may have impacted their ability to adhere to their faith. We also sought to ask their suggestions on how dress codes can be made more inclusive.

Results:

50% of students felt they were unable to adhere to dress code policies at placement due to their faith. 25% of students mentioned the 'bare below the elbows' policy particularly as affecting them, and 100% of students suggested that more modest options, such as a long scrub skirt and disposable sleeves, would make dress codes more inclusive of their faith-based practices.

Outcomes:

Following these results, research must be conducted on the impact of introducing modest uniform options for students and staff, and whether this has any effect on patient outcome or infection control.

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A Critical Analysis of Philanthrocapitalism

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Introduction

Philanthrocapitalism, particularly in the US, will soon dominate the landscape of global health and development, where private actors fund their own initiatives, without enforceable accountability mechanisms, ethical decision-making by qualified experts or transparency in general (Edwards, 2009). Accordingly, research shows that international institutions such as the WHO and World Bank have decreasing say in determining global development goals, arguably due to inadequate financial resources, while private institutions exhibiting white saviour complexes hold increasing political power to exert self-serving influence through manipulation of global institutions (Edwards, 2009). However, there is insufficient research linking philanthrocapitalism to its root causes and posing solutions to its increasingly insidious influence. Thus, this essay seeks to fill that gap by forming a critical analysis of the phenomenon of philanthrocapitalism within the landscape of a neocolonial, capitalist global economy. This essay will first define philanthrocapitalism and present successful examples of philanthropy, before criticising the orientalist narrative through which these schemes are publicly portrayed and the omission of underlying unethical practices. This essay connects philanthrocapitalism to the white saviour industrial complex and highlights the self-perpetuating nature of white saviourism.

Furthermore, this essay explores Marx's theories on the origins on capitalism, criticising unjust knowledge production surrounding the Western colonial narrative and historical disregard of women's roles in social reproduction. This essay then introduces two key players in the philanthrocapitalist industry: the Rockefeller Foundation and its role in manipulating American medical education, research and practice, and the Bill and Melinda Gates Foundation and its focus on technological

solutionism over sustainable social reform, such as genetically modified crops in Africa. Finally, this essay frames philanthrocapitalism as a product of unequal accumulation of wealth, and thus proposes ethical arguments in favour of a redistribution of wealth, through Peter Singer's utilitarian approach, Thomas Pogge's argument regarding negative duty and the Marxist understanding of the "species-being" (Weidel, 2016). This essay also offers a unique Islamic perspective, based on the Islamic values of acting beneficently and promoting social justice through the replacement of an interest-based economy with an equity-based economy, whilst acknowledging the limitations in establishing this over a globally diverse population under no obligation to act Islamically.

Philanthrocapitalism

The term philanthrocapitalism has been defined as "the application of modern business techniques to giving but also the effort by a new generation of entrepreneurial philanthropists and business leaders to drive social and environmental progress" (Bishop, 2013, p. 474). According to SEN (2015), philanthropy depicts a desire to shift the responsibility of global development from public to private institutions, due to states neglecting their population's basic needs (usually due to austerity measures) and the idea that private institutions are better able to meet these needs through philanthropy. Bishop (2013) provides examples of successful philanthropic efforts, like Andrew Carnegie building libraries across the US and other countries, as well as the Gates Foundation funding research to alleviate the burden of diseases in the developing world. However, the paper fails to actually provide evidence on how people benefited from these schemes. The phrase "diseases of the developing world" perpetuates the orientalist view that people in the developing world experience exotic, rare diseases that are different from the West and require

Western cures and interventions. Additionally, the narrow focus on diseases like malaria seems shortsighted, when money could be invested into more sustainable interventions such as healthcare system strengthening or non-communicable disease prevention. Overall, Bishop's paper aligns with the stereotypical narrative defining Western philanthropy that focus on the generosity of the wealthy, as opposed to trying to dismantle the power imbalances that cause developing countries to be financially dependent on Western aid and philanthrocapitalism in the first place.

The Lancet (2009) encouraged the Gates Foundation to form a grant award plan that accurately depicts the global burden of disease, so that funds can be allocated accordingly, and to invest in both healthcare system strengthening and research capacity in LMICs. However, these somewhat naïve proposals don't take into account the fundamental nature of philanthrocapitalism: "the super-rich need to stay super-rich in order for their charitable enterprises to function" and thus pursuing sustainable interventions that decrease a country's future need for ongoing philanthropy would not be in the favour of the Gates Foundation or any similar institution (SEN, 2015, p. 23). Conveniently, the fact that foundations protect large amounts of wealth from taxation is rarely mentioned either.

In light of the above, it is clear that philanthrocapitalists are predominantly wealthy white males whose schemes expose their orientalist views. Expanding on this, I argue that the SEN's (2015) use of the phrase "giving back" is ironic since accumulations of wealth held by philanthrocapitalists largely depend on overexploitation of resources and labour from underdeveloped nations, usually in the Global South, and also ongoing local processes that perpetuate racial and social disparities. Furthermore, these schemes often involve unethical practices that are purposefully hidden from the public eye due to biased media output, including environmental pollution through poisonous chemicals and pesticides, forced labour and child labour as well as disgraceful working conditions such as sweatshops (Teubner, 2006). In the next section, I will introduce the concept of white saviourism as a way to frame philanthrocapitalism.

The White Saviour Complex

Finnegan (2022) writes how white saviours tend to be wealthy white people who present themselves and their philanthropy as altruistic. While altruism may be a sincere motivator of philanthropy, performative altruism does not dismantle the existing racial hierarchy or power

imbalance, and ultimately functions to reproduce the same methods of production as capitalism. The white saviour industrial complex benefits from racial injustice and structural violence, such as large disparities in earnings, which contribute to the increasing racial income gap – thus the white saviour complex is self-perpetuating and upheld by these injustices (Finnegan, 2022). With disparities in earnings being easier to quantify, this leaves unquantifiable racial injustices obscured in existing research. This includes effects of generational trauma, disparities in the criminal justice system, biased media reporting, unchallenged stereotypes in the public and private sector and a failure to recognise how the white upper-class members still benefit from ongoing neocolonialism (United Nations, 2023). These factors likely contribute to the overall ease with which white upper-class people can accumulate wealth, whilst denying the same opportunities to people of colour. Using an intersectional feminist framework, which analyses how overlapping layers of oppression converge, black people are more likely to suffer from marginalisation, oppression or discrimination on account of wealth, housing, citizenship, skin colour, race, class and ethnicity (Patricia Hill Collins, 2012). Despite intersectionality lacking a defined methodology and focusing almost exclusively on the experiences of black women in the US, it is still useful in understanding how multiple synergistic layers of violence and oppression contribute to socioeconomic disparities and inequality for black people in general (Patricia Hill Collins, 2012) (Nash, 2008). All in all, the white saviour complex derives itself from the domination and superiority complex of the white race, whilst upholding the stereotype that African people are uncivilised, underdeveloped and in need of saving by Western NGOs. This is without acknowledging the colonial legacy and history of exploitation, genocide and violations of human rights that caused underdeveloped (or overexploited) nations in the first place, since narrative control is a key hallmark of the white saviour complex (Manji, 2019). Thus, white saviourism is an accurate method through which to frame philanthrocapitalists.

The Origins of Capitalism

To investigate the origins of philanthrocapitalism, it is necessary to address the origins of capitalism, and how this led to extremely unequal distributions of wealth in today's society. It is predominantly white upper-class males in the West who hold massive accumulations of wealth, and therefore they are more likely to pursue philanthrocapitalist ventures, exhibiting white saviour complexes and manipulating international institutions

through political power. According to Marx's theory on capitalism's origins, primitive accumulation and centralisation of capital were key processes. Primitive accumulation of resources and capital was heavily dependent on "the exchange of unequal values, thus of swindling or usury... and not distinguished... from pillage pure and simple" (Batou, 2015, p. 15). This occurred alongside centralisation of capital, where peripheral areas were drained of resources such as land, fish and tools. These processes often occurred through violence, such as the systemic genocides of non-European populations and deportation of Africans to be used in the slave trade (Batou, 2015). Accumulation by dispossession occurred at the expense of funding social welfare institutions such as education, healthcare and accessible transport (Angelis, 2000). The use of slavery and wage labour exploitation in the peripheries allowed for a major transfer of raw materials to the centres of capital, largely to local upper class members (Moyo and Yeros, 2011). Since these processes continue today under neocolonial projects, this largely sets the stage for today's philanthrocapitalist scene, dominated by the same demographic of wealthy white males exhibiting orientalist views characteristic of the white saviour complex.

One criticism regarding historical literature of capitalism is the lack of explicit and adequate mention of the role women played in social reproduction and unpaid, informal labour. This continues to be an issue in current White Feminist movements, where women are empowered to work and contribute to the economy as equally as men, yet men are rarely counselled to equally share in social reproduction (Forrest, 1998). The deliberate silence regarding women's roles throughout colonial history paves the way for women's unpaid labour in household chores and childcare to continually go unrecognised, which is pivotal to the capitalist modes of production and further disparities in accumulation of wealth (Forrest, 1998).

Epistemological Injustice in the Production of Knowledge Shaping Narratives on Capitalism and Colonialism

In keeping with the Western narrative of superiority and dominance of the white race, literature downplays the violence and immorality carried out by the West in history. Epistemological injustice refers to making the dominant side's perspective more prominent (i.e. the West) in mainstream knowledge while obscuring and delegitimising knowledge from the opposing side (i.e.

previously colonised countries) (Bainton and McDougall, 2021). Feminist theory criticises this by arguing that knowledge production, including whose perspectives are included or erased, reinforces power inequalities and patterns of marginalisation (Townsend and Niraula, 2016). This includes Western historical analyses of colonialism who fail to focus adequately on how exploitative practices affected the lives of people in colonies, contributing to the disregard in Western scholarship for how Western attitudes interact with current world events such as neocolonialism and structural racism. Critical reflexivity, derived from feminist ethics of care, calls on researchers to situate themselves within the sociopolitical context of their research, such that power imbalances, social hierarchies and racism that underpin epistemological injustice can be made evident (Sultana, 2007).

Overall, while academic research focuses on being value-neutral and objective, this overlooks the overarching point that such injustices should objectively not happen again. Slavery, genocide and on-going exploitation of indigenous populations and their resources ought to be called out as unethical and abusive in academic literature. As such, efforts should be made to encourage more inclusive scholarship which equally value different sites of knowledge production. This is however rare to observe in existing literature, as previously alluded to. Therefore, due to a lack of criticism and condemnation of Western exploitative practices in literary culture, people are largely unaware of how systems of inequality and injustice still target people of colour, and remain unaware of how these processes underpin white saviour culture and philanthrocapitalism.

The Role of The Rockefeller Foundation in Racial and Gendered Medical Injustice

In mainstream academia, the role that the Rockefeller Foundation played in the founding of modern medicine and medical education is depicted as remarkable and a sign of extreme generosity. The Rockefeller Foundation is described as representing the "unity of aim and the coordination and material stimulus and support which [were considered] essential to the highest achievement in research" (Markowitz and Rosner, 1973, p. 20). This raises the question – what knowledge did John Rockefeller, the owner of the Standard Oil Company, have that qualified him to centralise and monopolise medical practice, education and research in the US? In reality, the Rockefeller Foundation exerted control over the type of research conducted in other institutes, and

whether the research was published or not depended on the judgement of a jury who represented the Rockefeller Foundation's interests (Markowitz and Rosner, 1973). As such, American medical research was made to exclusively reflect the interests of a small number of powerful men working for the Rockefeller Foundation. This included the trivialisation of natural cures and homeopathy, and a focus into patented drugs largely produced by Big Pharma (Sujatha and Abraham, 2009).

In 1914, \$500,000 was donated to Yale University "on the condition that the school procure complete teaching and medical control of the New Haven Hospital [a public hospital]" – as such, the Rockefeller Foundation exerted their manipulative influence over medical practice in the US (Markowitz and Rosner, 1973, p. 22). While resources and funds were channelled into a few elite medical schools and hospitals, medical educational facilities for black people and for women became largely underfunded (Markowitz and Rosner, 1973). This mirrors previous patterns of centralisation and accumulation of capital/ knowledge production by white male social elites. Despite the fact that important medical breakthroughs were enabled through the Rockefeller Foundation, this could in part account for the severe lack of research into women's health and reproductive conditions such as endometriosis and PCOS that continue to affect women's health outcomes, however there is inadequate research to provide concrete evidence for this. This could also explain why black people are underrepresented in research studies despite being disproportionately affected by illnesses, like hypertension and chronic kidney disease (Striving for Diversity in Research Studies, 2021). The Rockefeller Foundation is a prime example of the white saviour complex, as exhibited through their perceived superiority in knowledge and decision making. Moreover, the Foundation shows how philanthrocapitalism serves only to benefit selfish pursuits of the donor and can have devastating and far-reaching implications in increasing racial and gender disparities in health outcomes.

Technological Solutionism: The Case of Genetically-Modified Crops

The Bill and Melinda Gates Foundation is a non-profit private foundation that was formed 24 years ago, with an endowment of just short of \$70 million (Bill & Melinda Gates Foundation, 2022). Substantial financial funds allow the Foundation to exert a disproportionately large influence over the goals of global health, with an overwhelming focus on technological solutionism (Burja,

2022). Technological solutionism refers to the design and production of technology (largely in the West) used to "solve" issues such as malaria or poverty in Africa, without addressing the wider sociopolitical and economic context these issues are situated in and perpetuated by, and without adequate input and informed consent from those on whom the technology is arguably forcibly imposed.

American writer Evgeny Morozov writes that "solutionism presumes rather than investigates the problems it is trying to solve, reaching for the answer before the questions have been fully asked" and reduces our ability to be morally and ethically reflexive, since technology is framed as the ultimate solution as opposed to one tool in the arsenal that should be continually revised and improved upon (Morozov, 2013, p. 6). As evidenced further ahead, there in fact appears to be absolutely no consideration of ethics or morality in the Foundation's schemes, in which charity and profit appear to be one and the same thing, as is characteristic of philanthrocapitalism. The Foundation are the second largest donors of WHO (after the US), yet these donations are largely ear-marked to finance malaria, tuberculosis and HIV/AIDS eradication research (Bill & Melinda Gates Foundation, n.d.). As such, these funds are given to pharmaceutical companies such as Merck, GSK, Novartis and Bayer HealthCare, many of whose positions are occupied by Foundation staff members (Martens and Seitz, 2015). Put simply, much of the funds allegedly dedicated for philanthropic purposes, end up back in the hands of the Foundation as opposed to helping those in need.

The Foundation has dedicated over \$170 million towards research into genetic modification, as a technique to allegedly improve outcomes for African farmers and attempt to "empower millions of people to lift themselves out of poverty" (Rock et al., 2023, p. 1-2). This language implies that African people are responsible for their own poverty, without addressing social or environmental factors such as inadequate pay, climate change or lack of access to basic infrastructure such as water and healthcare. Crops can be genetically modified such that they produce greater quantities of yield with qualities like disease, drought and insect resistance or nutritional enhancement (Rock et al., 2023). However, these projects often operate with top-down governance to prioritise the donor's interests, with little input from African farmers or scientists (Rock et al., 2023). Furthermore, with technology production largely concentrated in the West, patents over genetic modification and gene editing are predominantly held by

Western institutions, which restricts access to African scientists. This is in spite of research evidence being largely drawn from the African continent, mirroring colonialist patterns of extracting resources and labour from Global South in order to benefit the Global North (Rakotonarivo and Andriamihaja, 2023). Research showed that genetically modified crops were 5 to 10 times more expensive than the original crops (Fischer, 2021). The detrimental effects on the livelihoods of those selling non-modified crops were not studied, while wider environmental concerns regarding impacts on ecosystems and agroecology were largely ignored (Deutsche Welle, 2022). The ethical and health implications of GM crops that are a staple part of a massive population's diet are rarely mentioned either – this prompts the question: who actually benefits from GM crops? Forcing African farmers and African markets to increase sales of GM patented seeds as opposed to traditional resources thus appears to be yet another neocolonial, white saviour complex-exhibiting project seeking to increase Africa's dependence on Western technology, primarily benefiting Western pharmaceutical and research institutions. The Gate's Foundation clearly exhibits paternalistic, culturally superior attitudes in their approaches to philanthropy, while failing to empower the people they allegedly aim to help.

Ethical Arguments in Favour of Acting to End Poverty

Philanthrocapitalist organisations, as evidenced above, often act unethically, manipulating international institutions like the WHO for self-serving interests. This undermines global efforts to reduce poverty and increase global health. One theory on reducing the growing influence of philanthrocapitalism is to work towards a redistribution of wealth. Here I will summarise an ethical argument in favour of supporting this theory. Drawing from Peter Singer's (1972) utilitarianist approach, the average person in the West, relative to the average person in poverty, has such an excess in wealth that a relatively small donation would massively help an individual person in poverty – as such, the average person has a moral duty to donate to worthy causes. However, considering that the wealthiest 1% of the global population hold 45% of total wealth, the potential impact that their wealth can make on global poverty makes it arguable that the responsibility lies almost entirely in their hands and not the remaining 99% of the population (Buchholz, 2022).

Philosopher Thomas Pogge (2005) argues that we have a negative duty to stop (or at least decrease) our contributions to global economic institutions or companies which perpetuate global disparities through neocolonial expansion, operating monopolies or unethical, exploitative practices, otherwise we are morally complicit in their crimes. In cases where such information is obscured, I would add that we have a moral duty to enquire about the ethics of the companies with which we engage. Furthermore, according to Weidel (2016), capitalist societies forces us to embrace the unnatural ideology of “the rugged individual”, which indoctrinates people to accept that they are independent, self-reliant beings and as such, their dignity is attached to these values. Interacting with people in poverty (increasingly common with social media) disgusts “the rugged individual” as they are perceived to have no dignity, and therefore we choose not to help (Weidel, 2016). Marx argues that this goes against our shared human essence (our “species-being”), which is fundamentally in connection with others through empathy, dependency and need (Petrovic, 1963). Although Weidel (2016) refers solely to direct interaction with a person in poverty, I would extend this logic to engaging with unethical institutions too. Therefore, to help people in poverty whether directly or indirectly, as opposed to turning a blind eye, is to embrace our fundamental human nature and reject ideologies imposed collectively on society through capitalism.

Since a significant majority of the global population follow an organised religion, and moral values in religious societies are heavily derived from religious scripture, religious arguments in approaches to economics and wealth are equally important to discuss. Here I will discuss the Islamic view on wealth and the Islamic Economic System.

The Prohibition of Usury in Islam

Since religion relies on an absolute divine accountability and judgement mechanism, this is reflected in the behavioural assumptions built into the Islamic Economic System. In Islam, the absolute ownership of all things on Earth belongs solely to God, which God has subjected to mankind's service on Earth, for which mankind will be called to account. This is a motivation for acting ethically (Ayyaz, 2010). The Quran states that: “In their wealth they acknowledge the right of those who asked and of those who could not” (Chapter 51: Verse 20) – this reflects the right of an Islamic society, including skilled/ unskilled workmen, the supplier of capital and the community as a whole, to shares in the wealth of

those who own it (Ayyaz, 2010). Overall, Islamic normative rules combine ethical responsibility with legal responsibilities as derived from the Quran, such as the prohibition of usury or interest (Qasaymeh, 2011). This prohibition is made on the basis of usury conflicting with the Islamic Principle of Distributive Equity and leading to unjust accumulations of wealth: “Interest in any amount acts in transferring wealth from the assetless section of the population” (Visser and McIntosh, 1998) (Choudhury and Malik, 1992, p. 51).

Prohibiting usury is not an exclusively Islamic perspective – the Lutheran Council of 1515 interpreted usury to be “when gain is sought to be acquired from the use of a thing, not in itself fruitful (such as a flock or a field) without labour, expense or risk on the part of the lender,” and therefore usury is unearned income, while Birnie (1952) reinforced the view that life without labour is unnatural (Visser and McIntosh, 1998). Combining this with Marx’s view that acting against our human-nature is a sign of being a slave to capitalism (or being afflicted with the unnatural ideology of “the rugged individual”), this leads to the conclusion that usury is unnatural and therefore immoral, both from a religious and a secular perspective (Petrovic, 1963).

Implementing a Global Islamic Economic System

Following on from this, a global implementation of interest-free Islamic Banking systems could provide the mechanism for an equitable redistribution of wealth. The systems are focused around two financially equitable approaches: “*mudarabah* – a joint venture between the bank and a ‘partner’ with both contributing to the capital of the project and sharing the profit or loss, and *musharakah* – in which all the capital for an investment is provided by the bank in return for a predetermined share of the profit or loss of the business undertaking” (Hanif Basit et al., 2004, p. 37) (Kahn & Mirakhor, 1986). At first glance, it appears to be a disadvantage that money-lending institutions can gain or lose capital depending on the success of the project, especially in a globalised economy where loans are often in the millions, yet macroeconomic models based on Islamic Economics predict that the rate of return of capital based on *Mudarabah* investments is as equally viable in the long term as rates of returns in credit-based economies (Zangeneh, 1995).

Alongside this, there is increased motivation for lenders (whether this is the World Bank, or a national bank) to be informed about schemes and provide expert guidance,

support and resources throughout the process, which would increase the chances of success overall (Zangeneh, 1995). Other important principles of Islamic Economic Systems is that decision-making must not be on an individual basis, but must reflect the opinions of board-members and shareholders and be made with the overall benefit of society in mind (Wilson, 2015). Islamic economist Syed Naqvi focuses on the micro-economic level, arguing that while Muslims have free will (*ikhtiyar*) to execute business decisions as they wish, it is their moral duty (*fardh*) to serve society in order to become closer to God, an ultimate goal in Islam (Wilson, 2015). In the absence of any realistic accountability mechanisms or adequate global governance in the current economy, the Islamic view of divine accountability and judgement motivating morality and accountability seems as viable a solution as any.

However as there are limited case-studies to draw on, there may be difficulties in applying the Islamic system to real-life ethical dilemmas such as prioritising different social issues over others. This is especially complicated considering the vast difference of opinions that already exists amongst Islamic scholars. Another criticism of the Islamic Economic System is its assumption that citizens will act ethically in line with Islamic principles, however this assumption does not apply to non-Muslims, and as such has limited applicability when applying this system to a global economy. However, given that Islam is the fastest growing religion in the world and set to surpass Christianity by the end of the century, its potential applicability is worth reconsidering in the future (Lipka and Hackett, 2017). Overall, this system decreases the risk of domination of philanthrocapitalism for three main reasons: it leads towards a fairer distribution of wealth where unfair accumulations do not exist; people are more inclined to act morally and work towards social justice due to the promise of absolute accountability for all individual deeds, and where racial hierarchies do not exist since all human life is valued equally in Islam.

Although Islamic literature focuses mainly on applying these systems within individual sovereign states, I argue that in line with the shift towards a globalised economy, these principles should be also applied globally to institutions such as the World Bank. After the financial crisis of the 1980s, the World Bank provided long-term loans along with economy and policy reform advice to LMICS, forcing these states into crippling debt (Bretton Woods Project, 2020). Pope John Paul II (1987) stated the following regarding the debt crisis: ‘Capital needed by the debtor nations to improve their standard of living now has to be used for interest payments on their debts’.

Needless to say, this situation could've been avoided if equity-based financing options with reform recommendations based on establishing social justice and equitable redistributions of wealth had been used, as opposed to interest-based finance.

Conclusion

To conclude, philanthropic organisations positively serves society in material ways, such as through Gates' malaria eradication campaigns, easing significant financial burden from the government in funding global development goals. However, the same demographic of wealthy white males from the US dominates the philanthrocapitalist scene (despite an marked increase in international philanthropic actors) who exhibit the same orientalist views in their philanthropic visions. Furthermore, the public narrative surrounding philanthrocapitalists often hides unethical and illegal practices such as top-down governance approaches that prioritise Western interests and downplay the needs of local scientists and researchers. This is characteristic of the white saviour complex, where wealthy white individuals are performatively altruistic and present themselves as wanting to "give back" to primarily black people and people of colour, without acknowledging the underlying power imbalances and social hierarchies that perpetuate racial inequalities in the first place.

The origins of these processes stem from the origins of capitalism, according to Marx, namely accumulation of capital by dispossession and centralisation of capital. These exploitative processes progressively drained the peripheries, or the Global South, of their resources. As a result, social welfare structures such as education and healthcare were left largely underfunded. Literature focusing on colonialism, unless written from a feminist framework, largely fails to take into account women's social reproduction and household labour, which is likely intentional considering how much capitalist economies benefit from unpaid labour. Furthermore, due to a vast gap in the application of ethics within research, and an emphasis on research being value-neutral, there is a failure to acknowledge and condemn the depths of trauma caused by the West's exploitative practices through capitalism and colonisation. Critical reflexivity, rooted in a feminist ethics of care framework, addresses this by encouraging researchers to situate themselves within the sociopolitical context they are studying.

Turning to current-day effects of capitalism such as unequal accumulations of wealth, this has the undue consequence of extremely wealthy individuals gaining

political power and manipulating public institutions for self-interests. The Rockefeller Foundation, held in high prestige in mainstream media, manipulated and controlled the medical industry in the US, changing medical curriculums to favour patented drugs owned by Big Pharma over natural remedies, and reducing opportunities within the medical field for black people and women, demographics that remain underrepresented in medical research to this day. Alongside this, the Gates Foundation favour technological solutionism such as GM crops over sustainable social and healthcare reform, benefiting their own Foundation Trust members who hold positions within pharmaceutical companies.

In order to work towards a redistribution of wealth and alleviation of global poverty, Singer argues that we all have a moral responsibility to donate small portions of our wealth given the amount of difference it makes on an individual level while Pogge argues that we have a duty not to financially contribute to companies engaging in unethical, exploitative practices. In order to counter the capitalism-imposed ideology of "the rugged individual", Marx argues that helping to alleviate poverty (directly or indirectly) connects us to our "species-being" and is thus the morally correct position. Islamic theology presents the most viable method for establishing a redistribution of wealth by arguing that in the Islamic Economic System, equity-based finance should replace usury/interest-based finance, with the underlying assumption that citizens will act ethically. To supplement this article, further research could be taken into successful attempts to redistribute wealth locally, and how these could be applied to the global economy.

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International Medical Students Activities: WAMY Efforts

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IMAKSA-WAMY

The Islamic medical Association of kingdom of Saudi Arabia (IMAKSA) is supervising international student activities for FIMA (Federation of Islamic Medical Associations) through its student chapter (FIMASAC). IMAKSA is one of World Assembly of Muslim Youth (WAMY) volunteers' chapters located in Riyadh, Saudi Arabia. The mission of WAMY: "An international Islamic organization that sponsors youth for their advancement through quality programs run by workers and volunteers specialized in youth affairs".

The main objectives of WAMY are:

- Promoting and developing the role of youth in society
- Developing and strengthening the capabilities of young people and directing their efforts to serve their communities.
- Nurturing talented and gifted youth.
- Contributing to the establishment of development and social facilities for youth.
- Developing partnership with international bodies and youth associations.
- Supporting communities in need and responding to emergencies and disasters.

FIMASAC was formed due to the need to engage students or the young generation from early in their career into the FIMA main objectives which include:

- To foster the unity and welfare of Muslim medical and health care professionals all over the world.
- To promote Islamic medical activities including health services, education, and research, through cooperation and coordination among member organizations.

- To promote the understanding and application of Islamic principles in the field of medicine.
- To mobilize professional and economic resources to provide medical care and relief to affected areas and communities.
- To promote the exchange of medical information and technical data and expertise among member organizations.

FIMASAC

FIMASAC started earlier, and has been active since 1998 and over the years the chapter has developed programs and activities which can be summarized as follows:

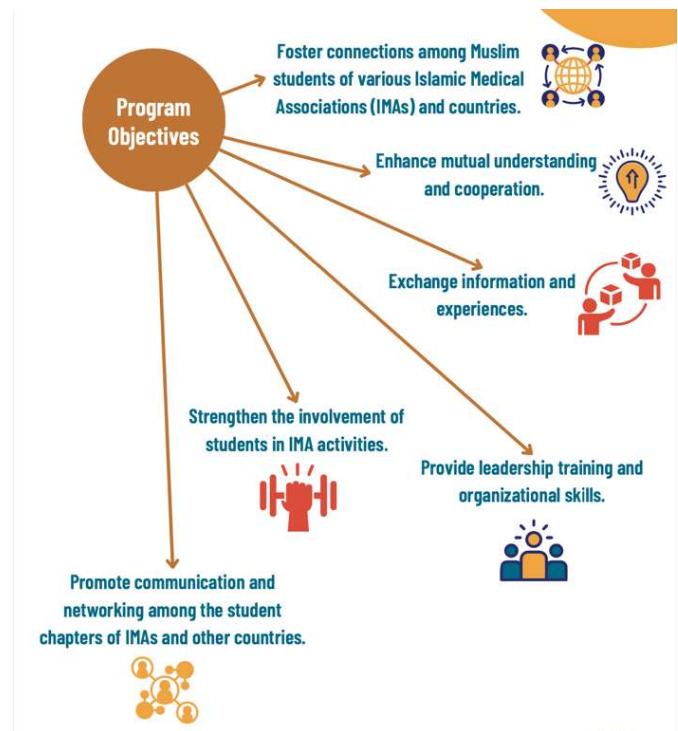
1- International Medical Student Camps

[Link:](#)

Last July 2023 was the 22nd. Medical Students Camp in Kuala Lumpur Malaysia. The Camp spread yearly over many countries around the world (see table for Theme and location of the last 5 Camps). The main objectives of the student camps can be summarized in the following diagram, which include:

- Fostering connection among Muslim students of various Islamic Medical Association and countries.
- Enhancing mutual understanding and cooperation.
- Exchanging information and experiences strengthening the involvement of students in the activities of the various Islamic medical Association.
- Providing a leadership training and organizational skills.
- Promoting communication and networking among student chapters of various IMA and other countries.

No.	Year	Date	Theme	Country
17 th	2017	16 th /Jul - 23 rd /Jul	Leadership for Medical Students	Istanbul, Turkey
18 th	2020	3 rd /Jan - 8 th /Jan	Muslim Health Professionals in Globalization Era	Kampala, Uganda
19 th	2021	29 th /Jul - 1 st /Aug	Health Professionals in Interacting World	Online (Facebook & Zoom)
20 th	2022	30 th /Nov - 4 th /Dec	Effective Habits of Successful and Influential Medical Professionals	Yogyakarta, Indonesia
21 st	2023	29 th /Jul - 3 rd /Aug	Muslim Health Professionals: Contemporary Challenges and Solutions	Kuala Lumpur, Malaysia



Camp objectives

The students will be nominated to attend the camp by the student chapter in each Islamic Medical Association. The nomination is based on the participation of the students in their local IMA. No direct registration will be entertained.

IMKASA will cover all expenses during camp which include accommodation, meals, and sponsor all academic activities. The local host Islamic Medical Association has an important role and contribution in the camp logistics, local transportation, and social and sport activities. Every camp has a scientific program in the morning and the rest of the day will allow students to practice social and sporting activities. As part of the need for the youth there will be sightseeing and touristic programs. Local community services are one of the important goals of the camp, measuring biometric health parameters in the nearby villages and Conducting CPR and first aid rescue for public in Mosques.

During the COVID era in 2021, the student camp was done virtually over 3 days using a virtual platform and engagement in social media programs.

2- Umrah Program:

“Allah invited me to perform Umrah with a group of female medical students from all around the world.

21st International Camp for Medical Students 2023

Muslim Medical Professionals: Contemporary Challenges and Solutions

Organized by:
Islamic Medical Association Saudi Arabia **IMKASA**
World Assembly of Muslim Youth **WAMY**
In Collaboration with:
Islamic Medical Association of Malaysia **IMAM**

Objectives

- Boost relationship among muslim medical students
- Exchange informations and Experiences
- Communication and networking among the student chapters
- Leadership training and organizational skills

Program

- Thematic lectures
- Leadership presentations
- Interactive sessions
- Tourism, field trips & sports

Target Audience
Students from registered IMA

Venue: Kuala Lumpur, Malaysia

29 JUL - 3 AUG 2023

Arrival Friday - 28 JUL

Departure Friday - 4 AUG

Registration now open until 30 JUN 2023

Through student's chapter in each IMA

FIMA IMAM

Poster for last Summer Camp in Malaysia

Alhamdulillah, it was the most blessed experience I have ever had."

This is Sister Manal Faridi, Medical Student, Islamic Medical Association of Australia.



13TH UMRAH FOR MEDICAL STUDENTS

12-16 SHABAN 1445
22-26 FEBRUARY OF
2024

ORGANIZED AND HOSTED BY
ISLAMIC MEDICAL ASSOCIATION IN KINGDOM OF SAUDI ARABIA (IMAKSA)
WORLD ASSEMBLY OF MUSLIM YOUTH (WAMY)

IN COLLABORATION WITH
FEDERATION OF ISLAMIC MEDICAL ASSOCIATIONS STUDENTS AFFAIR CHAPTER (FIMASAC)

SAVE THE DATE

- ARRIVAL TO **MADINAH**
WEDNESDAY 21 FEB
- 22-24 FEB IN **MADINAH**
- 24-26 FEB IN **MAKKAH**
- DEPARTURE FROM **JEDDAH**
27 FEB 2024

Deadline for Registration
1st February 2024

For Registration
click on the icon or scan the QR code below

Registration





The main purpose of the Umrah Program is to clean the soul of past sins. It is also seen as protection from poverty and the burdens of life as a pilgrim is spending their wealth and time in the way of Allah the Umrah program happens annually and targets Muslim medical students representing various Islamic Medical Associations (IMAs) from all over the world and it lasts 5 days. Last February was the 13th Umrah Program series. We expect delegates representing more than 15 Islamic Medical Associations (IMAs) coming from different parts of the world. Umrah's target audiences are all undergraduate students, postgraduate students, and freshly graduated students from different health fields. "Health" term in this context includes all health-related sciences such as medicine, pharmacy, and nursing. There are NO registration fees for the Umrah. Accommodation and meals as well as local arrangements and transportation will be provided free of charge by IMAKSA/WAMY during the sole days of Umrah activities. Delegates are responsible for expenses of their stay during days outside the program period if needed.





Mountain of Uhud



King Fahad Complex for Quran Printing



Sirah Museum in Madinah

3- FIMASAC Inspire Webinars:

Monthly serial webinars to connect all students from all over the world into inspiring topics delivered by an expert in that in the field to transfer the experience from two young generations.

The topics discussed in Inspire series in the last two years as:

Date	Islamic Medical Association	Topic	Speaker
25 th /Feb/23	Muslim Health Workers Association of Ghana	Strategic Vision and Plan in the Life of a Muslim Health Student at Tertiary Level	Dr. Abdul NasiruDeen
25 th /Mar/23	Jordan	Islamic Medical Jurisprudence Principles	Dr. AmaarDauod
29 th /April/23	Palestine	Islamic Health Care Systems: Lessons from History and Future Directions	Dr. Muhammed Ghneim
27 th / May/23	Pakistan	Gender Integration for a Muslim Medical Professional	Prof. Ayesha S. Abdullah
30 th /Sept/23	IMAU (Uganda)	Islamic Teaching on Disease Prevention and Health Promotions	Dr. Naziru Rashid
28 th /Oct/23	IMAKSA (Saudi Arabia)	Worldwide Absence of Islamic Values & Ethics in Health Practice: Facts & Impacts	Prof. Omar Hasan Kasule
25 th /Nov/23	SIMA (Somaliland)	Doctor-Patient Communication with Emphasis on Psychological Aspects	Dr. Adam Ahmed Dahir
30 th /Dec/23	IMAC (Cambodia)	Healthy Living in Muslim Healthy Communities	Dr. Muslim Abbas
30 th /Mar/ 24	AIMA (Australia)	Ramadan and Brain Health	Dr. Omer Shareef
27 th /April/24	IMANA (North America)	Our Journey in Volunteering Plastic Surgery: Stories and Lessons	Dr. Parvaiz Malik

Social Media Competition

All student chapters from all Islamic Medical Association participate at the same time in one competition utilizing social media in performing campaign in one health topic such as Fighting Tobacco. Students will have a certain date to launch the campaign. The material used will include posters, motion graphics, short videos and short messages spread by different platforms (X or Twitter, Instagram, Facebook etc.)

The criteria the judges use is as following:

Innovation

Authenticity of Ideas including referencing

Clarity of message.

There is a prize for the winning team and a certificate of achievement.

The winning team consist of 5 students receiving a prize and certificates during the 2022 PIMA convention.

References:

1. FIMA Official Website <https://fimaweb.net>
2. FIMASAC website:
<https://sites.google.com/view/fimasac/home>



Randomised Control Trial of a culturally adapted psychological therapy for Muslims versus treatment as usual.

Mir G, West R , and Meer S.

Leeds Institute of Health Sciences, School of Medicine, University of Leeds.

Correspondence: g.mir@leeds.ac.uk

Presented as a poster at the BIMA National Conference in Warwick University on 31.8.2024

Background:

Behavioural Activation (BA) has been found to be as effective at treating depression as CBT and has been successfully adapted to be appropriate to the needs of minority groups (Mir et al, 2015; Kanter et al, 2010).

WHO and NICE guidelines suggest that psychotherapies should be culturally appropriate to effectively meet the needs of diverse communities. However, poor uptake of psychological therapy by religious minority groups in the UK has been reported (Choudhry and Mir, 2021).

Method:

A randomised controlled trial in a Northern England city, with a considerable Muslim population. Individuals accessed either culturally adapted therapy (BA-M) or usual treatment via NHS primary care (IAPT) or a voluntary sector service. Participants were randomised to receive between 6-12 sessions of the culturally adapted therapy or Treatment as Usual (TAU), which consisted of either CBT (via IAPT), or a range of social activities offered by one of three voluntary sector services participating in the study.

Participants were invited to be interviewed about their therapy experience, including how acceptable they found the BA-M approach and how it compared to usual support.

Results:

142 participants were recruited to the study, with 80 allocated to receive BA-M and 62 to receive TAU. Participants were interviewed about their experiences of BA-M (N=34), from both the voluntary sector and NHS services. Participant interviews included service users (n=18), included some who dropped out of therapy; therapists (n= 9) and managers/supervisors (n= 7).

Statistical evaluation showed BA-M significantly reduced depression scores compared to TAU, primarily through improved engagement with therapy. Both service users and therapists perceived the adapted approach to be more meaningful and motivating than TAU. Where delivery did not follow the protocol, some service users expressed dissatisfaction, indicating the importance of values assessment in delivery of BA-M.

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Mental Health Symposium 2021: Empowering Mental Wellbeing Among Malaysians Living Across Borders

Hidayatul Nabila Rosaidi, Siti Sarah Mohd Nor, Muhammad 'Afif Amran, Yusra Syazana Mohd Rodzi, Syafira Mohd Shaman, Juiliana Hamzah, Nusayba Shaharom, Nurfariyah Muhammad Reza, Emilia Habiba Mohamad Jamil, Mohd Akif Farhan Ahmad Basri

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Keywords: mental health, symposium, IKRAM UKE, Health & Wellbeing cluster

Presented as a poster at the BIMA National Conference in Warwick University on 31.8.2024

Introduction: The COVID-19 pandemic had a profound impact of global crises on mental health, amplifying existing inequalities across race, ethnicity, gender, and socioeconomic status. The 2021 World Mental Health Day campaign, themed 'Mental Health in an Unequal World,' seeks to address these disparities, advocating for universal access to mental health services regardless of background or location.

Project aim: In alignment with this, Health and Wellbeing (HWB) Cluster of IKRAM United Kingdom & Eire (IKRAM UKE) has taken an initiative to organise a symposium, aiming to increase awareness on mental health among Malaysians, in particular those who are living abroad in UK and Ireland. This symposium served as a dynamic platform for renowned experts to illuminate critical mental health issues, promote a culture of discussion, and equipping participants with knowledge and practical skills for mental wellbeing.

Methodology: Held virtually via Zoom and live-streamed on Facebook, the symposium was structured into three targeted sessions catering to diverse audience groups within the Malaysian community. A forum focusing on perinatal mental health was conducted at the beginning of the event, uniting medical experts and experienced mothers to discuss emotional wellbeing during this crucial period. The subsequent session, titled 'Raising Our Young Minds,' delved into effective parental strategies for nurturing children's emotional development. Recognizing that students constitute a substantial segment of the Malaysian community abroad,

we introduced practical methods such as mindfulness and art therapy to foster mental health wellbeing.

The symposium garnered significant global participation. Analysis of collected feedback indicated high satisfaction levels, with nearly half of respondents expressing extreme satisfaction (48.9%) and the rest rated as very satisfied (46.2%). More than half of participants highly recommended the event to their peers.

Conclusion: Mental Health Symposium 2021 (MHS 2021) epitomized a pioneering effort by the Health & Wellbeing Cluster of IKRAM UKE to promote the holistic message of health, with a specific focus on empowering mental wellbeing among Malaysian community living across borders. The overwhelmingly positive feedback underscores the program's success in advancing its mission.

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Significance of blowing air from mouth on food and drinks, from *Shariah* point of view, and its explanation, based on medical and scientific research

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Keywords: *Blowing food and drink, carbonic acid, acidosis/alkalosis, EAR (Expired air resuscitation), capillaries/alveoli*

Abstract

Islam, as a complete code for human life, has enjoined formal etiquettes even for healthy food intake. Usually when the food or drink is hot we are habituated to blow air from mouth to cool it. However, the Prophet ﷺ has forbade from such an act. He ﷺ, has also forbade from breathing inside a vessel. The dangers of blowing the hot food and drinks, can be explained scientifically: The steam from the hot drinks/food is water vapor (H_2O). When we blow the food/drink, we release carbon dioxide (CO_2) from the mouth. According to the chemical reaction, the water vapor reacts with CO_2 to form carbonic acid compounds that are acidic, and which can be injurious to our health. This scientific explanation concurs with what the Prophet ﷺ told the *Ummah* fifteen centuries back. What about mouth-to-mouth resuscitation/Expired Air Resuscitation (EAR)? A person who requires EAR is usually in danger of dying from hypoxia, or loss of oxygen. Therefore, although the oxygen content is less in our expired air, it can still work to revive a person. In the matter of contagious diseases like COVID-19, this unique Prophetic advice to avoid blowing air from mouth on food and drinks is valuable to stop the spread of the disease. In fact, possibly one can relate all other mitigating methods, like mask usage, social distancing and quarantining to be originating from this unique fifteen centuries old Prophetic advice! In the matter of blowing air after reciting verses of Qur'an or a supplication (*Dua*) on oneself or on another person, this blessed act is established by the Sunnah of our beloved Prophet ﷺ. Apparently, it might look like blowing of air, but actually we say شف (Shif), which means O' Allah give Shifa (cure from ailments).

Introduction

Islam, as a comprehensive way of life, has codified every aspect of daily life through the blessed practices of the Prophet ﷺ and his companions. The life of the holy Prophet ﷺ and his blessed companions, is a perfect role model not just for the Muslims, but in fact for the whole of humanity till the day of judgement [1], [2]. One may overlook some of the practices of the Prophet ﷺ and the companions as insignificant, but the books of *Ahadith*, are replete with topics like food intake. One practice

which drew the author's attention, and which looked insignificant outwardly, was that the Prophet ﷺ never blew air from his mouth on food or drink and forbade his companions from doing so. When we analyze this blessed practice of the Prophet ﷺ from a scientific/medical point of view, the subject not just became highly interesting, but also made us realize that it is a health hazard, when not practiced.

The serious issue is that when this blessed *Sunnah* of the Prophet ﷺ is overlooked, and when one blows air on the

food and drinks from our mouth, then there is a high possibility of production of carbonic acid in our food/drinks and the intake of such edibles can cause an increase in carbonic acid levels in the blood, which is injurious to our health.

From this practice of the Prophet ﷺ, we learn an important lesson, that all of his *Sunnas* during his whole life, no matter how insignificant they might look, are important and significant. Be it as simple as food intake, there are plethora of references to show how intricate the Prophet ﷺ was in his practices.

Our beliefs dictate that as Muslims, we accept without any hesitation all the orders of *Allah Tala*, as implemented by the Prophet ﷺ in his blessed life, even if in some cases we have difficulty in understanding them. It is irrelevant what science says and doesn't say about it. Now, after fifteen centuries, if science comes out to positively explain some of the aspects of the blessed life of the Prophet ﷺ, that will be an extra. As Muslims, from the point of view of our beliefs, we are not dependent on science whatsoever. [1], [2]

In this paper, we have tried to explain the probable scientific/medical reasons for the Prophet ﷺ not to blow air from his blessed mouth on food and drinks, and also prohibiting his companions from doing so.

The command of *Allah Tala* to consume what is halal and pure

Although, per se, there is no clear cut mention in the Qur'an about the prohibition of blowing air on food and drinks, but then all the *ahadithsharif* of the prophet ﷺ, are in fact the *tafseer* of the *Qur'an*. The following verses of the Qur'an, are very clear in commanding the people to consume what is halal and pure:

يَا أَيُّهَا النَّاسُ كُلُوا مِمَّا فَلَاحَ صَاحِلِ الْأَرْضِ وَلَا تَتَّبِعُوا أَهْوَاءَ الشَّيْطَانِ ۚ إِنَّهُ لَكُمْ عَدُوٌّ مُبِينٌ

O mankind! Eat of that which is lawful and good on the earth and follow not the footsteps of *Shaytan* (Satan). Verily, he is to you an open enemy. *SuratulBaqara*, verse: 168

IbneKaseer RA in his *tafseer* of this verse, states that “*Allah* stated that He is the Sustainer for all His creation, and He mentioned a favor that He granted them; He has allowed them to eat any of the pure lawful things on the earth that do not cause harm to the body or the mind.” [3]

The Act of Blowing Air from Mouth on food/drink and breathing into the vessel, and its prohibition

Usually when the food or drink is hot we are habituated to blow air from mouth to cool it. However the Prophet ﷺ has forbade such an act. He ﷺ, has also forbade from breathing inside a vessel. Blowing air from mouth to extinguish a burning candle is also discouraged. In the following *AhadithSharif*: [4], [5]

حَدَّثَنَا أَبُو كُرَيْبٍ، حَدَّثَنَا عَبْدُ الرَّحِيمِ بْنُ عَبْدِ الرَّحْمَنِ الْمُحَارِبِيُّ، حَدَّثَنَا شَرِيكٌ، عَنْ عَبْدِ الْكَرِيمِ، عَنْ عِكْرَمَةَ، عَنْ ابْنِ عَبَّاسٍ، قَالَ لَمْ يَكُنْ رَسُولُ اللَّهِ ﷺ - يَنْفُخُ فِي طَعَامٍ وَلَا شَرَابٍ - وَلَا يَنْتَفِسُ فِي الْإِنَاءِ "

رواه سنن ابن ماجه كتاب الأطعمة

It is narrated by *Ikrama (RA)* that *Ibne Abbas (RA)* said: The Prophet ﷺ never blow onto his food or drink, and he did not breathe into the vessel. Grade: *Sahih (Darussalam)* [4]

حَدَّثَنَا أَبُو بَكْرِ بْنُ أَبِي شَيْبَةَ، حَدَّثَنَا دَاوُدُ بْنُ عَبْدِ اللَّهِ، عَنْ عَبْدِ الْعَزِيزِ بْنِ مُحَمَّدٍ، عَنْ الْحَارِثِ بْنِ أَبِي ذُبَابٍ، عَنْ عَمِّهِ، عَنْ أَبِي هُرَيْرَةَ، قَالَ قَالَ " إِذَا شَرِبَ أَحَدُكُمْ فَلَا يَنْتَفِسُ فِي الْإِنَاءِ فَإِذَا أَرَادَ أَنْ يُعَوِّدَ رَسُولُ اللَّهِ ﷺ - فَلْيَنْتَفِسْ فِي الْإِنَاءِ ثُمَّ لِيُعِدْ إِنْ كَانَ يُرِيدُ "

رواه سنن ابن ماجه كتاب الأطعمة

It was narrated from *Abu Hurairah RA* that the Messenger of *Allah* ﷺ said: “When anyone of you drinks, let him not breathe into the vessel. If he wants to continue drinking, let him move the vessel away (in order to breathe) then bring it back, if he wants.” Grade: *Hasan (Darussalam)* [5]

Imam Al-Shaukani RA, explains this *Hadith Sharif* in his book *Nailul-Awtaar* [6]: Relating to his ﷺ saying (he did not breath in the vessel) this is a prohibition from breathing in that which is drunk from, in order that saliva/spit is not let out from the mouth leaving it (the vessel) unclean for the next person who drinks from it, or causing a foul smell to be attached to the water or vessel. The word (vessel) here includes the vessel which is used for food and drink. So one should not blow in the vessel in order to remove that which is in the water from dirt or what is similar to that, for verily blowing generally is not free from saliva which is deemed unclean or filthy. Likewise, one should not blow in the vessel in order to

cool down hot food, rather one should be patient until the food has cooled down itself as previously mentioned. One should also not eat the food whilst it is hot, for verily the blessing will depart from it and it is from the food of the people of the hellfire.

Imam Al-Nawawi RA elaborated on the *Hadith* about the prohibition of breath and blowing into food and drink, and said: "The prohibition of breathing in the vessel including ethics because feared it contaminates water or cause the smell awful or it is feared there was something from the mouth and nose are falling into it and things of that sort." [7]

Imam Ibnu al-Qayyim RA commented on the *Hadith* that it is forbidden to blow into hot drink: "There is prohibition to blow into drinks because it raises the awful odor that comes from the mouth. Smells bad and can cause people not to drink it, more so if the person who blew the whiff of mouth are changed. In summary this caused the breath of the people who blow it would be mixed with drinks. Therefore, the Prophet ﷺ forbade two things at once, i.e. breathe into the vessel and blow it." [8]

Possible scientific explanations for these prohibitions [9]

The dangers of blowing the hot food and drinks, can be explained scientifically. The steam from the hot drinks/food is water vapor (H_2O). When we blow the drink/food, we release carbon dioxide (CO_2) from the mouth. According to the chemical reaction, the water vapor reacts with CO_2 to form carbonic acid compounds that are acidic: $CO_2 + H_2O \Rightarrow H_2CO_3$. Actually there is already naturally occurring carbonic acid (H_2CO_3) in blood that is useful to adjust the pH (acidity level) in the blood. Blood is the buffer (which can maintain the pH of the solution) with a weak acid H_2CO_3 and the conjugate base of HCO_3^- so that the blood has a pH of 7.35 to 7.45 with the following reaction:



The body uses a pH buffer in the blood as a protection against the changes which occur suddenly in blood pH. Abnormalities in the mechanisms controlling the pH, can cause one of two major diseases in the acid-base balance, namely acidosis or alkalosis. Acidosis is a condition where the blood has too much acid (or a very low base) and often causes decreased blood pH. While Alkalosis is a condition where the blood has too much base (or too

little acid) and sometimes cause increased blood pH. Carbonic acid (H_2CO_3) affect the level of acidity in the blood and it leads to a situation where the blood becomes more acidic than it should be. This results in the decrease in the blood pH, and it is known as Acidosis. Along with decreasing pH of the blood, breathing becomes deeper and more rapid as the body makes effort to reduce excess acid in the blood by lowering the amount of carbon dioxide. In the end, the kidneys also try to compensate this situation by issuing more acid in the urine. But both of these mechanisms will not be useful if the body is constantly producing too much acid, resulting in severe acidosis. In line with the worsening acidosis, the person begins to feel fatigue, drowsiness, nausea and experiences more confusion. If acidosis worsens, blood pressure may fall, causing shock, coma and even death. Our explanation is supported by similar studies by SitiHamidatulKhairah and DadangKahmadin 2021 [10], and by Laila Fathiyyah, in her thesis titled "The prohibition of blowing food and drink." [11]

The mouth-to-mouth resuscitation [12]

Expired Air Resuscitation (EAR), also known as mouth to mouth resuscitation, involves the transferring of expired air from a person to a victim of drowning, etc. Being able to give a person a fresh lease of life is undoubtedly one of the rarest and purest gifts of life that one can give. This is a form of artificial breathing or ventilation wherein the victim requires assistance in normal breathing. Air is forced down their respiratory tract until it reaches the lungs. This is done a number of times until that person can breathe on their own or until medical help arrives. When performing EAR on a person, we force our exhaled air into their mouth. However, basic biology tells us that the air we exhale is low in oxygen, and higher in carbon dioxide. Therefore, it is normal to wonder about the effectiveness of EAR. If a person is already in distress, then blowing carbon dioxide into them should bring about a negative effect? The answer lies in understanding the composition of the air that we inhale and exhale. The inhaled air has approximately 21% oxygen and less than 1% carbon dioxide (see fig. 1). Once the air enters our lungs, gaseous exchange takes place. The air that we exhale contains about 4% carbon dioxide and 18% oxygen. We use only about 3-4% of the oxygen that we take in. A person who requires EAR is usually in danger of dying from hypoxia, or loss of oxygen. In such a case, it is imperative that they receive oxygen. Therefore, although the oxygen content is less in our expired air, it can still work to revive a person. After all, half a loaf is better than no bread at all.

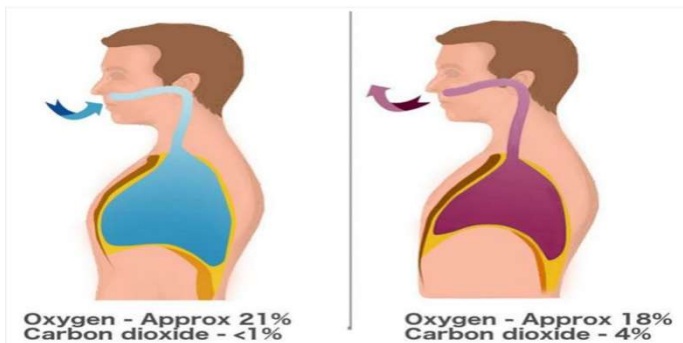


Fig 1: Concentration of O_2 and CO_2 in Inspired and Expired Air [12]

Composition of inhaled and exhaled air [12]

Inhaled air by volume is 78.08% nitrogen, 20.95% oxygen and small amounts of argon, carbon dioxide, neon, helium, and hydrogen. The gas exhaled is 4-5% by volume of carbon dioxide, about a 100-fold increase over the inhaled amount. The volume of oxygen is reduced by a small amount, 4-5%, compared to the oxygen inhaled. The typical composition is: 5-6.3% water vapor, 74.4% nitrogen, 13.6–16 % oxygen, 4–5.3% carbon dioxide, 1% argon and several parts per million (ppm) of hydrogen and carbon monoxide, 1 ppm of ammonia and less than 1 ppm of acetone, methanol, ethanol and other volatile organic compounds.

Breathing-a gift of life [13]

Breathing (or ventilation) is the process of moving air into and out of the lungs to facilitate gas exchange with the internal environment, mostly by bringing in oxygen and flushing out carbon dioxide. We breathe air that is 21 % oxygen, and we require oxygen to live. Our lungs are basically a long series of tubes that branch out from our nose and mouth (from trachea to bronchi to bronchioles) and end in little thin-walled air sacs called alveoli (see fig. 2). Surrounding each alveolus are small, thin-walled blood vessels, called pulmonary capillaries. Between the capillaries and the alveolus is a thin wall (about 0.5 microns thick) through which various gases (oxygen, carbon dioxide, and nitrogen) pass. When we inhale, the alveoli get filled with this air. Because the concentration of oxygen is high in the alveoli and low in the blood entering the pulmonary capillaries, oxygen diffuses from the air into the blood. Likewise, because the concentration of carbon dioxide is higher in the blood that's entering the capillaries than it is in the alveolar air, carbon dioxide passes from the blood to the alveoli. The nitrogen concentration in the blood and the alveolar air is about the same. The gases exchange across the alveolar wall and the air inside the alveoli becomes depleted of

oxygen and rich in carbon dioxide(see fig. 3). When we exhale, we breathe out this carbon dioxide enriched, oxygen-poor air.

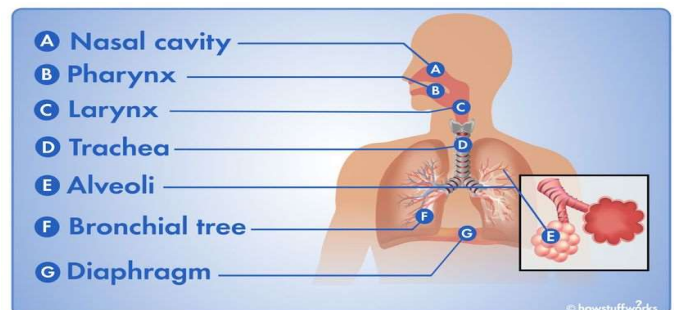


Fig 2: Human Pulmonary System [14]

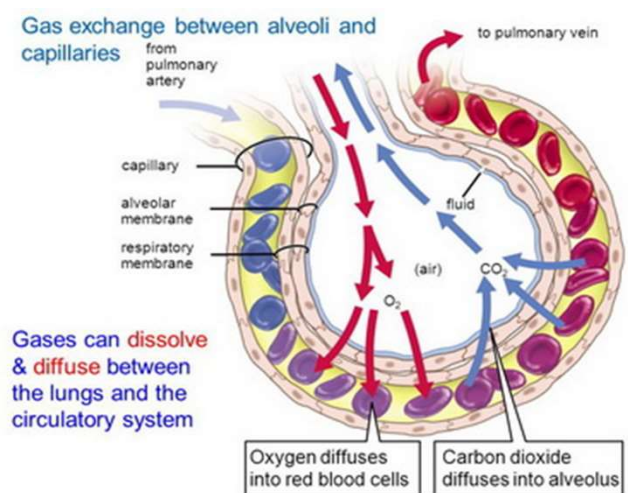


Fig 3: Gas exchange between alveoli and capillaries [15]

Alveoli

As illustrated in fig. 3, the alveoli are small air sacs within the lung parenchyma that originate from the terminal ends of alveolar sacs and ducts. The greater the surface area the lungs have for gas exchange, the greater is their efficiency to absorb oxygen. The 700 million (or more) alveoli found in both lungs, if flattened out, would cover an area of some 50-100 square yards. This is approximately the size of a tennis court, and is all neatly folded and bundled into the chest cavity. Each alveolus has a wall that is only one cell thick. A capillary wall has about the same thickness. The distance between air and blood is about 1/1000th of a millimeter. The oxygen is transported by the red blood cells, which squeeze single file through the pulmonary capillaries. Red cells are packed with hemoglobin, or red pigment, that attracts the oxygen. Carbon dioxide is diffused in the same way back through the capillaries and alveolar walls to be exhaled. [16], [17]

فَتَبَارَكَ اللَّهُ أَحْسَنُ الْخَالِقِينَ

So, are we not Correct?

Was not the Prophet ﷺ correct, when he ﷺ forbade blowing air on food and drinks? Now, after fifteen centuries science is proving after a thorough research, that what the Prophet ﷺ said was true!

Possible Mitigation of the contagious Diseases like COVID-19

A possible correlation might exist between this valuable Prophetic advice and the spread of contagious diseases like COVID-19. This unique Prophetic advice to avoid blowing air from mouth on food and drinks may be valuable to stop the spread of Corona Virus (SARS-CoV-2.) and for that matter, stopping the spread of any other virus or bacterial infection, any time, as a safe practice. Indeed, possibly one can relate all other mitigating methods, like mask usage, social distancing and quarantining to be originating from this unique Prophetic Sunnah. [1]

Blowing air after reciting the verses of the *Qur'an* or a Supplication (*dua*) on oneself or on another person?

This blessed act is established as a Sunnah of the Prophet ﷺ. Actually, in essence this act is not blowing of air from mouth. Apparently, it might look like blowing of air, but according to the author's learned teacher and mentor *Moulana Abdul Mateen Nomani Sahib, RA* (personal communication), actually we say شف (Shif), which means O' Allah give *Shifa* (cure from ailments)!

Conclusion

From the time of our birth till our death, Islam plays a crucial role in our lives, which we may not realize. Whether it is a minor or a major event, there is Islam which is having its footprints in our lives. There are thousands of *Sunnahs* of the Prophet ﷺ which can be proven scientifically. For example, take this Sunnah of the Prophet ﷺ of avoiding to blow air from mouth on food and drinks. Now scientifically and medically it is established that how much important it is to follow this Sunnah to save our bodies from injurious habits. It is important that the *Ummah* start sincerely practicing all the *Sunnahs* of the Prophet ﷺ, and inform the world the immense benefits of following them. [1], [2]

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A Guide for General Practice Clinicians to Optimise the Healthcare of Young People During Ramadan

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Introduction:

The RCGP Adolescent Health Group (AHG) is a special interest group committed to the health and wellbeing of Young People (YP). A YP is defined by The United Nations, for statistical purposes as those persons between the ages of 15 and 24 years [1].

We have chosen to look at the special considerations for YP choosing to fast during Ramadan as guidance for Primary Care Teams.

Ramadan is one of the central pillars of Islam and falls in the ninth month of the Islamic calendar. Muslims are obliged to fast from dawn to sunset for a month. There are groups of Muslims where fasting is excused and this should be determined in discussion with a trained Imam. The month of Ramadan may coincide with the time for a young person's study and revision to prepare for examinations which are mostly essential for achievement and future career progression [3] Muslim YP are generally required to fast from the age of 12 years onwards.

Top Tips:

1. **PREPARATION:** Pre-fast preparation matters. In-house information session to raise awareness and inform the Primary Care team. Provide YP friendly patient information such as social media links, websites and posters. Encourage YP to consult with the Primary Care team to review long-term conditions.
2. **ACUTE ILLNESS:** During a consultation for an acute illness during Ramadan the GP should ask the YP if they are fasting. This is required in order to make an accurate diagnosis and appropriate management plan.
3. **MEDICATION SWITCHES:** Liaise with Medication Management Teams and secondary care for expert guidance on medication switches to optimise disease management during fasting. Oral and Inhaled medications are not allowed during the fast. Topical, eye, ear and injectable medicines

are suitable. Diabetes management has been transformed by Continuous Glucose Monitoring. [2]

4. **HYDRATION AND SENSIBLE FOOD CHOICES:** Promote healthy eating and hydration after the days fast. Choose foods such as dates, nuts, falafel, salads, fruits and wholegrains. Advise avoidance of oily or sweet foods as these may trigger abdominal symptoms, fluctuating blood glucose levels and fainting. For pregnancy planning take pre-conception vitamins for a minimum of 12 weeks before stopping pregnancy-prevention. Young women benefit from iron rich foods.
5. **MENTAL HEALTH ISSUES:** Identify YP for whom fasting may be severely detrimental and arrange a consultation to check for competency. Conditions such as Eating Disorders may rapidly deteriorate with sustained fasting and it is sensible to have an informed discussion with local medical and religious advice. [9] NICE recommends rotation of injection sites in ED [12]
6. **CHOICE AND STUDY PLANNING:** Ensure that Clinicians are aware that YP and families should discuss decisions to fast with a trained Imam if needed. Muslim YP have usually been introduced to fasting at a younger age to acclimatise and may seek advice from religious authorities if educational or sporting activities coincide with long fasting days. Several agencies offer advice and resources for planning study.[3,11]
7. **SIGNIFICANT EVENTS:** Learn from any significant events (SEA) involving YP during Ramadan to share good practice and ensure safe fasting in future. Examples of SEA include not taking medication, suboptimal control of chronic medical conditions and syncope resulting in Accident& Emergency attendance.

Clinicians need to be aware of suitable alternative medication regimes much as modified release preparations.

8. **COMMUNITY INVOLVEMENT:** Liaise with local schools and national organisations to obtain Resource information about studying during Ramadan and work together for YP.
9. **EMBED ACCEPTANCE:** of Ramadan into the practice culture and develop a link with the Imam. Be mindful of how to conduct discussions with YP who do not feel able to fast this season and need support with communicating their decision. Seek out team members who are practicing and can therefore educate the team.
10. **FAMILY:** Remember that this is a time of increased spirituality and family connection. The emphasis is on giving to others and celebration of precious time together.

The psychological effects of fasting for Ramadan in YP is a subject that has not been extensively researched and this deserves further research as initial results are mixed. Particular care and a tailored proactive approach is required for some for whom Ramadan will bring increased medical risks especially if there are concerns about medication non-compliance, risks related to sleep disturbance or disordered eating. This collaborative writing group is working together to write a comprehensive article about the subject. The question about fasting with a diagnosed Eating Disorder such as ARFID, anorexia, bulimia, diabulimia or OFSED has been shared to a centre of expertise. [12] We shall include professional advice about appropriate management of this group of conditions. The authors welcome questions and expert resources to compile this article.

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Two Weeks in Hell on Earth; My Experiences in Hospital Theatres in Gaza - Reflections on the Dire Healthcare Situation in Gaza

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I was fortunate enough to spend some time in Gaza earlier in the crisis, and what I saw shook me to my core. Nothing I had seen or read in the news prepared me for the reality on the ground and the dire healthcare situation in the tiny strip. My reflections below are crucial to properly understanding the medical catastrophe that is unfolding as the world looks on, doing nothing.

In Gaza today, nearly all patients suffer from malnutrition, which severely impedes wound healing. The infection rate among patients is beyond imagination. Surgical instruments are rarely sterilised, and patients usually stay in overcrowded wards. This is all a result of a siege imposed by Israel, which has severely limited food and lifesaving medical supplies from entering Gaza.

My fellow medical professionals are struggling to help people in the handful of barely functional medical facilities left in the besieged Gaza Strip. They receive rare assistance from medical missions from overseas that manage to get Israeli approval to enter Gaza, like the PalMed mission that facilitated my trip to the European Hospital in Khan Younis, the only hospital functioning in southern and central Gaza. The scenes there are reminiscent of horror films: patients lie on the hospital floor propped against walls, with blood and other bodily fluids seen around waiting rooms.

The lack of equipment, medicine, and supplies has pushed the medical sector closer to total collapse. Looking around Gaza, it seems as if the apocalypse has arrived. People are on the brink, and the famine-like conditions have affected more than 90 percent of Gaza's

2.3 million people – most of whom are now internally displaced. The number of sick and wounded keeps increasing and overcrowding and poor sanitation due to lack of resources compound the challenges in the hospital. The depletion of resources means that even simple procedures are challenging, and malnourishment among so many patients complicates the healing process further. This is without mentioning the psychological effects on patients and the mental trauma their injuries cause them.

Post-operative planning and follow-up is a real challenge due to dwindling capacity in healthcare centers and the lack of medical professionals. Hundreds of medical staff have been killed or displaced. Patients who, in any NHS hospital, would receive follow-up care, however patients in Gaza have no option but to self-remedy, increasing the risk of complications, especially as malnourishment and poor sanitation are exacerbated by the war situation and the siege. The situation is inhumane; the people of Gaza are having their dignity stripped away from them. Around 80% of the patients I saw were women and children who could not even be accused of being combatants, which was especially shocking. There is no reason for them to be targeted in this way and to be victims of such senseless killing.

With the help of others, I am privileged to be involved in an initiative aimed at helping medical students in Gaza complete their studies in collaboration with the Islamic University and Al-Azhar University in Gaza, with contributions from other parties. This initiative aims to provide continuous education and training and to support

medical specialties throughout Palestine. The Medical Colleges in Gaza, including Al-Azhar University and the Islamic University, are the foundation of this initiative and will be responsible for supervising the curriculum, evaluation, and accreditation of university degrees. The curriculum for this initiative is managed primarily by the aforementioned institutions. Ultimately, this initiative would only be workable thanks to the support of external parties, with a South African company designing the educational platform for the initiative to support the victims of the Gaza War. Additionally, five medical colleges in Ireland have expressed readiness to contribute to this project, and over 250 consultants from across Europe have volunteered to teach and prepare the students for their studies.

Gaza has a young population; they have dreams and ambitions, and in the long term, I am confident in their abilities to achieve these dreams. But right now, the situation is so dire that even thinking about the decade ahead, we must be cautious. A lost decade is upon us if a ceasefire is not called imminently, with the secondary effects of the war in terms of the collapse of public health infrastructure and long-term effects of malnourishment and famine posing existential risks to the future of the young population. The people of Gaza deserve a better future; we must advocate on their behalf for a better one.

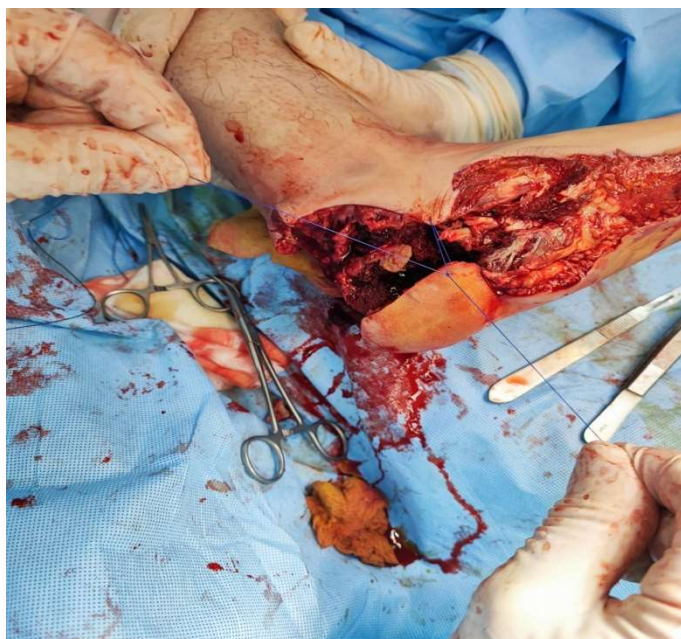


Figure 1: Attempt to Save a Young Girl's Crushed Foot from Amputation (picture is the courtesy of Dr Riyad Masharqah)



Figure 2: Managing complex wounds in Gaza presents a significant challenge (picture is the courtesy of Dr Riyad Masharqah)



Figure 3: Women and children are the main victims of the occupying forces (picture is the courtesy of Dr Riyad Masharqah)



Figure 4: Medical students have been great assets to the health sector in Gaza (picture is the courtesy of Dr Riyad Masharqah)



Figure 6 : Over 5,000 people have lost one or more limbs in Gaza (picture is the courtesy of Dr Riyad Masharqah)



Figure 5: A significant number of children sustain severe burns (picture is the courtesy of Dr Riyad Masharqah)

Keep doctors to save lives not to take them away

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As per J. Chisholm article in BMA on 27/7/24 (1), the BMA adopts a neutral position on physician- assisted dying. (1) There was more than one survey; the last was by BIMA a few weeks ago (in July 2024).

There have been a few viewpoints regarding the assisted dying legislation between enthusiasts and opponents and each team articulates their points as much as they can to justify their views. In the midst of this, doctors are torn between the two parties depending on their experience from their patients, even family members and friends as well as of course their beliefs whether they are brave enough to declare them or they keep them to themselves so not to be accused of any bias.

Dragging doctors into this goes against their fundamental role to save lives. If people want this, why do the regulators not create a new category of professionals; let us call them life terminators (LT)! They should be hired to basically terminate life and they don't need to be doctors. Train them under the army or police to be professional and swift in their role. They can have discussions and more than one consultation session with

the person who wants to hire them. They can even show their clients videos of how they do it before finally agreeing on a clear contract. Let all this process to be done by politicians, social services and keep the medical establishment away from it and don't drag them in something they never thought they will be part of when they chose medicine as their career. **Keep doctors to save not to take lives away.** It is tempting to quite religious references, regardless of our faiths, however when you are forced to do something against your will one of the basic strategies is to change the rules of the game by basically taking the job at hand to others who may be interested.

The traditional word for a doctor in old Arabic and Islamic history is (Hakeem) meaning wiseman. If wisdom is simply to apply knowledge in a timely and right manner, then the wisdom that almost all doctors committed their lives and training for is to save lives. In that sense, keeping doctors away from this discussion is what we should aim for if we cannot stop it from happening.

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Professor Muhammad Zafer Wafai - Obituary

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With great sorrow and sadness, we announce the passing of Professor Muhammad Zafer Wafai to the most merciful, on Saturday, 29 June, 2024, in Houston-Texas. (USA), May God have mercy on him and grant him a spacious paradise.

Professor Muhammad Zafer Wafai, was a son of Aleppo, and one of the most famous ophthalmologists in the world.

- He was born in the city of Aleppo (Syria) in 1939.
- He obtained a high school qualification from Hanano High School, Scientific Branch, in 1960.
- He joined the University of Damascus and obtained a medical degree in 1967.
- In 1969, he travelled to the USA armed with his faith in God and his endless ambition, and he worked in a number of hospitals in the state of Michigan. He moved through a number of positions until in 1977 he became a lecturer at Harvard University - Boston, School of Medicine - Department of Retina.
- In 1983, he moved to the Kingdom of Saudi Arabia to establish and head the Department of Retinal and Laser Surgery at King Khalid Ophthalmology Specialist Hospital in the capital, Riyadh. In addition, he was studying at the College of Medicine at King Saud Government University in Riyadh.
- In 1996, he moved to the city of Damascus to establish the Al-Wafai Ophthalmology Centre, and worked on its management until the war broke out, when he moved to the United States of America with his family to complete the remainder of his life there.



- In addition to the field of clinical medicine, he was interested in the field of the history of medicine and the contribution of Muslim scholars to medical progress.
- He presented fourteen books in this field, in addition to many research papers that he presented in scientific forums and conferences.
- Professor Wafai was also one of the first doctors in the world to treat the retina of diabetic patients with laser, as it is known that their retina is affected after a period of time, which may lead to total blindness, so he came to stop this affliction and prolong the period during which diabetic patients enjoy vision. The light of the sun, and he did this out of respect for his mother's eyes, which were damaged by diabetes.

- He won the American Academy of Ophthalmology Award of Merit in 1994.

- He also won the State Appreciation Award from the Kuwait Foundation for the Advancement of Sciences, in partnership with Dr. Muhammad Rawas Qalaji, in 2001.

- Professor Wafaei is a member of the editorial board of:

- Middle East Journal of Ophthalmology from 1992 - 1996

- Saudi Medical Journal - Riyadh since 1995

- Al-Kahal Magazine - Damascus since its founding.

- This is in addition to his membership in many scientific societies :

- Fellow of the American College of Surgeons since 1975.

- Fellow of the International College of Surgeons since 1976.

- Fellow of the Royal College of Ophthalmologists - England 1990.

- Fellow of the American Academy of Ophthalmology since 1976.

- Fellow of the American Ophthalmological Association since 1976.

- Corresponding member of the International Ophthalmology Foundation since 1974.

- An active member of the Society for Scientific Research for the Prevention of Blindness since 1974.

- An active member of the American Organization for Scientific Research in Vision and Ophthalmology since 1975.

- Corresponding member of the American Society for Intraocular Lens Implantation since 1975.

- Active member of the International Society for the History of Medicine since 1982.

- Member of the Saudi Ophthalmology Society since 1988.

Professor Wafai left a son; Ayman, and two daughters; Maysa, and Syreen.

May God have mercy on Professor Muhammad Zafer Wafai, and may he rest in peace.