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Editorial

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JBIMA Editorial

Dr Sharif Kaf Al-Ghazal, *Editor in Chief*

Assalamo Alaikom,

One year on, the world looks a very different place. There is finally light at the end of the tunnel with regards to the catastrophic Covid-19 pandemic that has wreaked havoc across the world and caused pain, suffering and loss to millions. The discovery of a vaccine a few months ago and its largely successful roll-out has been a huge relief Alhamdolilah, but the battle has not been won yet.

It is unfortunate that there is still a level of Covid vaccine hesitancy amongst the Muslim (and by extension) BAME community. Covid-19 has disproportionately affected these communities due to many reasons, which include increased co-morbidities, lifestyle factors, socio-economic factors and likely poor prior knowledge of public health as well as systemic racism within the healthcare community. The first 11 doctors to die from Covid-19 were from the BAME community, and there tend to be higher numbers of BAME workers who can't work from home in proportion to their white counterparts. The vaccine however, is the only genuinely effective method of combating Covid-19, and even proponents of "herd immunity" admit that it is only a vaccine that can help us reach that safely.

The campaigns run by anti-vaxxers are not targeted at the BAME community alone but they seem to be having a greater effect on this group. At the British Islamic Medical Association (BIMA), our volunteers have been working tirelessly over the last few months to advocate for the Covid vaccine; we have spent thousands of hours on webinars, published detailed guidance and myth busting in over 15 different languages to counter any misinformation on the topic and we encouraged mosques to become local Covid vaccination centres if they can. BIMA has made its standpoint on the vaccine unequivocal; it is the only route out of the pandemic. We also published statements on the different types the Covid vaccines as well as the issue of vaccination during Ramadan fasting. This has been shared by hospitals and NHS Trusts too.

It is understandable that there is a trust deficit between communities and the government. Unfortunately, the UK locked down too late and communication on guidance and masks was not always clear in the early months. Moreover, the Track and Trace app failed dramatically and the rush to open schools and universities did not help. Furthermore, the disastrous guidance on the household bubbles during Christmas made matters worse so it is not surprising that the government isn't highly trusted considering the many mistakes that it has made. Its outreach to the Muslim and BAME communities has been poor and this has left many within these groups mistrustful and suspicious. But issues of public health are beyond the scope of politics and our role at BIMA is to channel the message of the NHS, health authorities and doctors to the Muslim community. Public health is the responsibility of everyone. Within a society we all have rights, but we all have duties too, and adhering to social distancing rules, wearing a mask and avoiding physical contact with individuals outside of our "bubbles" is crucial to beating the virus.

And whilst the situation in the UK is, Alhamdolilah, slowly improving, the same can't be said for other countries in the world. India is suffering a nightmare scenario where hospitals are running out of ventilators, oxygen, and beds. What looked like a worst case scenario in the UK last year is now happening in India, and our brothers and sisters there need our support. No doubt poor governance has played its part in a recent spike of the pandemic but the problem is deeper than that. More than 60% of the adult population of the UK have had at least one dose of the vaccine. In India, it is only 10%. This disparity is deeply concerning and we must stand up to the forces of vaccine nationalism.

In recent days and weeks, tens of thousands have died in India who if they were living in the UK would have had at least one dose of the vaccine by now. It is ironic that whilst we see vaccine hesitancy in our Muslim community, others are literally dying due to their inability to access the vaccine.

The world is a small village. Globalization is irreversible and humanity is more interconnected than ever before.

The UK and US vaccinating so many of their citizens isn't enough. The world is not safe from Covid until everyone is safe. There is a collective responsibility here as Islam teaches us. States have to be charitable and help the poor and needy.

As we approach the end of the holy month of Ramadan, we pray that next Ramadan will be nothing like that of 2021 or 2020. We pray it will be a brighter Ramadan, one with less sickness, loss and death, and one where we can properly meet with loved ones, family and friends to celebrate the blessings this month brings.

As bad as the current situation is right now, pandemics don't last forever and as long as people are being vaccinated and sticking by the rules, the situation will keep improving inshaAllah.

Do make the most of the final days of Ramadan with extra prayers, sadaqah and good deeds.

Eid Mubarak,

Wassalam Alaikom.

Dr Sharif Kaf Al-Ghazal
JBIMA, Editor in Chief

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Ethics

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COVID-19 Intra-muscular vaccinations during Ramadan: The permissibility of vaccines whilst fasting

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Abstract

The purpose of this article is to reassure British Muslims, who may be offered either the first or the second dose of any of the three COVID-19 intramuscular vaccines during Ramadan, that according to the principles of the Shariah, these vaccines have no bearing on the validity of one's fasting. As such, health professionals and British Muftis could help instil confidence in British Muslims who are willing to receive the vaccine - to proceed with the understanding that receiving intramuscular vaccines does not invalidate fasts. The substances in the COVID-19 vaccines are not known to reach the stomach and are also non-nutritional. As such, the reasons why different forms of medication invalidate fasting do not apply to the COVID-19 vaccines. Moreover, vaccination would help increase herd immunity within Muslim communities, which is vital if communal rituals are to resume normality.

Introduction

At the time of writing, three vaccines against COVID-19 were approved and made available in the UK. These vaccines include 1) Pfizer-BioNTech vaccine, 2) University of Oxford/AstraZeneca vaccine, and 3) the Moderna vaccine. All three vaccines were reported to be approximately 90% effective in late-stage trials [1]. According to statistics published by the NHS for the overall vaccination activity;

> In the week ending 18th April an additional 2,828,254 NHS vaccinations for COVID-19 (both first and second doses) were reported in England. This took the total number of vaccinations administered as of 18th April to 36,213,306. Of the 2,828,254 vaccinations reported in the week ending 18th April, one-fifth (574,968) were first doses. This took the total number of people vaccinated with at least one dose as of 18th April to 27,516,197 (60.5% of the population aged 16 and over). The majority of vaccinations reported in the week ending 18th April were second doses (2,253,286). This took the total number of people vaccinated with both doses as of 18th April to 8,697,109 (19.1% of the population aged 16 and over and 31.6% of those vaccinated) [2].

The starting point on vaccines in this article is that the three above-mentioned vaccines have been approved by a number of Muslim jurists in the UK to be Shariah-compliant, meaning that they are compliant with Islamic law [3][4][5][6][7]. Furthermore, the British Medical Islamic Association (BIMA) also published its position statements endorsing the three vaccines [8][9][10]. Both oral and intramuscular (IM) vaccinations in general, have been approved by Muslim organisations worldwide [11]. Moreover, the Federation of Islamic Medical Associations (FIMA), which is a registered body of 29 Islamic medical organisations and 17 associate members worldwide, representing about 50,000 Muslim medical and health professionals stated that *'Arguably, it is far more harmful to one's health to contract Covid-19 than to take an approved vaccine for the disease'* [12]. Other efforts in the UK include the use of mosques as COVID-19 vaccination centres to help increase trust and to

reassure Muslim communities and ethnic minority communities about the safety and effectiveness of vaccination [13][14][15][16].

Ramadan 2021 began in mid-April and will end in mid-May. In the UK, sunset in April occurs after 8pm and in May, after 9pm. In the UK, most vaccination centres are open only until 8pm, which means that the vaccination would be received in daylight hours, during fasting hours. At the time of writing, the UK government was reported to have plans for a night-time Ramadan drive [17]. If the vaccines are administered after sunset then this would not affect the validity of fasting. Nevertheless, irrespective of what time of day the vaccine is administered, the question remains about the impact of any side effects that an individual may experience. According to the CDC, a higher percentage of people reported side effects after receiving the second dose of the Pfizer—BioNTech vaccine than after receiving the first dose; injection-site pain has been reported as the most common side-effect; other side effects include fatigue, headache, and muscle pain [18]. Common side effects are expected to be mild and self-limiting within a few hours. However, fever and fatigue may be prolonged and may impair an individual's ability to tolerate the fast.

Assuming that Muslims embrace the three vaccines against COVID-19 as being Shariah-compliant, online Muslim forums, fatwa sites, and social media allow health professionals to gain insight into a different form of vaccine uncertainty; that is postponement of vaccines during Ramadan. An analysis of these discussions reveals that among the reasons for refusing vaccines during Ramadan is one based on the belief that the vaccination process would invalidate the fast. However, upon closer inspection, this belief is based upon a misplaced focus or an over-simplified understanding of what invalidates the Islamic fast. Whilst there are a number of factors that need to be considered before declaring a fast invalid, the oversimplification appears to be on the incorrect notion that if any substance enters the body, the fast is invalidated. Such beliefs have led some Muslim patients to raise concerns even against prescribed ophthalmic treatment during Ramadan [19].

Other reasons for misunderstanding what invalidates fasting involves conflating oral vaccines with intramuscular ones. One might attribute this understanding to the fact that in some instances, IM vaccines have been likened to blood transfusion, dialysis, IV fluids, and nutritional injections – which have been considered by some Muslim jurists to invalidate fasts. Nevertheless, this article aims to clarify the way in which intramuscular vaccines differ from other forms of medicinal treatments that are believed to invalidate fasts.

Fasting in Ramadan, as pointed out by Waqar and Ghouri, *'is an individualised choice and should be supported through a shared decision-making process'* [20]. The decision of a Muslim patient to fast or choose not to is likely to be posed not only to health professionals but also to Muslim theologians and ethicists, commonly known as an imam or a mufti [21]. Consequently, by having a clear understanding of what the three vaccines contain, how these substances enter the body and are transported within as well as how these substances affect the body - health professionals, imams, and muftis would be better equipped to advise British Muslims regarding vaccination against COVID-19 in Ramadan 2021 and perhaps provide the British Muslim community with clear guidelines [22].

1. Why Muslims fast

Islam revolves around expressing gratitude for life. For Muslims, this involves showing gratitude to Allah, also referred to in the Qur'an as *'Al-Muhyee'* meaning the One who grants life. Expressing gratitude to Allah takes many different forms, among which fasting in Ramadan is pivotal as one of the five pillars of Islam [23]. Ramadan is the ninth month of the Hijri (Islamic lunar calendar) during which Muslims worldwide collectively fast and congregate to break bread together at the end of their fasts. Fasting in Ramadan is, therefore, important to all Muslims, theologically as well as socially and culturally. Notably, the NHS itself has a workforce of over 45,000 Muslim workers [24]. Despite the fundamental position of fasting in a Muslim's life, the Shariah allows dispensation for medical reasons to categories of people who are deemed as being exempt from this obligation. Such dispensations allow Muslims to ensure that their health is neither affected physically nor affected psychologically by feelings of guilt or regret over terminating or postponing their fasts.

Exemptions from fasting

The Qur'an explicitly states, *'if anyone is ill or on a journey, then let them fast an equivalent number of days later' [25]*. The Qur'an, thereby, exempts from fasting those who are ill as well as anyone who needs to travel; considering the fact that people need to commute for several reasons such as for work purposes, visiting the sick, and attending funerals.[i] Muhammad Rasulullah(Peace be upon him), the Prophet of Islam, further clarified that a woman who is pregnant or is

breastfeeding also need not fast [26]. Such dispensations are in line with the Qur'an which encourages the preservation of life [27] and warns against self-harm as well as afflicting harm on others [28]. According to the late Mufti of Tunisia, Muhammad al-Aziz al-Ju'ayyit, harm could include both direct harm whereby fasting would make one's health worse, or indirect harm whereby a sick person's recovery could be delayed. If, however, one's life is at stake then under the circumstances, fasting is actually forbidden [29].

A question that could be raised at this point is - why would a Muslim want to consciously choose to fast and risk delayed recovery or permanent illness? While the reason for this may be based on sincerity and devotion to one's faith - the Qur'an and Muhammad Rasulullah encourage otherwise. In fact, the Qur'an urges Muslims to seek sound knowledge and verify information in order to avoid misinformation leading to causing harm to others [30]. Whilst a Muslim may believe that the greater the patience, the greater the reward, a hadith states that even if a sick person were unable to perform rituals, they would continue to be just as close to Allah as they would be - had they been observing the rituals when they were healthy [31]. Another factor that may influence decisions to fast, as highlighted and opposed by IIkilic and Ertin, could be the ethically problematic intense family relations and social pressure [32].

In relation to diabetes, a large population-based study by Salti et al. found that about 79% of Muslims, from 13 countries, with Type 2 diabetes would fast for at least 15 days during Ramadan [33]. Abolaban and Al-Moujahed highlight that *'Ramadan could be an important cause for noncompliance with prescribed medications'* [34]. As a result, Abolaban and Al-Moujahed also highlight that primary care physicians need to be *'culturally competent and knowledgeable about the basics of Ramadan, exemptions from fasting, treatments and procedures that invalidate fasting'*.

Likewise, Randhawa and Griffin emphasise that the UK government need to take a traditional public health approach to tackle the pandemic - by developing a bespoke and sophisticated response to building trust among ethnic groups by co-designing culturally competent messaging with communities, which would enable a dialogue that would support increased rates of vaccine uptake [35].

A point worthy of note is that the Qur'an does not encourage postponing necessary travel but rather encourages postponing Ramadan fasts. To demonstrate this in practice, Muhammad Rasulullah himself avoided fasting during travel. In 8 A.H., which took place two years prior to his demise, Muhammad Rasulullah journeyed from Madinah to Makkah in Ramadan. During this journey, some people had initially decided to fast but later began to find it difficult [36]. The verse which encourages postponing Ramadan fasts due to illness or travel had been revealed six years earlier. The same verse further reads *'Allah wants ease for you, not difficulty'*. In light of this verse, Muhammad Rasulullah, while still on the outskirts of Madinah and perhaps just an hour or two before sunset, halted the journey, asked for a bowl of water, raised it, and drank the water visibly, before the eyes of the people - to demonstrate that it was recommended to not fast during travel. In another hadith, Muhammad Rasulullah highlighted that 'fasting during travel is not some righteous act' [37].

Moreover, Muhammad Rasulullah added that those who continued to fast on the way to Makkah had disobeyed [38] i.e., disobeyed the Qur'an. On this note, al-Sarakhsi [d. 1090] points out that a number of Muhammad Rasulullah's companions considered fasting to be invalid when travelling because doing so is antithetical to the Qur'anic guidance [39]. Likewise, fasting when seriously unwell is also not advised in the Qur'an.

Returning to the question related to vaccines – Why might Muslims not want to receive a vaccine against COVID-19 during the Ramadan of 2021? Whilst there could be a number of reasons for not wanting a vaccine, this article focuses on a particular reason – that is the belief that a vaccine would invalidate the fast. This belief could result in a significant number of patients who need the vaccine to delay receiving it. Because observant Muslims engage in many communal events such as congregating for the five daily prayers alongside fellow Muslims in mosques, the majority of the worshippers would need to be immunised to reduce the spread of COVID-19.

Culturally, Muslims nominate their family members to prepare the funerary rites, which include bathing, shrouding, and burying their deceased loved ones. To offer such rites and rituals, family members would also need to be immunised against COVID-19. Moreover, the UK government has prioritised the vaccines for frontline funeral workers [40]. In the UK, during Ramadan 2020, since no vaccine was available, Muslim jurists decided to suspend the Friday prayers and funerary rites in the hope to curb further spread of COVID-19 [41].

2. Rules of fasting

The ritual of fasting involves following a set of rules for the fast to be considered valid. These rules include avoiding the *muftiraat* - meaning actions that would invalidate the fast, such as intentionally eating and drinking. As such, Muslim jurists are unanimous in their understanding that eating or drinking items that provide nutrition as well as those that are socially accepted as food and drink and are ingested via the throat, would invalidate the fast.

However, a number of scenarios have led Muslim jurists to delve further into the principles of what would invalidate a fast. Different scenarios that Muslim jurists face and have tried to resolve include the fasting person smoking, vaping, and using oral asthma inhalers. Likewise, Muslim jurists have investigated the validity of fasting with regard to swallowing non-nutritional items such as paper, dirt, or a bead, or swallowing a fly; or eating a substance that is commonly not considered food such as a stone or an unripe vegetable. Moreover, Muslim jurists have explored additional scenarios such as if a substance entered the body through the skin – for instance, as a result of a bee sting or a snake bite. In relation to modern medicine, Muslim jurists have looked at whether or not using insulin pumps or transdermal medications such as nicotine and analgesic patches, or insertion of suppositories, creams or ointments for internal haemorrhoids would affect the validity of one's fast. How about receiving blood transfusion or dialysis; both haemodialysis (via the blood) and peritoneal (via fluid exchange in the abdomen) dialysis? Receiving intravenous fluids, being fed through a PEG tube, and receiving glucose or vitamin injections whilst fasting are likewise matters of concern for Muslim jurists. Each of these scenarios requires careful consideration of a number of factors to determine whether the fast would be valid or not. For the same reason, Muslims must bear in mind that the matter is complex and one scenario should not be conflated with another.

The Qur'an states that one may continue to eat and drink until *fajr* and thereafter to remain in a state of restraint until *lail*.[ii]The implication is, therefore, to not eat or drink during daylight hours. One major issue that arises in relation to what invalidates fasting is the discussion of what qualifies as the act of eating and drinking. Muslim jurists have taken different approaches to interpret this matter; ranging from a literal interpretation to more pragmatic and cultural interpretations. From among the various schools of Islamic jurisprudence, the Hanafi and the Ja'fari [42] schools are of the view that anything that enters the body through the skin is not considered eating or drinking irrespective of where the substance could reach within the body.

While no one disputes that such a process is not eating or drinking, the Shafi'i and Hanbali schools argue that any substance which provides strength to the body through nutrition, irrespective of how it enters the body, would invalidate the fast. The Maliki school restricts the matter to *'shahwat al-batn'* meaning the pleasures of the abdomen. As such, if the substance were to reach the abdomen, the fast would be invalidated irrespective of how it entered the body. Moreover, although injecting nutritional substances into the body is not literally eating or drinking, it may be accepted as such, metaphorically speaking - in the case of those who are for instance "nil by mouth" and would be unable to swallow via the throat. Whether such patients should even fast is a separate discussion. For a comprehensive discussion on what invalidates fasting related to the throat and bodily cavities in light of modern medicine, read Rashid [43][44].

Based on the above basic principles, the following sections will look at ways in which intramuscular (IM) vaccines are different to other forms of muftiraat and why IM vaccines do not invalidate fasting. From another perspective, how is it that a group of Muslim jurists have considered receiving blood, IV fluids, saline drops, glucose, vitamin injections, dialysis, and even smoking to invalidate fasting but have considered IM vaccines to not invalidate fasting?

3. Blood transfusion, dialysis, and IV fluids

Some Muslim jurists view receiving blood via transfusion [45][46][47], undergoing dialysis, and receiving IV fluids to invalidate the fast. This ruling is based on the views of earlier Muslim jurists who concluded that the rules of fasting should not be subject to simple rationalisations. For these jurists, all that is of importance is abstinence from benefiting from any form of nutrition whether it entered the body via the throat or otherwise (e.g.via the skin or any bodily orifices). As such, a patient who suffers for instance from anaemia, sickle cell disease, haemophilia, or cancer, may postpone fasting on days when blood transfusion is required.

In addition to blood transfusions, bin Baz [d.1999] argued that injections that provide nutrition are an alternative form of feeding for those who are unable to swallow naturally. Bin Baz, therefore, stated that such injections are to be treated the same as eating and

drinking in relation to fasting i.e., that injecting nutrients invalidate the fast [48]. Likewise, according to this view, glucose injections and receiving nutritious fluids by PEG feeding would also invalidate the fast especially since the substance would directly reach the stomach. In the same vein, *al-Lajna ad-Da'imalil-Buhuth al-'Ilmiyyawal-Ifta* (The Permanent Committee for Scholarly Research and Ifta) considers dialysis[iii]to also invalidate fasting because the blood returning to the body is corrected by dialysis fluid which contains sugars and salts [49] such as glucose and sodium bicarbonate. For further discussion on the difference between haemodialysis and peritoneal dialysis, see Malik et al. [50]

By contrast, other Muslim jurists argue that the rules of fasting *can* be subject to a degree of contextually appropriate rationalisation. As such, receiving nutrients through the skin is neither generally considered to be eating or drinking, nor do such absorbed substances reach the stomach. Likewise, receiving blood, or undergoing dialysis, and receiving IV fluids do not invalidate fasting [51][52][53]. According to this view, saline fluid, which contains sodium chloride, that is used by physicians to rehydrate patients, to flush out wounds, and to deliver medication by intravenous infusion also does not affect the validity of fasting. Patches used in nicotine replacement therapy (NRT), which allow nicotine to be absorbed into the bloodstream also does not affect fasting. The same ruling applies to local and general anaesthesia [54]. During the seventh cholera pandemic of the 1960s, Abdul Majeed Saleem [d.1954], the then Grand Mufti of Egypt, was asked for his opinion - for the purpose of the annual hajj - regarding receiving vaccine injections against cholera and typhoid, whilst fasting in Ramadan. Saleem explained that the substances in these injections do not reach the stomach or intestines and, therefore, do not affect the validity of one's fast [55].

COVID-19 vaccines whilst fasting

With regard tothe COVID-19 vaccinations, the three vaccines in question, as with most other conventional vaccines, are neither nutritional nor considered food or drink – neither for those who are healthy nor for those who are unable to swallow.

Moreover, all three COVID-19 vaccines are intramuscular and their contents are not known to reach the stomach or the intestines. The following is BIMA's response to the question on taking COVID-19 vaccines whilst fasting:

> Taking the Covid-19 vaccines currently licensed in the UK does not invalidate the fast, as per the opinion of Islamic scholars. Individuals should not delay their Covid vaccinations on the account of Ramadan. Subcutaneous, subdermal, intramuscular, interosseous, or intra-articular injections for non-nutritional purposes whilst fasting do not invalidate the fast, regardless of the injected content entering the blood circulation. These routes are not classed as entry sites that would invalidate a fast. Receiving the Covid-19 vaccine as an intramuscular injection, the only route for the vaccines currently available, therefore does not invalidate the fast [56].

Other medicinal injections such as penicillin and insulin, which are also not considered to be nutritional, have also been considered to not affect the validity of fasting [57]. Such Islamic rulings are based on similar scenarios such as snake or scorpion bites - whereby venom, which contains a mixture of bioactive proteins and polypeptides could enter the bloodstream. Muslim jurists agree that such venomous bites do not affect the validity of fasting [58].

Conclusion

Based on online discussions regarding vaccines whilst fasting, vaccine uncertainty and postponement of vaccines appear to be a significant concern for some Muslims. The concern is based on the notion that injecting substances into the body could potentially invalidate their fast. A group of Muslim jurists have considered blood transfusion, dialysis, IV fluids, and nutritional injections to render fasting invalid because these treatments provide nutrition to the body. However, this rationale is inapplicable to the three COVID-19 vaccines; the reason being that the three COVID-19 vaccines are not nutritional, the substances used in the vaccines do not pass into the body via the throat, and these substances neither reach the stomach nor the intestines.

These differences between the three vaccines and other forms of medicinal treatment need to be clearly understood by Muslim faith leaders as well as health professionals working with Muslim patients. Imams could explain the efficacy of vaccination against COVID-19 during Friday sermons/ khutbahs adding that although vaccines may not eliminate COVID-19, being vaccinated can reduce health complications if one were to contract the virus. Moreover, mosques and Islamic centres may be used as convenient vaccination hubs. The night-time Ramadan vaccination drive would also be helpful as part of the solution against COVID-19. Continued discussion

between British muftis, Muslim faith leaders, and healthcare professionals is encouraged to understand the decision-making process to inoculate against COVID-19 during Ramadan as well as to unite against the spread of vaccine misinformation. Additionally, as Lancaster University is developing an intranasal COVID-19 vaccine [59], further medical and Islamic juristic discussion around its use whilst fasting is also encouraged.

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Notes

[i]There is a difference of opinion among Muslim jurists with regard to the distance of travel which allows exemption from fasting.

[ii]*Fajr* is also referred to as *subhsadiq* that is when the rays of sunlight first begin to spread over the horizon. *Layl* or night, on the other hand, begins after *ghurub* or sunset. The terms fajr and layl have been defined here to clarify a common misnomer that Muslims fast between sunrise (which occurs a while after *subhsadiq*) to sunset.

[iii]The Permanent Committee for Scholarly Research and Ifta in its fatwa is general and does not specify to which type of dialysis this fatwa applies.

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ORGAN-ised Rejection: An Islamic Perspective on the Dead Donor Rule in the UK – Revisited

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Organ transplantation technology throws up deep theological, moral, cultural, and ethical questions. The discussion blurs the boundaries between life and death, and for Muslims, between halal and haram. It frustrates religious sensibilities, entangles bodies, and complicates the very identity of organ transplant patients. A recipient of a heart transplant could not get himself to say to his wife, 'I love you with all my heart!' as the cocktail of immunosuppressant medicine was a continuous reminder of the presence of an alien flesh in him which his body is fighting tooth and nail to reject. The alternative expression, 'I love you with all my liver!' elicited a repulsive look from his wife, not the response he was looking for (Wright 2020, p. 49). At rock bottom, organ transplantation questions the very meaning of what it means to be a human being. Is it an enslaved body, where the biological and metaphysical are entangled and enmeshed in to one person; or is it an embodied organism, a conglomeration of disparate body parts like that of spare car parts?

With the change of the law in Wales (1 December 2015), England (20 May 2020), and Scotland (26 April 2021), emphasis has been given to campaigns extolling the benefit of organ donation. This resulted in minority opposition voices to have been all but drowned (Master 2019; Ali 2019a).

From these minority voices is an article written by Dr Abid Hussain published in volume four of this journal (Hussain 2020). The main thrust of the article is that whilst it is admirable for doctors and organ donation campaigners to extol the benefits of organ donation based on statistics and waiting list numbers, they fail to disclose the entire range of opinions on the Islamic ruling on organ donation.

The allegation is serious. It translates into patients not being given the chance to make an informed decision since doctors and campaigners wilfully subdue information to attain an intended outcome (increase in organ donation).

I welcome Dr Hussain's concern for more transparency and nuanced discussions on organ transplantation in Islam. However, I take issue with the absolutist tone. Elsewhere, I have argued that due to the fact that the issue of organ transplantation is conspicuous by its absence from the Qur'an and sunnah, the matter is *ijtihadi* (religious discretion of scholars), thus, organ donation is a choice (Ali and Maravia 2020). I and my co-author have extrapolated seven contradictory positions from our readings of fatwas on this issue. We make the argument that all seven positions are Islamic positions and people have the choice to adopt whichever position they want without the feeling of theological guilt or moral culpability. Dr Hussain concludes his concerns as follows:

> For Muslims it is not just a mere case of legal permissibility to donate organs but perhaps just as importantly what is morally good and what will help them to get to Paradise on the Day of Judgment (Hussain 2020, p. 22)

I will revisit the above statement towards the end of this paper. Further to my objection to Dr Hussain's seemingly absolutist position, I feel that the three arguments he uses to build the main thrust of his paper overlooks nuance. These are (1) the claim that adhering to one School of Law (*madhhab*) is necessary, (2) the discussion on brain-death and Islamic death and (3) his interpretation of the three British fatwas.

I will use the remainder of this paper to nuance these arguments and demonstrate that there is more than one way of reading them. Since I have written a detailed paper on organ transplantation ethics in Islam, readers will be referred to that paper to look up the sources rather than detailing them here (Ali and Maravia 2020).

Organ transplantation and single-*maddhab* ruling

Rejecting notions of plurality in choosing different fatwa positions, Dr Hussain maintains that the vast majority of scholars encourage their followers to confine themselves to one *madhhab* (Hussain 2020, p. 21). While this may be true in most cases, contemporary bioethical issues such as organ transplantation fall outside the jurisdiction of a single *madhhab*. This is because the Qur'an and sunna are conspicuous by their silence on these matters and the medieval scholarly legal tradition does not have accurate parallel paradigm cases on which to base one's *ijtihad* (Ali and Maravia 2020, p. 2). These are new emerging issues, and the responses are the result of individual or collective *ijtihad* which transgress the traditional boundary-lines of *madhhab*-based *ijtihad* (Caeiro 2017; Abdullah 2010). As a result, it is difficult to put the finger on the pulse as to what exactly is the opinion of any one particular *madhhab* on these issues.

One may argue that as long as a mufti is using the principles and hermeneutical tools (*usul*) of a *madhhab*, the resultant conclusion can be confidently attributed to that *madhhab*. In theory, this is correct, but in the case of organ transplantation, here lies the problem. Nearly all contradictory opinions can be established using the *usul* of one single *madhhab*. By way of example, lets focus on the myriad of opinions established using the *usul* and *furu'* of the Hanafi *madhhab*. Which one should we confidently attribute to the *madhhab* and why?

1. Organ transplantation is haram (both receiving and donating). This opinion includes the impermissibility of blood transfusion. This is the opinion of Mufti Akhtar Raza Khan (d. 2018) great-grandson of Maulana Ahmad Raza Khan Barelwi (d.1921) (Khan 1991).

2. Organ transplantation is haram (both receiving and donating) but blood transfusion is permissible. This is the view of Mufti Muhammad Shafi (d. 1976) from the Deobandis (father of Mufti Muhammad TaqiUthmani) (Shafi 2010 (1967)).

3. Judgement on the legal status of organ transplantation is suspended (*tawaqquf*) until further research. However, in the case of dire necessity, one is allowed to receive an organ. This is the opinion of Mufti Muhammad TaqiUthmani (Uthmani 1998 & 2011; al-Kawthari 2004).

4. Organ reception is permissible (including from dead donors). However, only live organ donation is permissible. Cadaver organ donation is impermissible. This is the opinion of the Islamic Fiqh Academy of India (Qasmi 1994).

5. Organ reception is permissible (including from dead donors). Organ donation from live donors is permissible. Organ donation from brain-death (DBD)is not permissible. Organ donation from circulatory death (DCD) is only permissible after elective [*sic*] irreversibility has been established. This is the opinion of Mufti Muhammad Zubair Butt (Butt 2019).

6. Both organ donation and reception are permissible from live and dead donors in all its iteration. In fact, in dire necessity, one is allowed to buy organs but not allowed to sell. This is the opinion of Maulana Khalid Sayfullah Rahmani current president of the Islamic Fiqh Academy of India (Rahmani 2010).

7. Organ reception is permissible, organ donation is permissible in all its iteration (live, dead, DCD, DBD). In fact, according to this opinion a person should be declared dead when all higher brain functions cease to exist, however, in the absence of criteria to accurately determine the cessation of higher brain function, DBD criteria is to be used. This is the opinion of Maulana Dr Rafaqat Rashid (Rashid Forthcoming 2021 2020).

8. An argument for permitting organ donation in all its iterations specifically using Hanafi *Usul al-Fiqh*is made by Muhammad Rashid Qabbani (b.1942) former grand mufti of Lebanon. The argument is made by interrogating the Hanafi *usul al-fiqh* and *furu'* sources on the concepts of rights (*huquq*); especially the works of the Hanafi scholars 'Abd al-Aziz al-Bukhari (d.1438) and 'Ala al-Din Al-Kasani (d.1191). For a detailed commentary and translation of this study in English, refer to my article, '*Our bodies belong to God, so what?*' (Ali 2019b).

The holders of the above positions are all Hanafi scholars who are using the *usul* of the Hanafi *madhhab* to argue their positions. Which one of them qualifies to be the Hanafi opinion?

If one were to interrogate the details of Hanafi positive law (*furu' al-fiqh*) to find parallel paradigm cases, even there the sources yield contradictory results.

1. Use of human body parts and organs: All Hanafi legal manuals pronounce that it is haram to use limbs and body parts (bones, teeth, hair) from one person to another (Nizam al-Din 1991, p. 7; Ali and Maravia 2020). This is because human beings are an end in themselves and not a means to an end. On the basis of these texts, it is argued by contemporary muftis that organ transplantation in all its iteration is haram as it is an affront to the dignity of the human being (Shafi 2010 (1967). I have argued elsewhere that that may be the case, a careful study of these texts reveal that all examples of body parts and limbs discussed in the classical Hanafi law books relate to interventions on the level of cosmetic enhancements such as hair extension, tooth transplant, and bone graft. Proponents of organ donation do not allow the use of human body parts for cosmetic enhancements (Ali and Maravia 2020, p. 7; al-Buti 1988).

2. Cannibalism and anthropophagy: All Hanafi legal manuals declare it haram to consume the flesh of another human being even in the case of dire necessity (Nizam al-Din 1991; Shafi 2010 (1967)). The argument is that if eating another human to save one's life, which is the ultimate aggression towards the human being, is allowed, then taking an organ from another person will be permissible. Hanafi scholars are unanimous that cannibalism and anthropophagy is not permissible. Using this as a paradigm case makes organ transplantation haram. However, one can question if this is an accurate paradigm case to base the discussion of organ transplantation on in the first place? Is transplanting an organ into the recipient in a sterile environment with surgical precision the same as consuming a human carcass, where the flesh is gnashed with the teeth, swallowed, and later excreted?

3. Caesarean section of a dead woman: All Hanafi texts deem it permissible to cut open the womb of a dead mother-to-be if it means that this will save her unborn child (al-Yaqubi 1987, p. 80-88). The violation of the dignity of the dead (mother) is tolerated for a greater good (the life of the unborn child). This paradigm case is used as evidence for life-saving organ transplantation intervention; that it is permissible to violate the dignity of the dead for a greater good which is saving the life of person on the cusp of death (Ali and Maravia 2020, pp. 10-11).

4. Exhuming a body: Hanafi scholars allow that a person whose wealth has been usurped by another individual who subsequently died, to exhume the corpse of the deceased and cut open his belly in order for the person to retrieve his wealth. Muftis who use this paradigm case argue that if the dignity of the deceased can be violated for worldly possessions, it can be extended to the preservation of life through organ donation.

5. The classical Hanafi scholar al-Kasani argues that while human life belongs to Allah, human organs and limbs follow the ruling of wealth; since both wealth and organs have been created to preserve and facilitate life. He further argues that the sanctity ('*isma*) afforded to body parts is not absolute and at times this sanctity can be suspended. He writes,

> If a person said, 'cut my hand off, and the other person cut it, there is no repercussion on the other person by consensus. This is because body parts follow the ruling of wealth, the protection of which is his right. It can be suspended either through making lawful (*ibaha*) or through consent similar to if the person said, 'destroy my wealth, and the other person destroyed it,' (al-Kasani 1986, 7:236; Ali 2019b).

The point of the above prolixious discussion was to highlight that it is difficult to talk about a single *madhhab* point of view, at least for the case of organ donation.

Brain-death and Islamic death

Dr Hussain argues that the real crux of the matter is that in order to retrieve organs from dead donors, the donor has to be already dead Islamically (i.e., the dead donor rule). This is universally accepted, and no one would deny it. He further points out that death determined using neurological criteria is neither agreed upon by physicians nor Muslim scholars. This is also a fact which one cannot deny. However, this difference of opinion should not automatically translate into haram and non-acceptability. Islamic law mainly operates on the level of 'highly probable knowledge' (*ghalabat al-zann*) (Padela, Ali, and Yusuf 2021 forthcoming) and a great number of doctors as well as Muslim scholars have declared brain death to be akin to Islamic death (Chiramel et al. 2020; Padela, Arozullah, and Moosa 2013; Moosa 1999).

However, what does it mean to be dead Islamically? Death is defined as the cessation of that which is essential to its nature (Veatch and Ross 2015, p. 54). From an Islamic point of view this is translated as the cessation/exiting/extraction of the soul from the human body. Scholars in the past have debated whether death is

an entity (*wujud*) or a non-entity (*'adammahd*). In other words, is death the absence of life or a separate entity closely related to life, but independent of it. Both opinions have been put forward (al- 'Ayni 2000, 1:429). The ramification of this difference is thrown into relief in the case of brain-death. If death is a non-entity, i.e., the absence of life, any semblance of life, even mechanically is an indicator of the presence of life. On the contrary, if death is an entity, related to life but independent of it, it is incorrect to bracket some somatic activities with the presence of the soul in the body. According to this understanding of death, retrieval of organs in the case of brain-death is not problematic even though some mechanically supported biological functions remain.

A similar situation can be observed in the beginning of life. Ensoulment is a metaphysical phenomenon. A foetus before ensoulment is viewed as a human organism but not a human person by most scholars. It is alive and leeching (*alaqa*) the resources from the mother. It is only after ensoulment (120 days or 40 days) that the foetus is deemed a proper person in Islam with proper rights and responsibilities. In other words, A human organism can be living, but without a soul.

Whilst it is commonly believed that it is impossible to know the moment the soul exits the body based on Qur'an 17:85, that the soul is unknowable, this is not an agreed upon position. First of all, there is no consensus amongst scholars that the word '*ruh'* in the above ayat refers to the human soul/spirit. Al-Razi was of the opinion that it may refer to the Qur'an. He argues that when the pagans of Makkah heard the Qur'an, they thought that it was a superior form of poetry or the poetic rambles of a sorcerer. Allah rejects this by saying that it is nothing but an '*amr* (command) of Allah (al-Razi 2000, 21:391-93). Even if we were to accept that the word 'ruh' in Q 17:85 refers to the human soul, this does not necessarily mean that we do not know anything about the '*ruh'*. The most it means is that we do not know the reality of the '*ruh'*. However, the Prophet has told us about the functions and actions of the *ruh*. For example, the Prophet said, 'When the soul leaves the body, the eyes follow it,' (*Ṣaḥīḥ Muslim, k. al-Janāʾiz, b. fī ighmāḍ al-mayyitwaal-duʿāʾlahidhā ḥaḍar)*. It is on this basis that Shaykh Muhammad Na'im Yasin of Jordan (one of the first scholars to have bracketed the exiting of the *ruh* with brain-death) argues that the soul is not a mystery but a creation of Allah. Its functions can be observed empirically (Yasin 1986, p. 638).

Furthermore, the 'ulama treat the subject of death in relation to death-enacting behaviour not as a theological issue but a legal one. There are precedents in Islamic law manuals for similar types of deaths where a person has somatic activity and yet declared to be legally dead (*al-hayy fi hukm al-mayyit*) (Albar 2001). Scholars discuss the case of the 'slain person' (*madhbuh*) who still has some semblance of biological life and yet legally has been declared dead (Moosa 2002; Rashid 2020). Thus, they argue that if a *madhbuh* person's father was to die after him, the *madhbuh* person will not inherit anything from him, for he is legally dead, and the deceased does not inherit.

The brain-death criterion is a bottleneck situation among Muslim scholars. It is based on competing worldviews regarding the human, death and dying. Unfortunately, there is no conciliatory views between the two positions, and strong arguments have been put forward by both parties. Advocates of Brain-death criteria include: the Islamic Organisation for Medical Sciences in its 1985 and 1995 conferences (IOMS cited in IIFA 1985; Moosa 1999; Grundmann 2005; Sing 2008; El-Gindi 2013). The IOMS dealt specifically with the issue of brain-stem death. This was followed by a resolution arrived at by the International Islamic Fiqh Academy (IIFA) of Jeddah in its 3rd conference held in Amman, Jordan in 1986(IIFA 1986) for the purpose of switching off the life-support machine. It was further discussed by the IIFA in 1988 in its 4th session in Jeddah where whole brain-death criterion was deemed as Islamic death for the purpose of organ retrieval (IIFA 1986). It is also the opinion of some eminent scholars such as the former rector of Al-Azhar University, Shaykh Sayyid al-Tantawi (d. 2010) (Hamdy 2012, p. 48). This is also the opinion of Shaykh Yusuf al-Qaradawi (al-Qaradawi 2009) and the opinion which is becoming progressively accepted as transplant medicine advances. Dr Albar writes in his exhaustive study on organ transplantation that the Saudi Government relied upon the IIFA declaration for its policy on brain-death. Up to the period of 1991 Saudi Arabia has had a success of 823 kidney transplants, 352 of which came from brain-death patients (Albar 1994).

Contrary to the above, those who believe that brain-death is not Islamic death include: the Islamic Fiqh Council of Makkah (IFC)(IFC 2010, p. 231). Scholars who hold this position include the former Shaykh al-Azhar Gad Al-Haqq Ali Gad al-Haqq (d. 1996) (Gad al-Haq 1979; Moosa 1998), Shaykh Muhammad Sa'id Ramadan al-Buti (d. 2013) (al-Buti 1988) and the former grand-mufti of Egypt Shaykh Ali Gomaa Muhammad (Ali Gomaa Mohammed 2003). It is also the view of Mufti Muhammad Zubair Butt as well as the Islamic Fiqh Council of North America (Shah 2018; Padela and Auda

2020). In the absence of clear-cut guidance from the Shariah, we are at a bottleneck situation. One either has to accept that a semblance of life, albeit mechanical, is signs of the presence of the soul or not, accept the difference and move on. (For a detailed exposition of why and how modern Muslim scholars bracket the exiting of the soul with the concept of brain-death, attention is drawn to my forthcoming chapter on this subject (Ali Forthcoming).

Discussion on the three British fatwas

Dr Hussain then proceeds to discuss three fatwas which address the UK scene specifically. These include Dr Zaki Badawi's 1995 fatwa which was hitherto used in all NHS promotional material (Badawi 1995; Raanan 1996). The Declaration of the European Council for Fatwa and Research (ECFR) in its 6th session held in Dublin in 2000(ECFR 2000) and the latest NHS-commissioned 110 pages independent legal opinion by Mufti Muhammad Zubair Butt (Butt 2019).

The conclusion of Dr Hussain's analysis of these three fatwas is that they are not fit for purpose for the UK scene. Here, I believe, is where Dr Hussain's analysis could benefit from nuance.

ECFR and Mufti Butt's rejection of DBD?

Dr Hussain writes, 'Regarding brainstem death (DBD) both the ECFR and Mufti M. Zubair Butt fataawa reject the UK criteria for determining death,' (Hussain 2020, p. 22)

Whilst it is true that Mufti Butt is clear in his rejection of establishing death using neurological criteria (whole brain or brain-stem), the ECFR fatwa **does not** reject brain-stem death *per se*. It only establishes whole-brain death. This is less about the ECFR 'rejecting' brain-stem death and more about the unfortunate choice of sources they used as references for their position. The ECFR declaration did nothing more than parrot the declaration of the Islamic Fiqh Council of Makkah (IFC) and the declaration of the International Islamic Fiqh Academy of Jeddah (IIFA) (IFC 2003; IIFA 1988, 1986) without interrogating those declarations to see whether they were fit for purpose (in the UK).

Taking a closer look at the ECFR's sources, the IFC rejects any form of brain-death definition as Islamic death. However, the IIFA declaration (which the ECFR quote in its entirety) accepts both death determined using circulatory criteria as well as neurological criteria. It should be noted that the acceptance of the brain-death criteria here is for that of whole brain-death and not brain-stem death. The reason for this is that the IIFA followed the American bioethical discussion on the definition of death. Whole brain-death criterion is accepted throughout the world except for the UK, India and Trinidad and Tobago. The IIFA's acceptance of whole brain-death criteria was fit for purpose for the Middle East, unfortunately it does not address the minority UK position of brain-stem death.

It is unfortunate that the members of the ECFR, who are catering for Europe including the UK did not pick up on this subtlety. A better source for them at least for the UK would have been the declaration of the IOMS in 1985 and confirmed again in 1996 which discusses and accepts the brain-stem death criteria (El-Gindi 2013). It is hoped that the above detailed excursion demonstrates that ECFR is not averse to brain-stem death, and that it was an unfortunate oversight on their part which resulted in their declaration not addressing the UK situation. The ECFR is invited to look in to this further. Members of the British Islamic Medical Association are also invited to further research the issue with keeping the UK scene in mind.

All three fatwas rejection of DCD?

Dr Hussain infers that the 1995-Zaki Badawi fatwa could not have issued an accurate fatwa of permissibility since the criteria for DCD was introduced only in 2008. This requires correction. DCD is a concept that was around long before it was introduced in the UK and it was practiced in the UK, albeit in a limited manner, before the millennium (Gardiner et al. 2020).

Furthermore, it is also not accurate to maintain that Mufti Zubair Butt and the ECFR reject DCD totally. Their rejection of DCD is restrictive. According to Mufti Butt, DCD is not permissible until the point of elective [*sic*] irreversibility has lapsed, which does not rule out procuring certain types of organs which have not been rendered unviable due to organ ischemia such as cornea, skin or tissues. Furthermore, Mufti Butt and the ECFR do not have a principled opposition to organs already retrieved (from live donor, DBD or DCD) to be transplanted. Their restrictive condition pertains only to donation.

Below are two tables comparing Dr Hussain and my reading of the three fatwas.

	Donation after brain stem-death (DBD)	Donation after circulatory death (DCD)
1995 Muslim Law Council fatwa	Yes	No
2000 ECFR fatwa	No	No
Mufti M. Zubair Butt	No	No

Table 1: Dr Hussain's reading of the three UK fatwas

	Donation after brain stem-death (DBD)	Donation after circulatory death (DCD)
1995 Muslim Law Council fatwa	Yes	Yes
2000 ECFR fatwa	Not discussed	Yes (restrictive)
Mufti M. Zubair Butt	No	Yes (restrictive)

Table 2: My reading of the three UK fatwas

Conclusion

From my analysis of Dr Hussain's three secondary arguments, it can easily be observed that fatawas and sources can be read in multiple ways. It is based on this multiplicity that I argued that organ donation is a choice and whichever fatwa one accepts is an Islamic opinion without the fear of moral sin or theological culpability. In the absence of clear-cut guidance from the Qur'an and sunnah, privileging one position as **the** Islamic position (as opposed to **an** Islamic position) over another is to arrogate an opinion on to Allah for which there is no clear evidence.

Finally, Islam is predominantly a nomocratic religion where the pleasure and will of Allah is found in following the laws of the Sharia. Muslim scholars have discussed the status of plurality of opinions by raising the question 'are all *mujathids* correct in their opinion?'. In other words, can an opinion correspond with Allah's intention (*murad Allah*)? The 'ulama were divided on this matter in to two positions: the *mukhatti'a*and the *musawwiba*. The *mukhatti'a* believed that there is only one correct legal ruling, and the rest of the opinions are incorrect (*khata'*). The *musawwiba* on the other hand believed that every opinion is correct. Imam Sayf al-Din al-Amidi (d. 1233) summarised the *musawwiba* position as follows

> Every *mujtahid* is correct in legal matters. The *hukm* Allah on the matter is not unitary, but rather arises from the considered opinion of the jurist [*zann al-mujtahid*]. Hence,the rule of Allah in the case of each jurist is the product of his *ijtihad* that leads him to a preponderance of opinion [on the subject](Al-Amidi, cited in Emon 2009, pp. 431-436).

Emon writes, 'In other words the legal determination is authoritative not because it corresponds to a pre-existing rule or truth in the mind of Allah, but rather because of the quality of investigation by which we reach *ghalabat al-zann*(Emon 2009, p. 435).

In reality, the difference is teleological. For the *mukhatti'a* there is a specific legal ruling (*hukmmu'ayyin*) which corresponds with Allah's intention and is attainable in theory, but in practice, one cannot be sure if they have attained it or not. As for the *musawwiba* the issue is epistemological. That is that it matters not whether there is correct legal ruling which corresponds with Allah's intention or not. What is important is the due diligence and the process of *ijtihad* used to arrive at that ruling. The upshot of all of this is that the *mukhatti'a* and the *musawwiba* are both aspiring to do the right thing. The question of whether their rulings and fatwas, arrived at through a process of due diligence, correspond with Allah's intention (*murad Allah*) is beyond the reach of human comprehension.

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The Great Physician Historian During the Golden Islamic Medical History - Ibn Abi Usaybi'aa

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Most Muslim physicians have heard (or should have heard) about famous Muslim physicians such as al-Razi, al-Majusi, Ibn Sina, Ibn al-Nafis, but few physicians have heard about Ibn Abi Usaybi'aa. Although not as famous as some of his contemporaries, Ibn Abi Usaybi'aa is no less important than any of these, considering the contributions he made to the history of Islamic medicine. His biography, the important contributions he made, and his rightful high place in the history of Islamic medicine will be presented. In this short article, I will examine his biography, the important contributions he made, and his rightful high place in the history of Islamic medicine. Ibn Abi Usaybi'aa's full name was Muwaffaq aI-Din Abu al-Abbas Ahmad ibn al-Qasim ibn Khalaf ibn Yunus al-Khazarji.

He was born in Damascus in (1203 CE) to a family that had close ties with medicine. His father was an oculist, a noble medical specialty of his time. His uncle was a brilliant physician who became a famous teacher of medicine at a young age. His uncle spoke Turkish fluently, commanding a wide expansive knowledge. He was not only a physician but a musician, poet, and oculist as well. No doubt both these men had great influence on the young Ibn Abi Usaybi'aa. His early education was under the tutelage of his father and uncle. He studied with some very notable teachers of his time. Ibn al-Baytar, the famed botanist, taught him botany (1). Later he took an apprenticeship under Muhadhab alDin 'Abd al-Rahim ibn 'Ali, known as al-Dakhwar, physician-in-chief at the then world-famous Al-Nuri hospital in Damascus. Among his pupils was Ibn al Nafis, the discoverer of pulmonary circulation, who became known as the second Ibn Sina. Later, Ibn Abi Usaybi'aa travelled to Cairo to take up a medical and surgical residency at the famous al-Nasiri hospital (Mansori Bimaristan). After finishing his training, he returned to Syria and started practicing in Salkhad in south eastern Syria in the service of the town's governor 'Izz al-Din Abu al Mansur Ahmad ibn Abdullah. He remained there practicing until he died in (1270 CE).

Ibn Abi Usaybi'aa is the author of several works, including a lot of poetry. Unfortunately, most of these have been lost. It was during this time that he wrote the book (***Uyoon al-Anbaa fi Tabaqat al-Atibbaa***) that was to earn him fame as an enduring historian of his time (2).

Uyoon al-Anbaa is a history of the physicians known at his time. Thus, he painted a great picture of the art and science of medicine of his time and the preceding times and gave us great insights. There is no other work that even comes close in describing the physicians of that time, their detailed biographies, the way they practiced, the medical and surgical methods they used and their philosophies, sometimes even their eccentricities, oddities and some of their ingenious methods and achievements. Because of its fame and importance, this book has survived almost in its entirety rather than being altered by annotations of subsequent copyists as has happened to many other books and manuscripts of that time. Dr. Sami Hamarneh, a modern-day authority on the history of Islamic medicine, wrote "In scope and details, it is the best of its kind ever written up to the early modern period. It is monumental undertaking in the history of Islamic medicine, serving as an indispensable reference and source of information, for the study and understanding of the rise and development of the

health professions from ancient times to mid-1262 CE (3). From the descriptions in this book, it is evident that the author, in addition to knowing medicine well, was refined, cultured, honest inhis accounts and detailed in his statements. He was objective, precise, critical, and free from prejudice. Included in his description are philosophical sayings by physicians, aphorisms, anecdotes, medical poetry, and even humorous encounters, which make for delightful reading. His book was dedicated to Abu al-Hasan ibn Ghazal ibn Abi Sa'id, the wazir (minister) of the King al-Salih Najm aI-Din.

Ibn Abi Usaybi'aa thus deserves a high place in the list of historians of medicine. From his descriptions we learn a lot about the early Greek physicians including Hippocrates, Galen, the Greco-Roman, the Byzantine, the Alexandrian, and the early Muslim physicians. In his book he covered practitioners in Iraq, Diyar Bakr (a region on both banks of the upper Tigris), India, North Africa and Spain, Maghrib, countries far removed from where he practiced. He also covered Egypt and the country of his residence, Syria, in great depth.

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Muslim Female Physicians and Healthcare Providers in Islamic History

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Introduction

It is known that there is little information out there on the role of women in Islamic medical history. According to some, they have not played any significant part in the development of this field. In this piece, we will prove that this assumption is not true and that the role of Muslim women in the field of healthcare is wide ranging as it is in some worldly and religious fields. We need to examine this issue in depth and it is unfortunate that most sources relating to this are published in Arabic which can make it difficult for non-Arabic speakers to learn about this.

The rise of Islamic Medicine

The practice of medicine has a special significance in Islam. The prophet PBUH used to instruct his companions on the importance of seeking treatment for ailments and diseases. Muslims would consider the study of medicine in the same light as he who studied religion.
Usamah ibn Sharik reported: A bedouin said, "O Messenger of Allah, shall we not seek treatment?" The Prophet said, "Yes, O servants of Allah, seek treatment. Verily, Allah did not place a disease but that he also placed its treatment or cure, except for one ailment." They said, "O Messenger of Allah, what is it?" The Prophet said, "Old age."

There is another hadith narrated by Abdullah Ibn Masud in which the Messenger of Allah said in another narration, the Prophet said, "One who has knowledge of it knows it, and one is ignorant of it is ignorant." This means that the prophet PBUH has instructed us to seek treatment and search for the cure of a disease.

During the time of the Prophet PBUH, there were a few female Muslim physicians who contributed in the provision of healthcare. Unfortunately, those who recorded history did not do their achievements justice and their accomplishments are not well known. The advancement of Medicine started by encouraging the translation of Greek texts to Arabic and later adding in their experiences during the Ummayid and Abbasid eras.

Hospitals and home visits

There is plenty of evidence to indicate that women practised in the field of Medicine in the early years of Islam and even afterwards. The tent of Rufaydah was considered perhaps the first mobile hospital for treating patients in Islamic history which will be explored in more detail later. It was known that Al-Zahrawi in Andalus depended on healthcare assistants who helped during his practice in obstetrics and female health (these would now be known as midwives). In later years, it was reported that the daughter of Shehabuldin Al-Saigh used to work in Al Mansouri hospital (the biggest hospital in Egypt at the time) and had a senior position there.

Besides the fact that female physicians worked in the hospitals, they also used to visit patients in their homes. Al-Tabbari, in his book "*Tareekh al rusoolwa al mulook*" stated that one male physician called Abo al-Hasan had a female patient come to see him with an infected wound in her shoulder and he responded by telling her "I am a kahal (an eye-physician) but we have a female physician who will be treating you". She saw the female physician who treated her and Al-Tabbari viewed this hospital (Bimaristan) as a public health service. At the same time however, there was a lot to be said about the midwives who used to visit patients in their homes. This has been described by Ibn Al-Hajj in his book (Al-Madkhal) when he described the life of Muslim women in Cairo during the 13th and 14th centuries and how families used to arrange for midwives to come and perform deliveries and look after the new-born babies.

Specialties of female health providers

Amongst the specialties known at the time were looking after battled-wounded patients, providing minor surgery as well as complicated trauma surgery such as amputation. Providing "*Kai*" (cauterisation) and "hijama" (bloodletting) were also practised. Female physicians used to look after the wounds, stop the bleeding, change the dressing and provide handmade creams to provide wound healing (Fig 1).

Figure 1: Muslim Females actively participated in helping the injured from the early years of Islam

Females were also involved in drug creation. And as mentioned above, in the book of Al-Tabbari it was stated that women helped treat infected wounds by making the right antiseptic creams. It is also well known that Zainab of Bani Oud specialised in treating eye diseases and in making topical medications. Al Shifaa bint Abdullah who used to treat skin ulcers by handmade topical creams, was also appointed as the head of Husbah (the body that would regulate different businesses in the Souk, including the composition of drugs). She was appointed by the second Caliph, Omar Ibn al-Khattab. (1).

As mentioned earlier, the references to Muslim female physicians are few and far between in English literature.

Some of these Muslim female physicians are:

1. Rufaydah Al Aslamiyyah: It was reported that Rufaydah embraced Islam in the prophet's mosque in Madina after Hijrah and joined the Prophet (PBUH) in a few battles. She joined the army in the battle of Badr supporting the fighters and treating their wounds. Rufayda learnt most of her medical knowledge by assisting her father, Saad Al-Aslamy, who was a physician. Also in the battle of Al-*Khandaq*, she used to have a medical tent (very much like the military mobile hospital used in the modern era) with all the equipment needed to treat the injuries when she travelled with the army. She was the first in Islamic history to be in charge of a military mobile field medical centre. It was her medical tent.

She treated injured companions, as she did for *Saad Ibn Muaaz* at the request of the Prophet PBUH according to Hadith in Sahih Bukhari. She removed an arrow from his arm in her tent. (2)

She was also allowed to put her tent in the Prophet's PBUH mosque in Madina where a few volunteer nurses used to help her in different shifts to look after Saad ibn Muaaz. She also trained some of the female companions about first aid and nursing before the battle of *Khaibar*. These female nurses used to help her in running her mobile medical military tent and having day and night shifts to look after wounded people. That shows also how the mosque during the Prophet's PBUH time has been used as a medical centre. This story inspired many mosques to be used as Covid-19 medical, rehabilitation and vaccine centres as it has been recommended by some scholars (3,4).

Rufayda was given by the Prophet PBUH a share of the spoils of war (*Ghana'em*), similar to any fighter in the war, recognising her role in the battles. She also helped in treating many of the companions during peacetime as well as during wars. Rufaydah is depicted as a kind, empathetic nurse and a good organiser. With her clinical

skills, she trained other women to be nurses and to work in the area of healthcare. She also worked as a social worker, helping to solve social problems associated with disease. In addition to this, she helped children in need and took care of orphans, the disabled and the poor (5, 6).

It was also mentioned that Rufaydah reported a few ahadith of the Prophet (PBUH) which were narrated by Al-Bukhari, Abu Dawood and Al-Nasa'ee. (7).

It is worth stating that many streets, schools and places are named after her, and the Royal College of Surgeons in Ireland, in conjunction with the University of Bahrain, grants an award named after Rufaydah to distinctive students every year (8).

2. Al-Shifaa (Laila bint Abduallah Al-Qurashiyah Al-Adawiyah- OmSulaiman): Al-Shifa bint Abduallah al-Qurashiyah al-'Adawiyah was one of the female companions who had a strong presence in early Muslim history as she was one of the wise women of that time. She was literate during a time of illiteracy. She was the first female teacher during the time of the Prophet (PBUH).

She was involved in public administration and skilled in medicine. Her real name was Laila, however due to her knowledge and skill in the practice of medicine, she was called Al-Shifa (the healing), so her name is partly derived from her profession as a nurse and medical practitioner.

Al-Shifa used to use a preventative treatment against ant bites and the Prophet PBUH approved of her method and requested her to train other Muslim women. She used to read and write well and used to teach Hafsah bint al-Khattab (the Prophet's wife) writing, and trained her to treat the people with skin conditions, as she was famous for treating a dermatological condition with ulcers, similar to Eczema, with symptoms similar to having ant bites.

She was appointed by *Omar Ibn al-Khattab* (the second caliph) as a market inspector (*Hosbah*) in Madinah (first Muslim woman to hold such public office) (Fig 2). This is similar to the position of Health & Safety Officer. (7,9)

Al-Shifaa also reported 12 Ahadith of the prophet (pbuh). She died in the year 641.

Figure 2: Al-Shifaa was one of the first females in Islam participating in Al-Husbah (regulating and monitoring the market)

3. Nusaybah bint Harith al-Ansari (Om Atiyyah Al-Ansariyyah): Nusaybah practised medicine before and after she embraced Islam. She was performing circumcision with the encouragement of the Prophet PBUH (9,10). Nusaybah had good relations with the Prophet's PBUH wives and used to visit them regularly and share gifts with them. She reported some Ahadith of the Prophet (PBUH). She took care of the casualties on the battlefields and provided them with water, food and first aid. She joined the Prophet PBUH in 7 battles. Nusaybah was the one who washed and prepared the body of Zainab (the Prophet's PBUH daughter) following her death. It is also worth mentioning that she also reported over 40 *Ahadith* of the Prophet (PBUH), some of them are narrated by Al-Bukhari and Muslim (7) . One of the Hadith was about the permission for women to attend the Eid prayers as narrated in Sahih Al-Bukhari. She later moved to Al-Basrah in Iraq where she died.

4. Nusaybah bintKa'ab al Maziniyyat (Om Omara): Nusaybah was one of the early females who embraced Islam. She attended with Mos'ab ibn Umair (as part of two females and seventy males) the agreement (*Bay'at* Al-Aqabah2) after she travelled from Madinah to Makkah to meet the Prophet (PBUH) before Hijra. She was the first woman to promise the Prophet PBUH to support him when he would immigrate to Madinah. She helped the injured people in the battle of Uhud and defended the Prophet (PBUH) during the fight; even he said that every time he used to look at his right or his left he would see her fighting to defend him, until she was injured in her neck (6,9).

She kept supporting and treating the wounded people after their war injuries. It was reported that she was a strong fighter, and she joined the battle against Mosailimah (during the first caliph – Abu Bakr) and had her arm badly injured and amputated. She treated herself when she went back to Madinah.

5. Om Sinan Al-Islamiyyah: Om Sinan was one of the companions who asked permission of the Prophet (PBUH) to go out into the battlefield and assist the wounded soldiers and provide water to the thirsty.

She joined the Prophet PBUH in the battle of Khaibar, helping treat the wounded companions (11).

6. Om Warqah bint Abdullah ibn Al-Harith Al-Ansariyyah: Om Warqah helped to nurse the wounded people. She also participated in compiling the Qur'an and she made her house a little mosque after she took the permission of the Prophet PBUH. She was also known to be a living martyr as the Prophet PBUH used to call his companions: let's go to visit the martyred woman, a s he told her that she will be killed and she was indeed killed by her servant during the time of Omar ibn Al-Khattab (6,12).

7. Al-Robee'e bint Mo'awaz: Al-Robee'e lived during the time of the Prophet PBUH. She was also one of the people who reported a few *Ahadith* of the Prophet PBUH, especially the one about the way he performed the wudu'e. She was one of the companions who attended Bay'at Al-Ridwan in the 6th year of Hijrah. Al-Robee'e helped in treating the injured companions. She died during the time of Mo'awiyah (year 665 CE) (13).

During the Prophet's PBUH time, more female companions helped the injured fighters in the Muslim army by providing wound dressings, splints as well as herbs for pain relief. Some of them are (1,14,15):

8. Om Hakam Al-Makhzoomiyyah,
9. Om Musa ibn Nusair,
10. Safiyyah bint Al-Khattab.
11. Aisha (the prophet's wife),
12. Om Ayman (Barakah bint Tha'alaba)
13. Om Salim (Anas ibn Malik's mother)
14. Omayyah bint Qais Al-Ghafariyyah.
15. Layla Al-Ghafariyyah.
16. Mo'azah Al-Ghafariyyah.
17. Om Al-Ola Al-Ansariyyah.

18. Salma (Om Rafe'e): Salma used to serve and look after the P rophet PBUH and his house hold with her husband also. She helped Khadijah (the Prophet's PBUH wife) during her delivery in Makkah.

19. Himnah bint Jahash (sister of Zainab – the wife of Prophet PBUH): Himnah participated in the battle of Uhud by bringing water to the thirsty, transporting the wounded to safety and providing necessary treatment (13).

20. Zaynab bint Ali: Zaynab was the granddaughter of the P rophet (PBUH). She is known for her bravery and her skills on the battlefield, nursing wounds. In Iran, admirers celebrate Nurse's Day every year, commemorating the contributions of Zaynab. Historically, Zaynab accompanied her brother Husain to Kufah, where he challenged the Umayyad Caliph and was defeated in the Battle of Karbalaa in 680. She was captured at the Battle of Karbalaa and when standing before Yazid and his son Mu'awiyah, she gave such a passionate speech that he ordered her and the other prisoners to be released.

During the Umayyad time there were a few female physicians:

21. Zainab from baniAwd, who was famous for treating eye conditions as well as surgery. Abo Al-Faraj Al-Asfahani in his book (Al-Aghani) also mentioned her in a nice poem:
أمخترمي ريب المنون ولم أزر ... طبيب بني أود على النأي زينبا

22. Faridah Al-Kubra, she moved from Al-Hijaz to Syria.

23. Kharqa'a Al-Amiriyyah, she lived and practised in Al-Hijaz.

24. Salamah Al-Qiss, she moved from Al-Hijaz to live in Syria during the Umayyad time.

25. Hobabah: she lived and practised in Al-Basrah, Iraq (died in year 723 CE).

And during the Abbasid time there were a few female physicians (1):

26- Motayam Al-Hamishiyyah, who practised in the ninth century and died in year 838 CE.
27- Rohass, she lived in Baghdad and died in year 859.

28.Mahbobah, Abbasid Caliphate, Iraq, (died in year 861 CE).

29. Om Asyah (midwife) who lived in Egypt during the Toloniyah State.

During the Muslim ruling in Andalus (modern Spain) there were a few women who worked in Medicine (16,17,18):

30. The sister of Al-Hafid ibn Zohr (the grandson of Ibn Zohr – Avenzoar) and his two daughters who used to practise obstetrics and midwifery as well as treating the sick children (both of them were the private physicians of the wife of the ruler Al-Mansoor in Al- Andalus). There were a few physicians in the family of Ibn Zohr over five generations in Al-Andalus (Ishbilya – Seville).

31. The daughters of Al-Zahrawi were known to practise medicine after being taught by their father. Al-Zahrawi has written an encyclopaedia in Medicine called *Al-Tasrif* (19)and he allocated 10 chapters to discuss midwifery and obstetrics in great details in the 30th volume, which was about Surgery.

32. Om Al-Hasan bint Al-Qadi Al-Tanjaly: who lived in Al-Andalus in the 14th century, and was famous in practising as well as in teaching medicine. She was not keen on writing books as she mentioned in her poem about that. She was also a scholar and taught Tajweed of the Quran.

In Damascus (Syria) there were:

33. Bint Dohn Al-Louz (also known as Dohn Al-Louz): she was a very skilful woman practising medicine who was also one of the Islamic scholars in Damascus. She died in 1216 (9).

In Egypt in the 17th century:

34. Bint Shihab Al-deen ibn Al-Sa'egh: she practised medicine after she took over after her father died in 1627. She became the chief of physicians in Al-Mansouri Bimarstan in Cairo (Egypt) (9). The function of that position also covered the regulating medical body in the biggest hospital in the country in that time.

35. Women surgeons in 15th-century Turkey:
Between those first names of early Islamic history other women practiced medicine and nursery. Few of them were recorded. However, a serious investigation in the books of the history of medicine and writings from the time will certainly provide precise data about their lives and achievements. In the 15th century, a Turkish surgeon, Serefeddin Sabuncuoglu (1385-1468), author of the famous manual of surgery, Cerrahiyyetu'l-Haniyye, did not hesitate to illustrate the details of obstetric and gynaecologic procedures or to depict women treating and performing procedures on female patients. He also worked with female surgeons, while his male colleagues in the West reported against the female healers (Fig 3).
Female surgeons in Anatolia generally performed some gynaecological procedures, like surgical management of fleshy growth of the clitoris , imperforated female pudenda, warts and red pustules arising in the female pudenda, perforations and eruptions of the uterus, abnormal labours, and extractions of the abnormal foetus or placenta. Interestingly, in the Cerrahiyyetu'l-Haniyye, we find illustrations in the form of miniatures indicating female surgeons. It can therefore be speculated that they reflect the early recognition (15th century) of female surgeons treating paediatric neurosurgical diseases like foetal hydrocephalus and macrocephalus (20). The attitude towards women in the history of medicine reflects the general view that society held of women during the period. It is interesting that in the treatise of Serefeddin Sabuncuoglu, we find an open minded view of women, including female practitioners in the complex field of surgery (20).

Figure 3: The main gate of Dar Al-Shifaa showing Serefeddin (Sharaf Al-Din) Sabuncuoglu the chief physician of Dar Al-Shifaa with his two female students

36. Fatima al-Fihriyya in Morocco: Fatima al-Fehriyya has played a great role in the civilisation and culture of her community. She migrated with her father Mohamed

al-Fihri from Qayrawan, Tunisia, and travelled to Fez in Morocco. She grew up with her sister in an educated family and learnt Fiqh and Hadith. Fatima inherited a considerable amount of money from her father which she used to build a mosque for her community. Established in the year 859 CE, the Qarawiyyin mosque later functioned as a university and was considered the oldest, and possibly the first, university in the world (21). Students travelled from all over the world to study there (Fig 4,5).

Figure 4:Fatima Al-Fahriyya established the first university in the world in Fez (Morocco) year 859

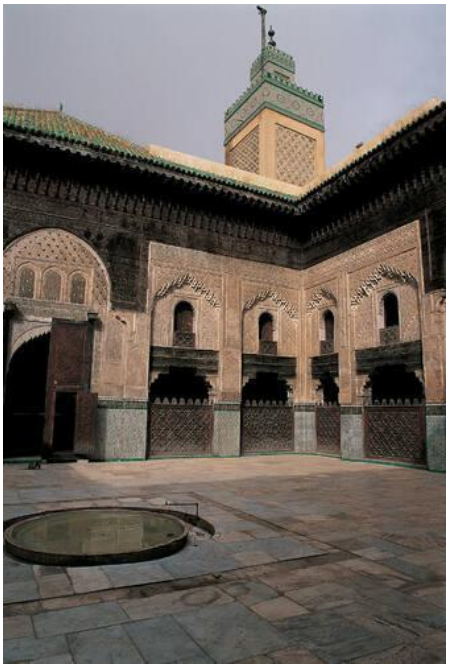

Figure 5 Al-Qarawiyyin University, the first university in the world in Fez (Morocco) – established in year 859

Conclusion

It has been accepted that only male physicians were practicing medicine during the Greek era and after Hippocrates, so not a great deal of female physicians were documented (22).

The Muslim female health providers during the early stage of Islam, who participated in different aspects of medicine, are unfortunately underreported. Ibn Abi Usaibi'aa mentioned only one female physician in his book.

Muslim women have had a great impact in the scientific field and more research is needed to understand their contributions. Muslim women not only used to attend lectures (Fig.6) but also contributed to teaching their male fellows (Fig.7). A reason for the lack of reporting of their work is that unfortunately, there is little that has been written about them; and that which has been written is mainly in Arabic. Unlike their male counterparts, they did not write books or articles. Interestingly, one of the well-respected female Muslim physicians, Om Al-Hasan bint Al-Qadi Al-Tanjaly who lived in Al-Andalus, was not keen on writing about her experience in books and she mentioned a poem in Arabic which made reference to the fact that "writers write, and doers do"

الخط ليس له في العلم فائدة ... وإنما هو تزيين بقرطاس
والدرس سؤلي لا أبغي به بدلاً ...بقدر علم الفتى يسمو على الناس

Hence she was so busy working she would have no time to write!

It is worth remembering that the first registered female physician in England was Elizabeth Blackwell in 1858, after coming from the US where she had qualified in 1849.

It is therefore clear that there is a rich history of female Muslim physicians in Islam, one that unlike those in the West, goes back centuries. Much can be learned from their findings, but more scholarship is needed to understand and appreciate their contributions.

Figure 6: Women attending a lecture and sitting in the first row

Figure 7: A woman is teaching men at a mosque

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Urinary Calculus Formation Theory and Treatments Described by *ĀAhmed Çelebi* in 15th Century Turkey

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Summary

Āhī Aḥmed Çelebi, chief physician to three Ottoman sultans, provides detailed information about the formation and treatment of kidney and bladder stones in his work titled "Treatise On the Urinary Calculus in the Kidneys and the Bladder", which he wrote in Turkish in 1487. The author's statements and his way of handling issues indicate that he is an experienced and attentive physician. It is remarkable that some information given in this book is similar to today's.

After thoroughly describing the aetiology of stone formation in the urinary tract, *Āhī Çelebi* discusses the incidence of urinary calculi according to age and gender. As per principles of Islamic medicine, emphasis is placed on preventative measures. Hence, prophylaxis against urinary calculus formation, i.e. avoiding food considered to be the cause of calculus formation and intake of prophylactic nutrients, is discussed in detail.

Signs and symptoms of kidney and urinary bladder calculi, as well as differential diagnosis are discussed. Medical therapy is discussed and recommended. A description of multi-action medications for relief of specific symptoms such as pain, fever and hematuria is provided. Instruments used in the treatment of a vesical calculus such as syringes, catheters, lithotrites are described, as well as instructions in their use. *Çelebi* also mentions the case of a patient who devised a tool to relieve his own vesical calculus.

Introduction

Āhī Çelebi Aḥmed b. Kemāled din Sirvānī (1432-1524) was a Turkish physician of the fifteenth and sixteenth centuries.[1] He was chief physician to three Ottoman sultans - first *BāyezidII,* then*Yavuz Sulṭān Selīm* and finally, *Ḳānūnī Sulṭān Süleymān*. His monograph "Treatise on the Urinary Calculus in the Kidneys and the Bladder" (*Risāletü'l kilyeteyn ve'l-meşāne* or *Risāle-i hasātü'lkilyeve'l-meşāne*) is dated 893H/1487-8 CE and is written in the Turkish language in Arabic script. The 180-page (80 folios) work contains ten chapters. To research this article, the copy registered at number 1491 in the *Baġhdādlı Wehbī Efendi* section of the *Süleymāniye Library* was studied. Comparison of this text and other ancient texts on similar subjects is beyond the scope of this article.

The treatise comprises interesting theoretical discussions as well as practical knowledge and recommendations. The scientific method and complex devices for diagnosis and treatment did not exist in *Āhī Çelebi's*time. Instead, medical knowledge and practice was based on empiricism, of which the theory of humours was a part. This was understood as a scholarly mechanism of interpreting empirical evidence. As well as referencing the common understanding of humours, *Āhī Çelebi* occasionally cites his own experiences as evidence in his writing.

This treatise was previously transferred from Arabic letters to Latin letters, however some incorrect readings were made and the text was not analyzed and discussed. [2] In another study on Turkish language, the text was evaluated in terms of language characteristics that is spelling, phonetics and morphology. [3] In this study, theoretical and practical information written in the treatise are compiled under specific subject headings and considered in terms of evolution of medicine. The folios of the manuscript from which the information is transferred are given in round brackets at the end of the relevant section. In order to draw attention to common points with today's medical information, relevant publications to some of the topics are cited as sources and brief commentaries are argued within the framework of today's knowledge. The text can be discussed further in relation with modern medicine.

Aetiology of Urinary Tract Calculus Formation

Āhī Çelebi describes the formation of renal stones with the humoural theory. He states that any humour (blood, phlegm, yellow bile, black bile) that decomposes has a tendency to contribute to calculus formation and that decomposed humours remaining in the kidneys give rise to stasis and humidity occurs, causing calculus formation. (6b) Present-day studies reveal that urinary stasis does promote stone formation and humidity is a risk factor for urolithiasis.[4,5]

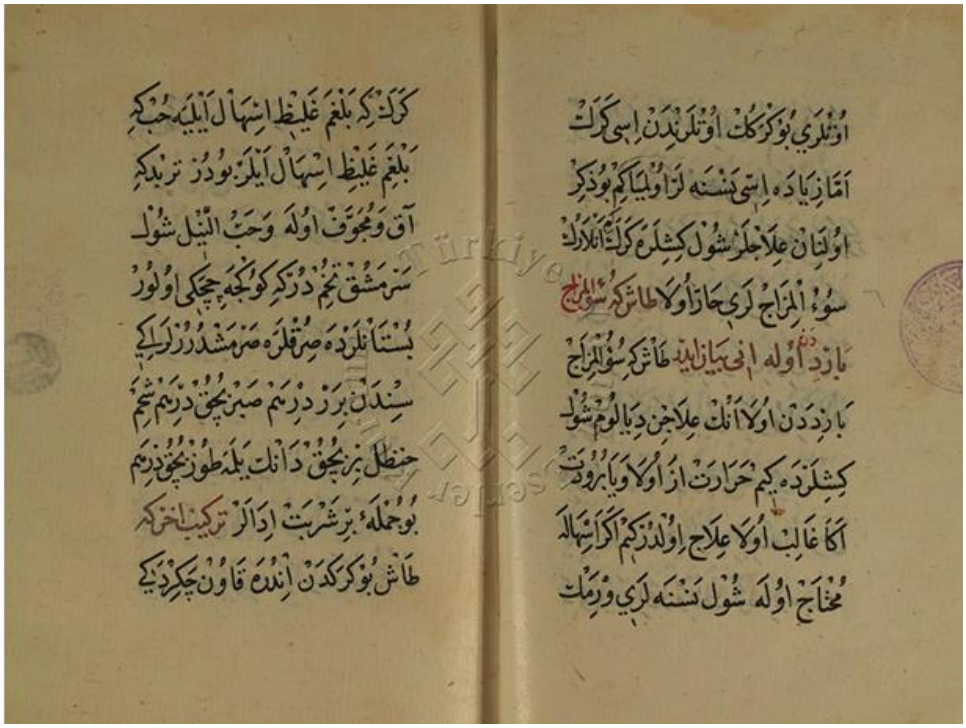
It is claimed in the treatise that calculus formation is a constitutional disturbance and occurs mostly in obese individuals who eat to excess, having fat and humid bodies. (7a) [6] *Āhī Çelebi* writes that calculi appear mostly in the kidneys of the obese (pyknic body type), as obesity can cause the urinary tract and orifices to narrow. Calculus formation in the kidneys is rarely observed in individuals who have asthenic body types. In the asthenic, calculi appear in the bladder. As the lumen of their tract is larger, the humour that causes calculi collects in the urinary bladder, as it does not remain within the lumen of the ureter. (6ab) Although modern medicine does not ascribe completely to this understanding, studies do report causal relationships between kidney stone formation and metabolic syndrome and/or central obesity, with a greater risk of uric acid stones in those with abdominal obesity[7].

The role of gender and age in stone formation is also discussed in the treatise. It is asserted that the incidence of calculus formation is higher in boys malnourished until adolescence. A recent study puts forth that "vesical calculi are commonly seen in developing countries in pediatric age group patients belonging to poor economic status." [8] As to *Āhī Çelebi*, he says that if a boy is given animal or breast milk of the bilious humor, it will cause the internal organs of the boy to become "dry" and dense which causes calculus formation. If the "nature of the milk" is of the phlegm humour, the boy's urine will be denser. The accumulation of dense humor leads to heat in the urinary bladder inducing calculus formation. (6b) Does calcium intake by drinking milk increase formation of calcium stones children? Recent studies discuss the effects of different types of milk and the volume of milk intake on formation of stones. [9]

Were calculi particularly common in the urinary bladder of boys during the Ottoman period? Certificates of consent for vesical calculus surgery are encountered frequently in court registers as the most frequent surgical procedure, and the contracts of consent concerning urinary calculus surgery are most frequently related to boys. There is a case described of a father who signed the contract of consent for his son's operation to reduce or extract a stone. He is described as a boy or a small boy with a stone in his groin/urethra/urinary bladder.[10] Perhaps the incidence of calculi was so high as a result of surgical infection because of circumcision in some cases. Modern studies have shown that urinary tract infection can promote urinary stasis and increase the risk of stone formation.[11, 12]

Āhī Çelebi notes that vesical calculi do appear in girls, although calculi are rarely formed in the urinary bladder of women because of the anatomy of the female urinary tract. The vesical neck in women is free, the urethra is very short and the orifice open and near to the exterior. If a humor flows into the bladder, it is expelled quickly. Women may be able to feel the calculus with a finger. (6b) Modern data shows that the incidence of kidney stones in women is about half that of men.[12, 4]

Āhī Çelebi notes a relationship between lack of sexual intercourse or non-ejaculation and calculus formation. He states that "having desire and libido for sexual intercourse but lack of sexual intercourse, talking on erotic subjects or love making but lack of ejaculation." can contribute to calculus formation. (7b) It is difficult to explain this view of *Āhī Çelebi* in light of our current understanding on this, but a neurological defect that disrupts erection or ejaculation may also affect urine excretion as an autonomic function and left over urine in the bladder may cause stone formation. There are studies on the influence of sex hormones and calculus formation secondary to genital infection which may also cause ejaculatory duct obstruction. [13].



Folios 33b and 34a, the beginning of thr section on the treatment of urinary stone cold in nature, from the "Treatise on the Urinary Calculus in the Kidneys and the Bladder" of Ahi Aḥmed Çelebi

Prophylaxis Against Urinary Calculus Formation

Āhī Çelebi discusses prophylaxis of urinary stones at length. He recommends three action to take for prevention of calculi.

I. Avoid food and drinks causing urinary calculus formation

II. Change attitude and behavior

III. Evacuate substances that cause formation of calculus.

Today's guidelines often provide similar recommendations. [14]

Nutrients That Cause Calculus Formation

Āhī Çelebi discusses the types of urinary stones with reference to the theory of elements. He suggests that kidney stone prophylaxis should differ depending on the specific type of element causing the stoneand its characteristics. The relationship between nutrition and stone formation is explained at length. Malnutrition with food which prevents removal of intestinal gas, consecutive meals, stomach indigestion (gastritis), liver failure, kidneys 'hot' in nature and spoiled unripe humors are cited as causes of urolithiasis. (17a-27b, 29b-33b)

Food and drink that may lead to calculus formation is listed including red meat (beef meat and fat, lamb, lamb head, camel meat, trotter, roasts, kabobs), animal products (spoiled cow milk, rice with milk), raw fruit (bitter orange, citrus, pear, apple) garlic, onion, spinach, vermicelli, shredded wheat, starch pudding, turbid water and old, intense wine. When turbid water or dense wine-syrup mix with other food in the stomach, a sediment is formed which contributes to calculus formation. Contemporary studies show that dietary factors such as animal protein and some fruits and vegetables influence the pH of urine, causing further crystallization and

increasing the risk of urinary stone formation.(7a-8a, 13a) [12, 5]

Measures To Prevent Kidney Stones

Dietary measures are mentioned as prophylaxis against calculus formation. *Āhī Çelebi* recommends certain foods and avoiding heat. Exercise (such as running) and taking a warm bath or engaging in sexual intercourse after a meal and lying on a warm mattress should be avoided. This is to prevent excessive sweating and heat in kidneys, according to the humoural theory (13b, 14a, 16b, 17a) Today, heat-induced sweating is discussed as a cause of stone formation.[15, 16]

If water is drunk in the middle of the meal from time to time, or drunk on an empty stomach, stones will not occur in the kidney, but it is wrong to drink water all the time just because it's a good measure, for various harms arise from the excess of good precaution. (16b) Today, it is suggested that, "uncomplicated stones can be managed conservatively with adequate fluid intake."[12, 14]

Āhī Çelebi suggests that a diet of "easily digestible food" can prevent stone formation. The intake of animal protein promotes calculus formation, but some sources are lower in fat and are less calorie-dense. Thus, intake of certain sources of protein is recommended including white meat like young chicken, house sparrow, pigeon, partridge, swallow and francolin/grouse and red meat like sheep, goat and rabbit. (14a)

A diet of fruit and vegetables, for example, fig, red grape, celery, carrots, Swiss chard, mallow, peppermint, common fennel is recommended. *Āhī Çelebi* provides recipes that will prevent stone formation. (14b-15a) Today we know that the acidity or alkalinity of fruits and vegetables (their varieties, method of cooking and processing) have an effect on stone build-up. [17]

Āhī Çelebi advises that patients should take food and drugs that promote diuresis as a strong stream of urine may allow the calculus to pass. Examples of recommended diuretics are Capparis, chickpea, sheep sorrelroot, asparagus seedand root, and cyperus longus. (55b)[18]

Āhī Çelebi alsorecommends vegetable, fruit and seed oils (walnut oil, almond oil and peanut oil), seeds (caltrops and fenugreek), and plants (spurge /euphorbia and Chinese rhubarb root) as laxatives and to promote renal health. (67a)

Signs and Symptoms of Kidney Calculi

Signs and symptoms of kidney stones are described in detail in the treatise, such as a continuous feeling of heaviness felt around the kidney and a pain that is exacerbated by eating to excess. The pain increases when faecal matter collects in the intestines and is relieved by defecation. Sometimes, testicular pain or thigh paresthesia are signs of a calculus in the ipsilateral kidney. Patients can also report abdominal colic. In "overheated kidney disorder" patients experience fever and rigors. (10a-10b, 11a, 21a)

Āhī Çelebi notes the differential diagnosis between renal colic and abdominal pain. Abdominal pain is felt around the peri-umbilical region but renal pain tends to be felt in the back, radiating to the side and is local. Sometimes it can be associated with thigh numbness, which is not observed in gripe. (9b, 10b-11a)

There is frequent mention of urine inspection in a flask and *Āhī Çelebi* describes the approach to uroscopy and its diagnostic relevance. He states that in the presence of calculi, the normal strength of the urinary stream falters as the dense substances in the urine are left back in the kidneys. Dark urine without pain is evidence of recent calculus formation. This is especially true if the sign appears in old age. Yellowish and reddish sand in urine is a sign of kidney calculus. (9a-9b, 10a-10b)

Signs and Symptoms of Urinary Bladder Calculi

Āhī Çelebi then describes the presentation of urinary bladder calculi. He states that if there is pain and heaviness in the loins radiating inferiorly towards the thighs, it is evidence that the calculus has descended from the kidneys into the urinary tract. Later, if the pain is alleviated, the stone has descended into the urinary bladder. When the stone is in the bladder, pain, heaviness and itching appear at the base of the penis. Sometimes pain is felt in the groin. The patient frequently handles his groin involuntarily. White or grey urinary sediment is a sign of urinary bladder calculus. (9b, 10a, 11a-11b).

Most patients with a bladder calculus have difficulty in urination and feel post-urination urgency. Sometimes the patient urinates abruptly, and this happens often after urination. In these patients the urinary bladder calculus is large and tortuous. A man with a bladder calculus will feel numbness in his penis while walking, with pain at the base of the penis while running. While walking fast or jumping causes pain, lying in the foetal position

relieves the pain at the base of the penis. When the stone reaches the bladder neck, it becomes painful and prevents urination. A large, heavy stone can make defecation difficult and can sometimes cause rectal prolapse. (11b, 12a-12b, 13a)

There can sometimes be two or more calculi in the urinary bladder. During exercise there is traction between the stones and as a result the urine can contain a white sandy sediment which settles at the bottom of the flask. If there is much sand, this indicates that the calculus is soft and disintegrable. If there is very little or no deposit, it indicates that the calculus is hard. (12b-13a)

Medical Treatment of Kidney and Bladder Calculi

Medication is indicated depending on the type of kidney stone and the characteristics of the patient's urine. Several formulas are prescribed for the treatment of pain, inflammation, bleeding, fever, obstruction and urinary tract infections . (44a-44b, 46b-47a, 54a)
If the pain cannot be relieved while the calculus is stuck in the urinary tract, analgesics, sedatives, tranquilizers and soporifics are indicated. *Āhī Çelebi* advisestheuse of Indian hemp, opium, olibanum, radish pyrethri romani, henbane, mandrake and lettuce seeds. (74b-75a)

Prescriptions given in the text comprise drugs with multiple medicinal effects. For example, one formulation is composed of terra Armenica, olibanum, dragon gum, limestone, melon seed and Plantago lanceolate. Each of the drugs in this tablet treat specific symptoms caused by the stone, with diuretic, analgesic, sedative, antiseptic, styptic, antipyretic and anti-inflammatory effects.(45a-45b) Similarly, a resin–balsam formulation consists of pine, spruce, balsam tree, dragon gum, gommaTurca and sandalwood, altogether having antiseptic, analgesic, styptic, anti-inflammatory and analgesic effects.

Āhī Çelebi recommends inorganic nutrients (both metallic and non-metallic minerals (fossilized organic substances) having active ingredients that prevent certain kidney stones, such as lapis Judaicus[19], pumice, oilstone, whetstone, khwarezm bead and spumas salis(63b,73b).Today we know that these minerals are sources of elements such as magnesium and calcium which are recommended as nutritional supplements for prevention of different types of kidney stones, having an antilithiatic effect.[6]

Administration of Pharmaceutical Preparations to Fragment and Disintegrate Stones of the Urinary Tract (Lithotripsy)

When a kidney stone does not pass on its own due to its size or position, *Āhī Çelebi* would administer drugs that might create stone fragments "*small enough to be expelled in the urine"* both orally andby irrigation of the bladder. Ingredients of a recipe for this purpose are unshelled cucumber seed, unshelled melon seed, unshelled pumpkin seed, celery seed, fennel seed, pumice stone or burned glass. These would be pounded in a mortar and mixed with vinegar and honey. This was to be drunk on an empty stomach. (28a-28b). There are other recipes included that reduce the kidney stone and promote its descension to the bladder in the form of slime.(34b)

Some interesting calculus reducing prescriptions aregiven under separate headings. Below, I give examples of these calculus reducers.

Scorpion oil: rhubarb, gentian, willow, capparis/caper root bark, 10 dirham each are pounded together.130 dirham almond oil is added and all are stirred. The mixture is put in a bottle and left in the sun for a week. Then the herbs are filtered. Ten live scorpions are added to this oil. The bottle is closed and hanged against the sun for two weeks. This is drained, the scorpion are thrown away and the oil is administered. (41b-42a). Dried he-goat /buck blood**:** A four year old buck is slaughtered. After the animal bleeds for a little time, blood is taken and put in a clay pot. After coagulation, pieces of blood are put on a sieve, covered with a cloth and left in the sun. It must be dried completely, without humidity or dust. At one intake three dirhams can be given. (42a-b) Burned glass: White Damascus silica frit, yet not wet, is put in an iron scoop and held on a fire. When it gets red hot, it's left in cold water. Then again it's held on a fire, when it gets red hot, it's again left in cold water. Melted frit is collected. This process is repeated until the product is in such a state that it could be pounded into powder in a mortar. (43b-44a)

Syringe for Vesical Irrigation

Āhī Çelebi describes a syringe for bladder irrigation, which he named as "*suatacak*" in Turkish. Aprobeis inserted into a tube fit to the urethra. A piece of cloth is wrapped on the forepart of the probe inserted into the tube. A thinner tube is fitted on the tip of the original tube. Then the thinner tube is dipped into the fluid needed and the probe is pulled back. Hence fluid is

drawn into the original tube. Then the thin tube is inserted into the external urethral orifice. Water is carried gradually into the urinary bladder. (45b- 46b)

Various bladder irrigants are outlined. A decoction prescribed for irrigating the bladder with a syringe is described. It consists of violet, lettuce, cucumber, sesame and gomma Turca (cherry tree mucilage) with resulting antifungal, sedative, analgesic, anti-inflammatory, diuretic and lubricating effects.(45b)[18]

Āhī Çelebi states that the treatment for suppuration as a result of calculi obstructing the urinary tract is irrigation by means of a clyster. A prescription for the treatment of urinary tract infections is composed of white lead, terra sigillata (sealed clay tablets), dragon's blood resin, opium and cannabis sativa. This is mixed and pounded, then dissolved in Plantago major juice and rose water. These ingredients have several therapeutic effects including diuretic, anti-inflammatory, antipyretic, analgesic and antispasmodic actions.(45a)

A Case of Urine Retention

Āhī Çelebi writes about two devices developed by a patient known as *ĀmirĀlī Keyvān Bey* suffering from bladder stones. A renal calculus descendedand became stuck in his bladder. He could only pass two or three drops of urine with difficulty. In terms of treatment, some doctors recommended a massage on the penis. Others said the meatus of the penis must be widened by an incision to give way for the calculus. Others again recommended dressing. Diuretics were of no use. Tired of the futile interventions of useless physicians, *Āmir Keyvān*took it upon himself to devise a solution, inventing an instrument touse on himself. He first designed a catheter. He made a slender tube/cannula of silver. One end of the tube was sound, the other end was narrower with holes like a flute. When he felt the urge to urinate, he would insert the tube from its thinner end through the urethra and push the calculus back. Thus he was able to urinate through the holes before withdrawing the tube.(48b, 50a-50b)

But *ĀmirKeyvān*wanted to be completely free from this trouble. He made a second instrument which was a lithotrite. He constructed a clamp – a pair of steel pincers, with their ends like short shafts. The rivet of the pincers was at the base of the shafts. Whenever the clamp was opened, its tip widened. One day he inserted the pincers through the urethra into his bladder. When it met the calculus, he opened the clamp - the tip opened, but the ends were designed to only widen slightly as to cause minimal discomfort. He held the stone firm with the short tip, and the stone crushed into pieces there and then he was able to pass urine. (51a-51b)

Surgical Procedure for The Removal Of Bladder Stones (Lithotomy)

Āhī Çelebi advises on important considerations before practicing lithotomy and warns the practitioner. He says that if the stone is of considerable size and does not flow out of the bladder with the drugs and medical preparations mentioned, there is no other measure that will help but lithotomy. However, it is likely to cause harm. It's rarely safe and there is a high chance that the patient will not survive. Some ancient physicians said that they even excised the kidney stone from the back, but he notes "*There is no one who did this in the present time. It's too dangerous.*" However, he states that incision of the bladder is easier and safer and that whoever wants to do this operation should consider three issues thoroughly. Firstly, it is necessary to pay attention to the age of the patient. Very young or very old patients cannot survive surgery. Secondly, one should be careful about the stone size. If the stone is small, it escapes from the finger and is difficult to find and remove, causing great trouble for the patient. If the stone is too large, the surgical wound will be great in size. If the stone is long, the incision should be made superior to the stone to minimise the size of the surgical wound. Finally, one should evaluate the patient's pain intensity. If the patient suffers too much and is tired of his troubles, he will be willing to endure the inconvenience of surgery to be rid of it. If the patient's pain is mild, they will not want to undergo surgery.

Āhī Çelebi says, "*The situations we have mentioned in this chapter are the necessary skills for the physician. Surgical incision is an order of surgery and it requires observation.Since it is difficult to address it in a book, it is not mentioned in this short treatise*.(52a-55b)

Conclusion

The evidence and commentary that *Āhī Çelebi* presented more than 500 years ago in a period before modern medical technology suggest that he was a wise and experienced physician. His discussion on the aetiology, prophylaxis, presentation, prognosis and treatment methods of urinary tract stones indicate that he made practical and effective use of the scholarly methods of his time - observation, visual inspection, physical examination, analogy, classification, discussion - most skillfully. This work should invite further detailed study

so that its place in medical history can be fully acknowledged.

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Islamophobia and its Impact on Mental Health

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For Muslims, navigating Islamophobia is often an accepted part of daily life, whether it be in the form of vulnerability to abuse on the street, stereotypes in mainstream media, online trolls, or Prime Ministers commenting on Muslim women's dress.(1) However, despite widespread acknowledgement of the functioning of Islamophobia, there remains a severe lack of research surrounding its impacts on Muslim communities in terms of mental health and wellbeing.

What is Islamophobia?

Since its entry into mainstream vocabulary with the publication of the Runnymede Trust's 1997 report *Islamophobia: A Challenge for Us All,(2)*the term 'Islamophobia' has been widely used but has yet to reach a unified consensus in terms of its definition. Part of the difficulty in defining the phenomenon is due to the broad range of activities, statements, policies, and acts that are captured under its banner. Ultimately, Islamophobia functions as a mechanism for excluding or restricting Muslims' participation in political, economic, social, cultural, and public life on an equal footing with their non-Muslim counterparts. The result is a broad spectrum of social, political, and economic processes and phenomena that act to disrupt Muslims' access to equal opportunities, freedoms, and treatment across society. In this way, Islamophobia functions, reproduces, and is manifest as a form of racism and follows the same logics as other forms of racism.

As such, Islamophobia encompasses far more than simply hate crime. In reality, such occurrences are merely symptomatic of underlying socio-political conditions that create an environment that is hostile to Muslim identities within public spaces, and result in a vast array of barriers for Muslim communities, whether that be in the form of employment discrimination, discriminatory applications of police powers, challenges to learning and education, obstacles to political or public engagement, or the impacts of unconscious biases amongst healthcare practitioners.

Muslim Engagement and Development (MEND) have produced explanatory guidelines in this regard which outline examples of how Islamophobia can manifest in daily life. As but one example drawn from these guidelines, MEND states that Islamophobia can be witnessed in "applying ethnocentric approaches to the treatment of Muslims (judging another culture solely by the values and standards of one's own culture)"(3) This can be seen within healthcare, for instance, when Muslim women may be assumed to be vulnerable to domestic abuse or being forced to have multiple children due to the unconscious bias of healthcare practitioners on the basis that the patient chooses to wear a hijab. This will inevitably impact the treatment that such women receive and the way that they interact with healthcare services.

The many faces of Islamophobia

When approaching Islamophobia, it is essential that we capture it as a holistic phenomenon in all its forms. In other words, we must examine its structural forms across society, for to limit an understanding only to overt forms of verbal or physical abuse in public spaces provides only superficial insights that cannot result in any meaningful conclusions.

In understanding the broad spectrum of Islamophobia's manifestations, it is useful to examine three intersecting primary sources:

Private Islamophobia: As explained by Khaled Beydoun, private Islamophobia can largely be considered the Islamophobia promoted, perpetuated, and fuelled by private actors,(4) be it individuals or informal and formal groups and organisations, such as the English Defence League, Britain First, and Pegida UK.

Structural Islamophobia: At the other end of the spectrum, structural Islamophobia should be understood as anti-Muslim bias and racism that is perpetuated, authorised, and maintained by the state through legislation and policies that intentionally or unintentionally operationalise the subordinating, restricting, or disadvantaging of Muslims, often through methods of securitisation or the enforcement of orientalist tropes and narratives.

Media Islamophobia: Media Islamophobia is often the bridge between private and structural forms of Islamophobia, with the media acting as both a conduit for and mobiliser of the private Islamophobia found within public opinion to place pressure on the state to enact restrictive policies against Muslims, whilst also acting as a medium through which the state may legitimise and promote such policies to the general public.

In the UK context, an examination of structural Islamophobia in the present moment will necessarily involve scrutiny of the current Conservative Government. However, it is also important to note that no legislation or policies are created in a vacuum and that many of these policies are the product of a trajectory of political machinations over the last several decades. For the purposes of this discussion, there are four key areas in need of acknowledgement:

- Public pronouncements of Islamophobia from Government officials,
- Government disengagement with Muslim organisations and voices,
- Government engagement with anti-Muslim organisations,
- The securitisation of Muslim identities.

Public pronouncements of Islamophobia from Government officials

In recent years, there has been a wide range of evidence detailing Islamophobia in the Conservative Party brought forward by organisations including the Muslim Council of Britain,(5) Hope Not Hate,(6) and MEND,(7) all of which document incidents of Islamophobia emanating from Conservative cabinet members, members of Parliament, councillors, and party candidates. The Islamophobic biases of these individuals can only influence and shape public policy agendas, thereby entrenching structural Islamophobia within UK policy frameworks.

Government disengagement with Muslim organisations and voices

Rather than engaging with a broad spectrum of Muslim organisations and voices, the Government has traditionally insisted on dealing with a handpicked minority of Muslim voices and organisations who already support their policy positions, particularly on issues such as counter-terror, media regulation, and Palestine. As such, this policy of disengagement actively underpins the functioning of structural Islamophobia as it excludes representative Muslim voices from socio-political life and legitimises the continuation of policies that are detrimental to the interests of Muslim communities.

Government engagement with anti-Muslim organisations

In the UK, the normalisation of anti-Muslim rhetoric has been given legitimacy by self-declared ‘experts’ and think-tanks, such as the Henry Jackson Society,(8) the Quilliam Foundation,(9) and Policy Exchange,(10) which claim a monopoly on what is considered ‘valid analysis’ among policy circles. However, the political agendas espoused by such organisations serves only to entrench anti-Muslim biases and discriminatory approaches within UK policy development. Consequently, the shaping of structural Islamophobia is a two-sided coin of governmental disengagement from mainstream Muslim voices on the one hand, and its reliance upon think-tanks and ‘experts’ who promote anti-Muslim agendas on the other.

The securitisation of Muslim identities

It is through the influence of the aforementioned think-tanks and 'experts' that Muslims have become subsumed within the narrative of security throughout governmental policies. This securitisation of Muslim identities has led to a series of questionable counter-terror legislation and public policies which disproportionately impact Muslim communities.(11) One of the most damaging constructs within this process of securitisation is the concept of ‘extremism’, ‘British Values’ and ‘non-violent

extremism' – all of which remain ill-defined within current Government policy but which function as emotive buzzwords within political discourse to silence and de-legitimise the voices of Muslim political opponents. Consequently, in deploying notions of 'non-violent extremism', Muslim individuals and organisations are frequently demonised for using entirely democratic methods to advocate for causes that disrupt the dominant political ideology.

What does racism and Islamophobia look like in the NHS?

As of September 2019, from data from NHS trusts and Clinical Commissioning Groups in England, we see that 124,715 doctors were employed in the NHS, of which nearly 13,000 were Muslim, comprising approximately 10% of the total medical workforce, and approximately 17% of those doctors where the religion was declared.(12) For a community that makes up 5% of the national population, Muslims are clearly over-represented in the medical workforce.

Despite this representation, racism and Islamophobia have been well recognised in the NHS. In the 2020 NHS Staff Survey, ethnic background was the most commonly cited reason for discrimination with 48% of staff who claimed to be discriminated citing this reason. Additionally, 69% of BAME staff reported that the organisation provides equal opportunities, contrasted with 87% of white staff.(13)Meanwhile, BAME doctors have being discriminated against whilst applying for senior job roles according to a report by the Royal College of Physicians, which found that 29% of white respondents were offered a post after being shortlisted for the first time, compared with just 12% of BAME respondents. The report stated, "We have analysed the data from the past 8 years of surveys and have found consistent evidence of trainees from BAME backgrounds being less successful at consultant interview. This is despite adjustment for potential confounding factors."(14)Furthermore, Black doctors have been previously shown to be paid less than their white counterparts.(15)

During Covid-19, these inequalities have persisted with Muslim doctors having reported difficulty with accessing PPE due to keeping beards for religious reasons(16)and twice as many BAME doctors feeling pressurised to work with inadequate PPE than their white counterparts.(17) Furthermore, Covid-19 has highlighted numerous ethnic disparities, with worse morbidity and mortality rates(18) and a report from Public Health England concluding that racism may have contributed to these outcomes.(19)

One of the best examples of structural Islamophobia in the NHS is the PREVENT programme. Numerous extensive studies and reports have concluded that the strategy should be repealed due to concerns surrounding its disproportionate targeting of Muslims, racial bias in official training materials, and evidence that referrals are damaging to people's mental health.(20) Ultimately, the structurally Islamophobic underpinnings of the strategy mean that it should have no place in the NHS.(21)

Islamophobia and mental health

While there is growing interest in the impacts of racial discrimination on mental health, the impacts of Islamophobia remain virtually unexplored within research. Pascoe and Richman undertook a meta-analysis on the effects of perceived discrimination on mental and physical health and found significant negative effects on both fronts.(22)Similarly, meta-analysis by Paradies et al found that racism was a significant determinant of mental health across a range of diagnoses including depression and anxiety.(23)

Of particular import is a large longitudinal survey conducted by Wallace et al which found similar negative effects on psychological wellbeing for various ethnic groups in the UK, but also a cumulative effect for those people who had experienced discrimination on more than one occasion, with this cumulative effect being more pronounced in Pakistani and Bangladeshi groups,(24) which in light of the fact that these communities in the UK are overwhelmingly Muslim, indicates that Islamophobia may be a contributing factor to increased negative impacts amongst these communities.

Understanding the impacts of Islamophobia on mental health is essential for the development of policies to support effected communities. This is especially important considering the challenges that many British Muslims already face in terms of their access to healthcare and mental health services on account of their ethnic identities. Indeed, research has demonstrated that BAME people are more likely to experience structural racism within mental health services in the NHS in a variety of ways, including the lack of cultural competence, overinflation of risk assessments and more coercive care.(25) This is likely to compound help-seeking behaviours amongst such communities.

Conclusions

In 2018, The Royal College of Psychiatrists issued a position statement on racism and mental health outlining a number of recommendations to tackle this area.(26) This position was reaffirmed in 2020 (27) . However, as the Covid pandemic has shown, structural racism remains a significant problem not only within the NHS, thus dedicated progress is required to address structural inequalities across society.

While recognising the challenges posed by structural inequalities including Islamophobia and addressing them at a governmental and policy level is essential to successful outcomes, the mental health impacts of structural Islamophobia within existing policies are poorly understood. However, there is currently great potential for further research in this area. Victim support services such as MEND's Islamophobia Response Unit (IRU) are building an ever-increasing presence within Muslim communities as demand for these services grow. As such, services such as the IRU currently hold hundreds of cases studies and a wealth of data that is in need of analysis. These grassroots organisations are therefore valuable potential partners in participatory research. One can only hope that research practitioners emerge with a thirst to tackle this under-explored area of mental health.

Conflict of interest:

Both authors are employed by MEND, Muslim Engagement and Development which is an NGO tackling Islamophobia in the UK

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The Need for Deen: Muslim Mental Health During the COVID-19 Pandemic

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Abstract

The COVID-19 pandemic has impacted every aspect of daily life, but its toll on people's mental health has been especially concerning. Previous studies have presented mixed evidence about the efficacy of religious coping behaviors in improving mental health outcomes. Our goal in this study was to investigate the religious coping behaviors and mental health outcomes of Muslims worldwide in response to the COVID-19 pandemic. The Yaqeen Institute for Islamic Research surveyed nearly 9,000 Muslims globally during three stages of the pandemic—initial quarantines, pre-Ramadan, and post-Ramadan. They asked about Muslims' religious beliefs, behaviors, and perspectives about the pandemic. We then analyzed the results and found that Muslims primarily relied on religious coping behaviors like seeking forgiveness from Allah, performing daily prayers, making du'a, and reading Qur'an, and that these behaviors were associated with better mental health outcomes. These findings underscore the importance and benefit of Islamic teachings for Muslims dealing with trials and calamities like the pandemic.

Introduction

The COVID-19 pandemic has significantly impacted every aspect of daily life, though its toll on people's mental health has been especially concerning. Multiple studies around the world have documented rising rates of anxiety and depression (1). As a result, the mental healthcare system has become overwhelmed, further exacerbating the world's collective mental health crisis (2). For many, coping mechanisms have been a critical tool to combat new mental health challenges.

These mechanisms include general coping (e.g., regular exercise and meditation) and negative coping strategies (e.g., substance abuse and watching the news excessively) (3-4). Religious coping (e.g., reading/listening to the Quran, prayer, seeking forgiveness from God, supplicating to God, donating to charity, and listening to religious lectures) has been an additional tool for many and has allowed people to adopt new outlooks, beliefs, and behaviors that offer a sense of meaning, connection to God, emotional comfort, and personal control (5-8).

Although there is research on religious coping strategies and their impact on mental health, the findings are mixed. Some studies have found that positive religious coping is associated with higher life satisfaction, but not with depressive symptomatology (9-10). Another study found that positive religious coping is associated with lower rates of depressive symptomatology, but not with anxiety disorders (11). Moreover, positive religious coping is associated with greater meaning in life and the ability to spiritually connect with others (5). The research on Muslims and religious coping is even more sparse. Not only is there very little research on Muslims living in Muslim majority countries, but there is far less on Muslims living in non-Muslim majority lands. The research that does exist shows that religiosity is associated with lower anxiety in Muslim samples and that mosque attendance increases the amount of support that a person receives (12).

To understand why the relationship between religious coping and mental health outcomes is so mixed, some have suggested that a faith tradition's specific beliefs may influence how adherents of that faith use religious coping mechanisms, which further impacts mental health outcomes. For example, Islam suggests that plagues and pandemics may be tests or punishments from Allah (13-15). This religious belief may impact the way that Muslims use religious coping strategies during COVID-19, which may further influence their mental health outcomes.

Our goal in this paper was to further understand the relationship between Islamic teachings, religious coping, and mental health outcomes of Muslims living in non-Muslim majority countries during the start of the COVID-19 pandemic and pre- and post-Ramadan.

Methods

The Yaqeen Institute for Islamic Research conducted online surveys during three stages of the COVID-19 pandemic (i.e., initial quarantines, one month into the pandemic and pre-Ramadan, and two months into the pandemic and post-Ramadan) to investigate the beliefs, practices, and perspectives of Muslims around the world. They shared their surveys online through various social media outlets like YouTube, Facebook, and WhatsApp and used previously validated scales (for depression, anxiety, mindfulness, etc.) and newly constructed measures (for masjid attitudes, checking the news, etc.) in their surveys—all can be found in Umarji et al., 2020. In a collaborative effort between researchers from the Yaqeen Institute and the Stanford Muslim Mental Health and Islamic Psychology Lab, we analyzed the data from these surveys using regression techniques. We used multiple linear regression to investigate the correlates of anxiety and positive Ramadan experience and used logistic regression to investigate the correlates of depression. Furthermore, we conducted t-tests to analyze the pattern of missing data and were able to conclude that the missing data was not systematically biased. Finally, we did list-wise deletion for multivariate analyses with missing data in order to have a complete case analysis.

Results

Of the nearly 9,000 Muslims who completed the surveys, we analyzed 4,271 responses focusing specifically on Muslims living non-Muslim majority lands: North America, Europe, New Zealand, and Australia. The participants were generally educated (on average, they held a bachelor's degree), and 73% were female.

Stage 1 surveys were administered during initial quarantines, and asked participants about their religious beliefs about COVID-19, coping behaviors, mental health, and religious concerns about the pandemic. We found that most Muslims believed that COVID-19 was a test or wakeup call from Allah. Moreover, 10% of respondents felt that the pandemic was a great punishment from Allah, though the majority did not feel it was much of a punishment. In terms of coping behaviors, our team found that religious coping behaviors were positively associated with age, reading the Qur'an, and seeing blessings during the pandemic. In terms of mental health, we found that, on average, respondents were sometimes feeling anxiety—11% of respondents reported feeling anxiety always or most of the time, and 48% reported feeling it little to never. Anxiety was positively associated with greater uncertainty tolerance and negatively associated with seeing blessings during the pandemic, praying five times a day, expressing gratitude, and reading the Qur'an. Finally, 52% of respondents reported seeing a lot of blessings during the pandemic, which was positively associated with gratitude, age, praying five times a day, and reading the Qur'an.

Stage 2 surveys were administered one month into the pandemic, before the start of Ramadan, and asked participants about their mental health, coping behaviors, and religious beliefs about the pandemic. We found that respondents were feeling slightly more anxiety than during initial quarantines and that 24% of respondents met the cut-off for major depressive disorder. Uncertainty intolerance and negative coping were

associated with greater odds of reporting depression, while mindfulness and self-esteem were associated with lower odds of reporting depression. In terms of coping behaviors, we found that religious coping behaviors were used frequently—76% of respondents made du'a, supplication, and 66.03% engaged with the Qur'an in some way. Religious coping behaviors were negatively associated with uncertainty intolerance and positively associated with seeing blessings and mindfulness. Negative coping behaviors were positively associated with anxiety, uncertainty intolerance, and financial concerns, but negatively associated with reading the Qur'an, seeing blessings, and mindfulness. Finally, in terms of religious beliefs about the pandemic, we found that the majority of respondents said that their relationship with Allah had improved during the first month of the pandemic—44% of respondents reported that it was somewhat better and 25.5% reported that it was much better.

Stage 3 surveys were administered two months into the pandemic and after Ramadan, and they asked respondents about their well-being. We found that well-being after Ramadan was significantly better than before Ramadan. Moreover, we found that 73% of respondents said that they had a better Ramadan during the pandemic compared to the year before. Having a better Ramadan during the pandemic was positively associated with accessing masjid content online, reading more Qur'an than the previous year, enjoying tarāwīḥ prayers, giving charity, mindfulness, exercising regularly, and self-reported self-regulation.

Discussion

Through this study, we were able to investigate the mental health and religious coping behaviors of a large sample of Muslims living in multiple countries around the world. Ultimately, we found that religious coping mechanisms like seeking forgiveness from Allah and reading the Qur'an were associated with lowers levels of anxiety, suggesting that, for Muslims, Islamic activities and beliefs were associated with better mental health during the pandemic.

We found that Muslims were more likely to seek forgiveness and make du'a than to engage in any other coping mechanism, religious or not. This finding supports existing research that shows that Muslims—more than any other faith group—most often rely on religious coping mechanisms as their initial form of coping, as opposed to seeking professional help or utilizing other general coping strategies (3). This behavior is reinforced by Islamic teachings, which provide Muslims with a holistic worldview with which to interact with and understand the world. To Muslims, Allah is Omnipotent, Omnipresent, and in total and active control of peoples' lives. The Muslim's daily activities (like prayer or reading Qur'an) further reinforce this worldview, making it unsurprising that Muslims most often rely on religious coping mechanisms in times of distress, like the COVID-19 pandemic.

We also found that respondents who believed that the COVID-19 pandemic was a substantial punishment from Allah were more likely to engage in religious coping behaviors like praying and reading Qur'an compared to those who did not view the pandemic similarly. The way that people respond to calamity is primarily influenced by their beliefs about the *nature* of calamity. The Qur'an speaks to the nature of calamity and trials in life through multiple verses that emphasize the fact that life is merely a test. For example, the Qur'an states that "We will surely test you with something of fear, hunger, a loss of wealth, lives, and fruits" (Qur'an, 2:155) so that "they would return [to God]" (Qur'an, 7:168). Moreover, Islam also outlines the appropriate response to such tests such as increasing religious practices like reading the Qur'an, prayers, practicing patience, seeking forgiveness, and finding the blessings in difficulty. Finally, Islam even speaks to the view of calamities like the pandemic as punishments (14-16). Indeed, historically, the Islamic literature has characterized pandemics as punishments, but has emphasized that they offer great rewards for those who respond appropriately (13,15,16). Ultimately, the Qur'an and Hadith frame such events as opportunities to become closer to Allah.

It is important to note that positive religious coping (e.g., prayer) was associated with less anxiety, negative coping was associated with more anxiety and depressive symptomatology, and general coping was not related to anxiety or depressive symptomatology at all. Additionally, mindfulness was associated with better mental health and was positively associated with religious coping, whereas mindfulness was negatively associated with negative coping. We also found that 73% of respondents reported having a better Ramadan during the pandemic than the year before. These findings further emphasize the critical role and strength of religious coping behaviors and their positive impact on the mental health outcomes of Muslims facing distress.

Finally, we found that the negative effects of uncertainty intolerance persist despite a person's religious coping behaviors and despite Islam's emphasis on the

importance of accepting uncertainty in life. This might be explained by how uncertainty beliefs are rooted in a person's culture and upbringing (17). Ultimately, more research is necessary to examine the relationship between religious coping behaviors and uncertainty intolerance, especially in Muslim contexts.

Conclusion

Our goal in this study was to examine the impact of religious coping behaviors and beliefs on the mental health of Muslims living in non-Muslim majority countries at the outset of the COVID-19 pandemic and pre- and post-Ramadan. We found that positive religious coping strategies like seeking forgiveness from Allah, making du'a, reading the Qur'an, and praying five times a day were associated with lower anxiety and depression and higher mindfulness and perception of blessings in life. These forms of religious coping behaviors are rooted in Islamic teachings that encourage Muslims to understand the nature of trials in this world and outline several religious practices (like reading Qur'an and praying) as constituting appropriate responses to calamities like the pandemic. Moreover, these behaviors are framed as opportunities for Muslims to become closer to Allah. This study also brings up the importance of dedicating further research on addressing the barriers to accessing professional help from a faith-based lens given that Islamic faith encourages a balance between religious coping and seeking out treatments for ailments. Ultimately, our findings underscore the foundational role that Islamic beliefs and behaviors play in positive mental health outcomes for Muslims, especially in response to the COVID-19 pandemic.

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Climate Change - Should Muslim health professionals care?

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"*Climate change is the biggest public health threat of the 21st century*."[1]

The good thing about facts is that they are true whether you want them to be or not, regardless of your political party affiliation, religion, heritage and profession. The truth is that climate change is real and worsened by mankind's excess consumption of fossil fuels. It is truly the emergency of our times, something humans should all care about now. This excess fossil fuel consumption has led to dramatic environmental effects with drastic public health consequences, including COVID-19.[1]

The Lancet has stated that: *"climate change is the biggest public health threat of the 21st century."*[1] Public health not only involves the human community, but also the individual and the planetary community, comprising the animal and plant kingdoms as well. There is a balance that exists in the world and excess fossil fuel consumption continues to disrupt that balance. This imbalance is causing several public health impacts of climate change which directly affect every person and every community.

Contrary to some popular beliefs, humans are one species and have similar basic needs and goals. You need to eat, drink, sleep, and feel secure. So does every other human on this planet.

There have been several psychological theories as to what exactly these basic needs are, but one of the most popular theories is Maslow's hierarchy of needs.[2] Climate change is hurting humanity's basic needs and it's only getting worse: *"Taken as a whole, the range of published evidence indicates that the net damage costs of climate change are likely to be significant and to increase over time."*[3]

Impacts

Food

Every living thing on this planet needs some form of nutrition. Humans need to eat every day, and multiple times a day. Imagine how you feel when you skip a meal. For those who fast, you can appreciate the value of food when you haven't eaten for 14-16 hours. However, food insecurity is a common reality for many around the world. In 2019, around 2 billion people suffered from some level of food insecurity.[4] That is almost a quarter of the entire world population. COVID-19 is projected to increase the number of undernourished people by about 83 and 132 million people.[4]

Changing weather and precipitation patterns and insect burden from climate change affect food security. Crop production can be negatively impacted, particularly as there may be less available land for production and farming with deforestation, poor soil quality and drought. Food prices also increase as a result of decreased supply which can lead to food insecurity. This can also lead to an increased reliance on calorie-rich foods that are also nutrient-poor, leading to micronutrient malnutrition and obesity.[5-7]

Warmth

Climate change has been leading to increasing global temperatures every year. Although warmth is recognized as a basic need, this excess heat has led to dire consequences. These unusually high temperatures are leading to increased heat waves and subsequently, heat-related illnesses, like heat stroke and cardiovascular stress.[8] Europe experienced a record-breaking heat-wave in 2003 that led to the deaths of 70,000 people.[9-10] Vulnerable populations around the world are more susceptible to these temperature changes. There was

a significant death toll in Karachi during a historic heat-wave in 2018 that mainly impacted lower-income workers.[11]

The United States and Australia have witnessed a dramatic increase in wildfires due to increased drought and decreased rainfall, as a result of increasing global temperatures.[12-13] Increased fuel combustion, from fossil fuels and events like wildfires, can affect exposure to air pollutants by altering weather and air pollution concentrations.[14] Particulate Matter 2.5 (PM2.5) refers to the microscopic particles in the air that measure 2.5 microns (one millionth of a meter). Particulate matter that is produced by coal combustion are air pollutants that have already been confirmed to be carcinogenic and mutagenic, like polycyclic aromatic hydrocarbons (PAHs), oxygenated polycyclic aromatic hydrocarbons (OPAHs) , and azaarenes.[15-16] Some of these volatile organic compounds are also produced in wildfire smoke.[12] Air pollution can also lead to lung diseases and worsening of lung conditions, like asthma, chronic obstructive pulmonary disorder (COPD).[12]

Water

Water balance serves another purpose for humans beyond a basic physiological need. Precipitation-related events from increased global temperatures are increasing with hurricanes, cyclones and typhoons.[3,17] Category 4 and 5 hurricanes have all increased in frequency since the 1980s.[17] Sea levels are rising as well, as glaciers and ice sheets melt and as the ocean expands from warming temperatures.[18] This is having a disproportionate impact on low- and middle-income countries (LMICs) who suffered 67% of climate change-related deaths between 2010 and 2013.[19] This is only expected to increase as these weather-related disasters increase as storm intensity and sea levels rise.

These weather disasters are also accompanied by flash flooding leading to infrastructure devastation. This directly impacts healthcare delivery, like access to emergency services, follow-up for chronic illnesses, access to medications.

When there is excess standing water after these extreme precipitation events, vector-borne diseases become a subsequent public health concern.[20]

Security/safety

Although there are typical daily and seasonal variations in vector patterns, climate change has led to variations in typical patterns which is leading to changes in infection patterns. Seasons for tick-borne illnesses are extending longer and new areas that are experiencing these changes in patterns in the U.S. are at a new risk for vector-related illnesses they were not accustomed to previously.[20] Tropical and sub-tropical viruses, like dengue fever and Zika virus, both transmitted via mosquitoes, were seen in a wider range of latitudes, like Europe.[21] This year has witnessed a once-in-a-hundred-year pandemic, the COVID-19 pandemic. Although there are proven direct links between climate change and COVID-19, climate change creates situations where it is difficult to handle the crisis: stressed healthcare systems, weather extremes that threaten shelter and make physical distancing difficult.[22]

Humans need safety and security from illnesses, like communicable diseases. We also need protection from loss of shelter and violence. Sea level rise threatens living conditions along the coast. This leads to the phenomenon of climate refugees. It's estimated that about 50-250 million could be displaced from their homes by 2050.[23] The CNA's Military Advisory Board has called climate change impacts "threat multipliers," that can worsen current stressors, like political instability.[24] When resources are limited by weather extremes and situations like water shortages, this can lead to worsening conflict and sociopolitical instability.[24] Climate change also played a role in the tragic Syrian crisis from decreasing freshwater access as well as drought.[25]

Rest/Mental Health

Despite being a stigma within many communities, mental health is an extremely vital component of human health. It has been documented that mental health problems increase after disasters, including ones made worse by climate change, like Hurricane Katrina and wildfires.[26] This includes post-traumatic stress disorder, alcohol abuse, child abuse and domestic violence. This increase in stressors and mental health impacts has also been linked to pre-term birth and maternal complications.[26]

Progress Made

Although all of these public health implications are real and appear to be bleak, there is a hope: ourselves. We do have the ability to stop the long-term, perpetuating effects of climate change if we take serious actions as a global society.[27]

The Paris Declaration/Conference of Parties (COP) was a landmark commitment by high-income and low-middle income countries to work collaboratively to decrease carbon production and focus on mitigation and adaptation strategies. Some investment funds are discussing divestment from fossil fuels, like Black Rock, the largest fund manager in the world.[28] Attention is also now being directed towards "sustainable food systems,"[29] which are defined by the World Commission on Environment and Development (also known as the Brundtland Commission) as: "a food system that meets the needs of the present without compromising the ability of future generations to meet their needs."[30-31] Given environmental change and other concerns like population size and public health issues, a sustainable food system will become a priority.[29]

There needs to be continued focus on individual and community (local, national and international) responses to tackling climate change. Limiting global temperatures to less than 2 degrees Celsius is one of the main benchmark goals form the Intergovernmental Panel on Climate Change (IPCC) which can prevent worsening of these climate change impacts on public health.[3]

Muslim World Response

The Muslim world has made contributions to addressing climate change. The Federation of Islamic Medical Associations (FIMA) came together and all the Islamic Medical Associations (IMAs) signed onto a consensus statement to tackle climate change. They recognized that as medical professionals, inspired by their Islamic faith and how the Prophet Muhammad (Peace and Blessing Be Upon Him and His Family) lived his life[32], they will work to carry out their God-given responsibility as stewards of the earth. FIMA has pivoted its efforts to address climate change through its FIMA Save Earth platform. IMANA, the Islamic Medical Association, has focused on climate change as its flagship advocacy initiative. IMANA Medical Relief (IMR) has been responding to healthcare needs in disaster situations around the world, addressing climate adaptation needs. The Islamic Declaration on Climate Change was signed by Muslim-majority countries in Istanbul, Turkey in 2015, advocating to dramatically decreased carbon emissions and redirect attention to renewable energy.[33] The World Innovation Summit on Health (WISH), with support from the Kingdom of Qatar, has drafted a report on Climate Change and Health with recommended strategies for healthcare professionals.[34]

Conclusion

Each generation had its own problems and battles to fight. Climate change is ours. It is a global emergency that we need to care about and an emergency we have the ability to stop. We are descendants of intelligent and brave Muslims who shaped the world with their faith and determination. We have the ability to do the same, if we want to. There is no one coming to save us because we are the ones we are waiting for.

"Indeed, Allah sends for this ummah, at the onset of every century, those who renew the religion for it." (Prophet Muhammad PBUH)[35]

Further resources and how to get involved:

Email Marium Husain to get more involved
WHO - https://www.who.int/globalchange/summary/en/
CDC- https://www.cdc.gov/climateandhealth/default.htm
Sunrise Movement - www.sunrise.org
World Innovation Summit on Health, Climate Change and Health Report: https://2020.wish.org.qa/about-wish/ (email wishclimateaction@qf.org.qa to get involved).

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What Is a Ibadah Friendly Hospital ?

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Keywords: *Islam, Ibadah Friendly Hospital (IFH), Ibadah*

Abstract

The quest to practice Islam as a complete way of life is not something unusual for Muslims, especially for healthcare workers who are committed to the practice of Islam according to the teachings of our beloved Prophet Muhammad SAW. Thus, for committed Muslim healthcare workers, the practice of medicine should ideally be in line with the Islamic worldview. Their aim should principally be to seek the pleasure of Allah SWT through performing their utmost best while also serving humankind as part of their *amal* and as *ibadah*. The introduction of this Ibadah Friendly Hospital (IFH) has been recognized and accepted as one of the best ways of translating Islam in our daily life as healthcare workers as we are dealing with people who require support, in particular spiritual support. Its implementation can be adapted according to the situation be it in Muslim or non-Muslim countries. It provides the platform to seek His pleasure and perform our *ibadah* at all times and at any place while at work. The best of Allah's creation (human beings) are cared for and aided in reaching the best state of health to facilitate their *ibadah.*

In the IFH, patient care is holistic in approach and should follow the guidelines as laid down by the Quran and Sunnah. Understanding and following *Maqasid Al-Shariah* and *Qawaid Al-Fiqhiyyah*are the key factors in the implementation of IFH. Here lie the opportunities to carry out and apply the concept of *'Dakwahbil Hal'* in our work. It helps to improve the quality of services because the task being carried out is an *amal* and *ibadah* for us. In other words, this IFH is a process of Islamisation of health services which, if followed properly, will have a direct and positive impact in improving the quality of health services at large.

Introduction

Many FIMA members have played a significant and major role in the process of *Islamisation* of medical services in this modern era. Many excellent hospitals have started the Islamisation program since early 80s [1]. As an example, the Islamic Hospital in Jordan is a role model to many of us who dream of working in an Islamic environment and set up. The Islamic Hospital of Jordan was built as a charity, non-profit training medical institution, which started operations in 1982[2]. The combination of up-to-date medical facilities with the Islamic elements in the running of the hospital has no doubt set an excellent exemplary model for hospitals in recent years. Although the management does not publicize this hospital as a Shariah compliant hospital, it is a known fact that they are following Islamic guidelines in their work process.

They not only provide excellent medical services to the people of Jordan but also to those around Jordan including many from Palestine. It has also been used as a training center for postgraduate and sub-speciality medical training in Jordan. There are

many special Islamic Social Responsibility (ISR) programs being practiced in the hospital, such as creation of special funds for poor patients and *infaq* programs by doctors. These can easily be adopted by other hospitals which aspire to instil Islamic values in their operations.

Ibadah Friendly Hospital (IFH)

The development of the Ibadah Friendly Hospital and the Shariah Compliant Hospital stemmed from the Islamic Hospital of Jordan. The author's personal experience while attending the FIMA Council meeting in 1992 hosted by the Islamic Hospital of Jordan had triggered the idea of setting up a similar hospital in Malaysia. The establishment of Al-Islam Specialist Hospital Kuala Lumpur in 1996 was directly encouraged by the overall performance of this Islamic Hospital of Jordan. It was built with full conviction to set up an excellent Islamic hospital as well as a centre for *Dakwah*. Thus, Al-Islam Specialist Hospital under the Muslim Youth Movement of Malaysia (ABIM)was built to establish an institution with a *tauhidic* paradigm. Without doubt, this program was initiated as a result of the impressive and remarkable experience during the FIMA meeting at the Islamic Hospital of Jordan then[3].

Al-Islam Specialist Hospital was built with a vision of establishing a hospital with Islamic concepts and integrating the Islamic values in the running of the hospital. However, in Malaysia, Hospital UniversitiSainsMalaysia (HUSM), a government teaching hospital, was the first to use the term "IFH" in 2004 as part of their process of integrating Islamic values in the running of the hospital[4].

Their programs were mainly focused on assisting their patients to pray plus having programs to mark and celebrate special Islamic events. As for Al-Islam Specialist Hospital, IFH was officially launched in 2006. The approach and vision was more inclusive and more comprehensive, not only in providing care for patients and helping them perform their *ibadah* but also in the management of the hospital. In this program, the management has taken a proactive role in assimilating this noble concept at every opportunities available as part of the *Dakwahbil Hal* approach. Thus, we have introduced many new programs into the hospital such as Islamic Social Responsibility (ISR), *Usrah*, *Tazkirah*, daily Quranic reading (1 day 1 page) to mention a few.

FIGURE 1: Paradigm Shift In IFH

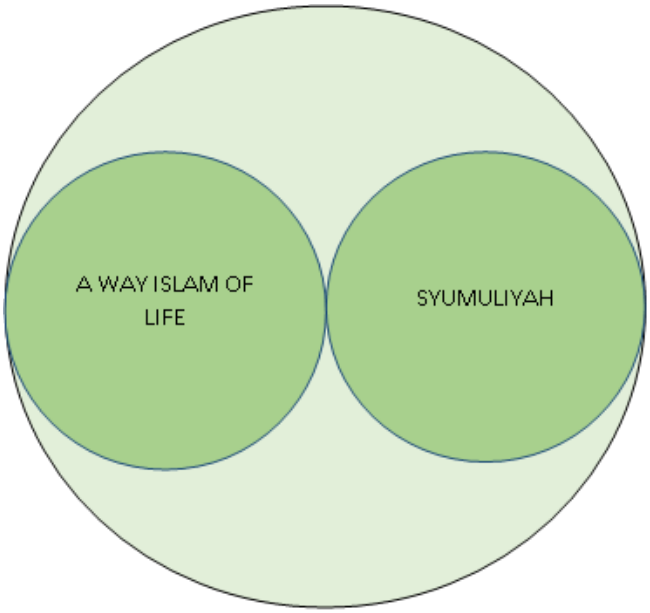

FIGURE 2: Islamic Worldview

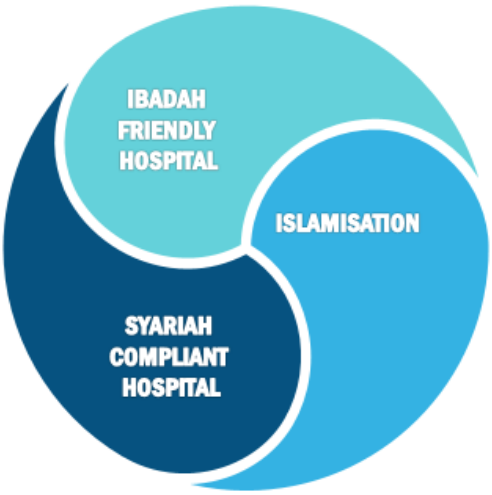

FIGURE 3: Islamisation of Health Services

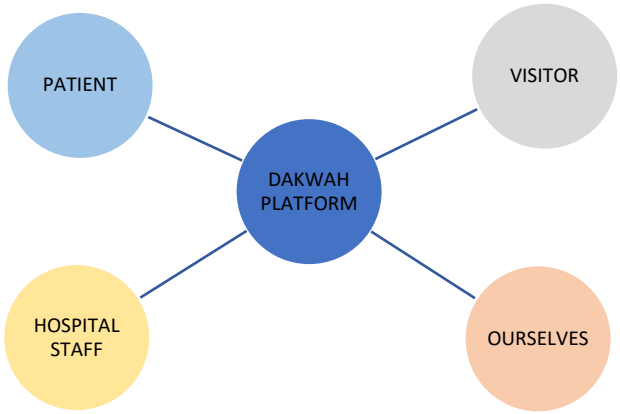

FIGURE 4: Ibadah Friendly Hospitals as Dakwah Platform

From 2006, Al-Islam Specialist Hospital has initiated and shared this noble concept and program with many hospitals in Malaysia and overseas both in private and government sectors. Many seminars and workshops were organized as part of our awareness campaign. With the mercy of Allah SWT, the Ministry of Health Malaysia (MOH) has adopted IFH as one of their official programs in 2014[4].This was a significant milestone for the IFH program since the MOH has given the blessing for the program to be an official program. Our Indonesian counterpart, MUKISI, working in partnership with the Indonesian Council of Ulamak (Majlis Ulama Of Indonesia-MUI) went one step further when they established the Shariah Hospital Accreditation Program under MUKISI in 2016 [5].

Since then, they have established the *standard instrument for certification of Shariah hospitals* [5].Alhamdulillah, many of our FIMA members especially in Pakistan and Nigeria have taken the task of sharing this program and have even refined the program further [2].

FIGURE 5: IFH Worldwide Program

What is an Ibadah Friendly Hospital (IFH)? What are the criteria for one? What is involved in establishing an Ibadah Friendly Hospital? Is it important for us to know what it is all about? Do we need to establish this program in our hospital? Or are these hospitals meant to be owned by Muslims only? As for most of us, the term IFH is new and does not mean much and may not be relevant to us. It may not sound important to many of us, especially if we think we are successful in our career. The majority of our FIMA members have not been exposed to this concept or paid minimal attention to this issue of Islamisation in their medical practice.

Before we go further, let us ponder for a while and give a thought to these questions which will be relevant regarding this IFH:

1. How many of our Muslim patients perform their salat while they are under our care?
2. Who is responsible in helping Muslims patients perform their salat?
3. Have we ever discussed Islam or spirituality with the non-Muslims patients ?
4. Have we ever assisted terminally ill patients under our care in the final seconds of their life?

To answer the first question, it is estimated that up to 80% of patients in the ward do not perform their *salat* in one of the government hospitals in Malaysia[6]. Can we imagine if it happened to ourselves or to our families?

Below are some of the reasons why they do not perform their prayers:

1. Patients assume they can replace their prayers later(*qadha*)[6]
2. They assumed they are being excused from praying because of their illness and being in the hospital[6]
3. Patients are ignorant about the need to pray while they are sick[6]
4. No assistance and guidance from medical staff[7]
5. Hospital management do not provide support and facilitate patients to perform their ibadah [8]
6. The assumption that the Muslim patients should understand and know their responsibility.

Have we ever thought who is going to help us to say *Shahadah* or remind us to remember Allah at the end of our life? How would we feel if our relatives died after resuscitation without being assisted to say the *Shahadah*? Are those duties expected from the Muslim staff? Are we aware that the ultimate goal of a Muslim is to die with Khusnul Khatimah?[9].Let us remind ourselves about the saying of the prophet Muhammad SAW: 'The best amongst you are those who are beneficial to humankind'[10].

The concept of *ziarah* is such a noble act and good deeds to the Muslims[11].We are almost with our patients every day to perform the *ziarah*. Are we not lucky enough to be selected amongst those who will get the *barakah* if we do the *ziarah*? Islam is a complete way of life[12].Our existence in this world is to serve Him[13].Thus, for Muslims, we must perform our duties in an excellent manner with full dedication. However, most of us are being brought up in a secular environment and system and so our understanding and practices of Islam are far from perfect. Fortunately despite this , the Islamic revival which started in the early seventies has helped us to increase our awareness regarding these concepts and will hopefully set the foundations for future generations. .

Many Muslims, especially the youth, have started to understand and practice Islam as a way of life. The IFH program is a paradigm shift from a *secular* into a *Tawhidic Paradigm*[1].The concept of *ibadah* needs to be understood as including every single task we perform, so long as the intention is to seek the pleasure of Allah SWT[14]. Ibadah is no longer confined to *salat*, *fasting*, giving *zakat*, or performing *Umrah* or *Hajj*. It encompasses every single action of our life, provided it is done with good intention (*niyah*).Understanding this core issue of "Ibadah" is the key to the concept of Ibadah Friendly Hospitals. Taking into consideration the proper definition of ibadah in Islam, we can apply the IFH concept in our current setup even to those working in a non-Muslim society.

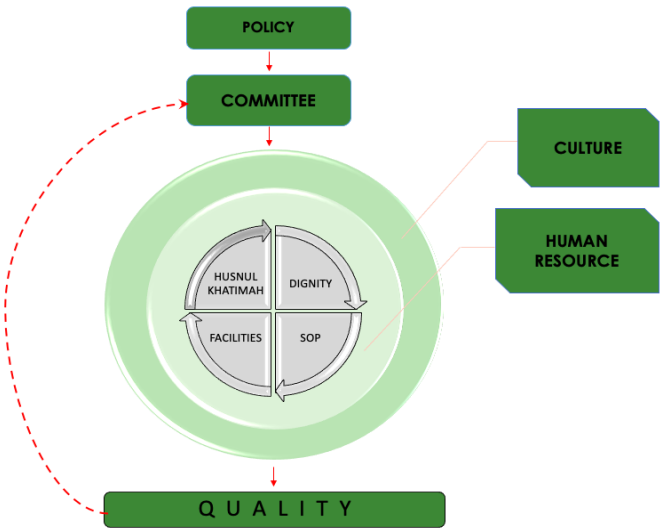

FIGURE 6: IFH Process Workfow

The objectives of IFH includes:

1. Towardsachieving *Mardhatillah*(acceptance of Allah SWT)
2. Aiming for success in this world and the hereafter
3. Treating and managing patients using a holistic approach

4. Assisting ourselves/staff/patients and relatives to be closer to Allah SWT
5. Helping and guiding patients /staff/family to perform their ibadah especially *salat*
6. Providing the best services to the *ummah*/society
7. Application of work as ibadah and *amal*
8. Hospital as a platform for *Dawah*

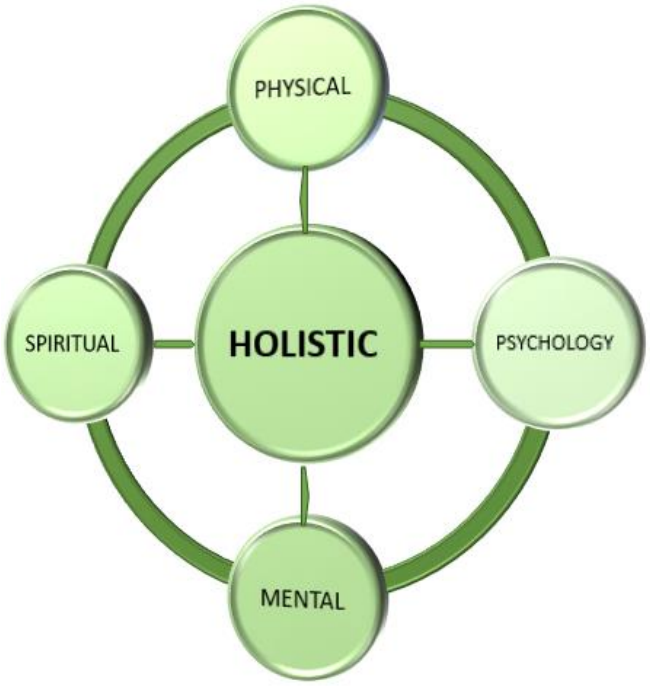

FIGURE 7: Concept of Health in Islam

This IFH concept and program should be guided by :

1. Al-Quran and Sunnah
2. Maqasid Al-Shariah and Qawaid Al-Fiqhiyyah
3. Concept of *Rukhsah* and *Dharurat*

MaqasidAl-Shariah and QawaidAl-Fiqhiyyah in IFH

One of the most important developments in Islamic medical ethics is the application of *MaqasidAl-Shariah* and *QawaidAl-Fiqhiyyah* in medical practice. This concept of *MaqasidAl-Shariah* was coined by Al-Ghazali many years ago[3]. It has become an important tool in guiding our ethical consideration especially in today's advancement in new technologies. The application has simplified our understanding of the problems that arise. It helps us in making decisions based on the broad criteria outlines such as preservation of religion, life, *aqal*, inheritance and property [15]. Al-Ghazali [3]has divided *Maqasid Al-Shariah* into three levels which include *Dharuriah,Hajiyat* and *Tahsinat*. The application of *Maqasid Al-Shariah* need to be based on the principles of *QawaidAl-Fiqhiyyah*. This includes the principles of *Intention, Yakin,Hardship, Injury and Custom*. The trust of IFH lies in the application of *Maqasid Al- Shariah and Qawaid al-Fiqhiyyah.*

TABLE 1:Maqasid Al-Shariah, The Purpose of Shariah

MAQASIDAL-SYARIAH THE PURPOSE OF SHARIAH	
To Preserve Religion	حفظ الدين
To Preserve Life	حفظ النفس
To Preserve Wisdom	حفظ العقل
To Preserve Inheritance	حفظ النسل
To Preserve Wealth	حفظ المال

TABLE 2: Qawaid Al-Fiqhiyyah, Islamic Legal Maxims

QAWAID AL-FIQHIYYAH ISLAMIC LEGAL MAXIMS	
Principle of Motives	القصد
Principle of Certainty	اليقين
Principle of Injury	الضرر
Principle of Hardship	المشقة
Principle of Custom	العرف

Principle of *Rukhsah* and *Dharurat*

As mentioned earlier, Islam is a complete way of life, thus Allah SWT has given us the guidelines for when we are faced with unusual and difficult situations. We still need to perform our ibadah even in situations which may be life threatening. This life threatening or difficult situation is called *Dharurat*-Quranand has mentioned on many occasions about the way we shall approach the situation such as in Surah An-Nisa about *salat* and

wudhu[16]. When faced with this situation, we have to apply the principle of *Rukhsah* .In normal situation(*Azimah*) we have to follow the usual guidelines such as performing our *salat* within a specific period. However, when we are in a situation called *Dharurat*, then the concept of *Rukhsah* is applicable especially for patients. The most frequent situation is *salat* for patients in the ward i.e., they can do *jama'* prayer combining *Zuhur* and *Asar* or *Maghrib* and *Ishaa'a*. Other situations include the use of *Tayammum* replacing *wudhu* if the condition prohibits the use of water. As mentioned earlier, this is an essential concept which need to be understood in depth by Muslim healthcare givers if we want to apply the IFH program.

Standards In Ibadah Friendly Hospital:

The following discussion will focus on the proposed Standards In IFH. The list is long but these standards should be taken into consideration when planning the implementation of this program.

TABLE 3: STANDARDS IN IBADAH FRIENDLY HOSPITAL

1.	**HOSPITAL POLICY OF IMPLEMENTING IFH:**
	Adopting the IFH as a hospital policy Integration and assimilation of good values in hospital administration Vision and Mission of Hospital taking into consideration the IFH program toward excellent hospital services Stakeholders should ensure that the IFH becomes an integral part of the hospital policy.
2.	**ORGANISATION STRUCTURE:**
	Establishment of an IFH Committee with specific job scope and organizational chart that reflects this aspiration. Direct involvement of the Hospital Director and senior members of the management in the IFH Committee Establishment of Spiritual Department or Chaplaincy Department in ensuring the successful implementation of IFH programs Regular meeting and report by the committee (at least 4x/year)
3.	**CULTURE IN IFH:**
	GENERAL CULTURE-good values – (*Itqan/Ikhlas/Ihsan*) SPECIFIC CULTURES-Culture of *smiling & salam* Reciting *Bismillah/Alhamdulillah/Insha'Allah* at appropriate time pre/during or post procedure Remembering God - for non-Muslims patients Campaign/poster/banner promoting these cultures and awareness of IFH Continuous monitoring of the staff practices and assimilation of these culture
4.	**HUMAN RESOURCE MANAGEMENT:**
	Basic training – awareness about IFH Introduction programs and basic trainings for all staff on IFH Preparation of manual for basic training in IFH REGULAR ongoing program - sustainability and monitoring
5.	**FACILITIES FOR IFH:**
	Orientation for patients about *salat* facilities and providing assistance to those needed *Salat* reminder/assisting patients to perform *salat* Audio visual facilities in reminding patients/staff on prayer Facilities to perform *salat* (*Qibla* direction/proper attire/clean area) Bottle spray/*Tayammum* powder/Books/Guidelines for prayer/*wudhu*/*Tayammum*) Patients attire – covering *Awrah* in ward/during delivery/ procedure & surgery Separate wards/rooms for different gender
6.	**SOPS IN IFH:**
	General SOPs - assimilation of good values at all levels-good character (*akhlaq*) SOPs in all clinical settings - orientation for new admission Pre & post procedures Chaperone Guiding and helping patients to perform *ibadah*
7.	**DIGNITY OF PATIENTS AND STAFF**:
	ECG by same gender

	Catheter performed by same gender Ensuring *awrah* of patients in OT/delivery rooms are being taken care of following *shariah* guidelines
8.	**KHUSNUL KHATIMAH:**
	Establishing chaplaincy services - (*talqin* services/spiritual support for patients and relatives) Assisting family in preparing WASIAT/Family support *Talqin* - encouraging family to *talqin* patients/ensuring staff available to support patient during terminal stage Assisting family for the funeral arrangement
9.	**QUALITY MANAGEMENT:**
	Quality Committee in monitoring the implementation of IFH Internal and external audit Patient's feedback regarding the IFH programs in the hospital Scheduled monitoring of the programs

These are some of the suggested elements which could become the essentials in the implementation of IFH. There are many additional programs which need to be implemented in IFH. All departments and sections need to prepare SOPs and programs related to the IFH. The additional elements added in the normal SOPs are the added values of the hospital. It should be made known that there is only one set of SOPs in the hospital.

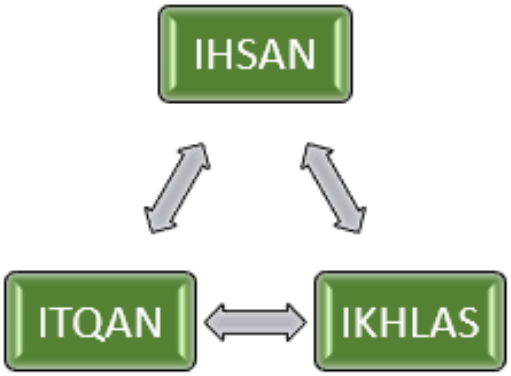

FIGURE8: Professional Muslim With Soul

Summary and conclusion

The IFH program has been a major milestone in the process of *Islamisation* in our medical services. This program allows us the flexibility to be a *d'aee*at all the time. We are not only performing our duties but also performing our *ibadah* which we hope to be considered as *amal* if we complete them with the proper *niyah*. Alhamdulillah, we have seen the interest, seriousness, and commitment of many of our FIMA brothers in implementing this program once they have listened and understood the real objectives and implication of this program.

The message is clear to those who understood this concept. In other words, IFH is for us to prepare for the hereafter (*akhirah*). It is immaterial whether we want to adopt the Shariah Hospital or IFH, because the ultimate aim is to get the blessing and acceptance of Allah SWT. For some of us, we can only apply and adopt part of the program since the conditions and situation is not in our favour. As for us at the Academy of *Ibadah* Friendly Hospital, we have given the commitment to share our 20 years of experience in implementing the IFH with our fellow FIMA members and to anybody interested in the program.

As part of our future undertaking of providing and preparing excellent services, Insha'Allah the Academy will be offering the Post Graduate Course in Islamic Chaplaincy soon. This program will be a joint program with the Markfield Institute in the UK and the University of Selangor (UNISEL). Let us pray to Allah to give us the opportunity to be the best *ummah*. Let us work together and translate Islam as *rahmaton lil aalamin* (mercy for all mankind) in our medical work.

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Management of Muslim Patients Undergoing Local Anaesthetic Procedures During Ramadan

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Key words: *local anaesthetic, Ramadan, fasting, skin procedures, hand, dental procedures*

Background:

Fasting during Ramadan is a fundamental pillar of Islam in which Muslims refrain from food and liquids as well as other activities. This is daily from sunrise to sunset and is one month long. Muslims fasting will typically have a large meal after their fast at sunset, and a further meal before sunrise. It is based on the lunar calendar and thus the start date changes by approximately 11 days each year when using the solar calendar (365 days). Thus, daylight hours can vary significantly between the Winter and Summer. Fasting days missed should be made up for outside of the month of Ramadan.

Engaging about medications and procedures with fasting Muslims can be challenging. For many, this will include for example, patients with diabetes mellitus or chronic kidney disease. Local anaesthetic (LA) procedures are common, and can broadly be divided into dental and non-dental. They include percutaneous or topical anaesthetic agents. Examples of where they are used includes skin lesion excisions, traumatic lacerations, peripheral injuries such as hands, vascular access procedures (e.g. angioplasty), and intra-oral or dental procedures. Given that patients will not be eating or drinking during this month, intra-oral or dental procedures require their own evaluation. Clinicians should be aware that many patients feel strongly about keeping their fasts where possible, including those considered exempt from fasting due to illness.

In this review, we give an overview of LA agents, explore religious rulings around fasting whilst undergoing LA procedures, and review any available safety data. Further to this, we discuss anticipated difficulties in speaking to Muslim patients about this. Importantly, we will give recommendations which health care providers can implement to maximise safety if patients do choose to fast. Discussion around tablet treatments, fasting with diabetes, and general anaesthetic (GA) procedures are not discussed here.

Local anaesthetic

A local anaesthetic (LA) is a reversible agent that typically works by blocking sodium channels and reducing or stopping afferent neuronal signals from sensory fibres (1). The decision to undertake a procedure under LA versus GA usually depends on the volume of LA required (e.g., a large versus small skin lesion), the presence of infection, and duration and type of procedure. Other factors such as surgeon and patient preferences play a role.

Infrequent side effects in high doses include neurological and cardiovascular depression, and thus maximum

recommended doses exist. Lidocaine is the mostly widely used LA with a rapid onset within two minutes, and a duration of up to ninety minutes. Other commonly used LA agents such as Bupivacaine or Levobupivacaine have a longer onset of action (up to thirty minutes), however can last longer (up to 4-8hours) (2). A prolonged duration of action can be beneficial due to the reduction in need for oral analgesics later on, which a fasting patient may decline. Addition of adrenaline provides a good haemostatic effect and allows use of higher doses of LA.

Religious rulings around local anaesthetic

The first and most important evidence in Islam comes from the Holy Quran. The verse below states that those who are ill are exempt from fasting.

"However, should any one of you be sick or on a journey, then (he should fast) a number of other days (equal to the missed ones)"

Surah Al-baqarah, Ayah 184, The Holy Quran. (Chapter Al-baqarah (The Cow), Verse 184)

A ruling on injections for medical purpose was passed by the Permanent Committee for Scholarly Research and Ifta/Fataawa al-Lajnah al-Daa'imah (10/252) (3). The Committee was established 1971 and is the main Islamic organisation in Saudi Arabia that passes issues rulings in Islamic jurisprudence.

"Being given medicine via injection does not break the fast, whether it is intramuscular or intravenous, so long as the injected substance does not provide nutrition, because in that case it is like food and drink which are forbidden to the one who is fasting".

Through this, we can clarify to patients that injected LA agents, irrigation of wounds, sutures, and any antibiotic ointments, creams or dressings used after the procedure, are not a form of nourishment, and are necessary steps to ensure treatment of the condition.

Safety Data

The PubMed database was searched for articles relating to the safety of fasting specifically during Ramadan, and surgery. Although no formal data on the safety of LA procedures during fasting was found, this is generally thought to be safe. It is also discussed in a number of dental surgery publications. Related studies found are explored below, however with the caveat that many are based on studies outside the United Kingdom (UK).

Certain factors should be considered when planning a certain procedure whilst a patient is fasting. It would be unsafe to defer certain procedures such as skin cancer procedures, or traumatic lacerations. This is because risks such as infection, invasion, or metastasis may rise considerably. Clinicians should exercise a common-sense approach to this, for example, an elderly patient insistent on fasting with a relatively long local anaesthetic procedure may find this extremely challenging, and should be dissuaded from fasting if the procedure is urgent. Patients may also refrain from tablets and drinking small amounts of water with this, and thus analgesia and antibiotics can be challenging.

For 'high-stake' local anaesthetic procedures, e.g., percutaneous coronary intervention (PCI), our strong recommendation is to avoid fasting. This is because the potential for small complications to have significant effects is greater. One study investigating the safety of fasting during the first 3 month following PCI found this to be unsafe (4). Drawing on data from other larger procedures, a review of patients undergoing bariatric surgery around the month of Ramadan showed no increasing risk versus times distant from Ramadan (5). In a further prospective analysis in obesity surgery, more than 80% of patients changed the timing of their medications. Nearly 90% adhered to their prescribed medications (6).

At present, it remains unclear if fasting during Ramadan may benefit wound healing (7). There may be additional advantages for wound healing during Ramadan from patients smoking less during this period. There may also be immune advantages to fasting which could have implications for wound healing (8). Early post-operative nutrition may have a role in improving wound healing, and has led to Enhanced Recovery After Surgery (ERAS) protocols, including protocolised peri-operative nutrition for more major procedures (9). Care must be taken in years where Ramadan falls in the Summer months, where patients may be fasting greater than sixteen hours for part of the month. During this time, there may a risk of under-nutrition, rather than simple circadian-related fasting.

We advocate the use of a simple blood glucose measurement as a monitoring tool in patients undergoing LA procedures (e.g., lasting longer than fifteen minutes) whilst fasting, once at the beginning, and at any further clinical need, e.g., a suspected vasovagal reaction. Considerable efforts have been made to improve safety

whilst fasting in diabetes mellitus, and this will usually be through the diabetic team.

For post-operative analgesia, we would recommend avoidance of non-steroidal anti-inflammatory drugs. This is due to the association of fasting with perforated peptic ulcers (10, 11). Oral paracetamol and weak/moderate opioids (e.g. codeine) are usually sufficient if required post-operatively.

Management of patients with chronic conditions such as diabetes mellitus or adrenal disease during Ramadan is complex. A very useful summary traffic light table for when it may be acceptable or unacceptable for patients with chronic conditions to fast can be found through the British Islamic Medical Association (BIMA) Rapid Ramadan Review (12). Where possible, advice should be undertaken through discussion with respective sub-specialities. For patients taking anticoagulation, evidence for INR change is mixed between within the therapeutic range, below this, or raised (13-16). In the study of 32 patients where INR was found overall to be raised, no bleeding or thrombotic events were reported (14). Thus, INR should be checked prior to local anaesthetic surgical procedures. Fasting may reduce the efficacy of clopidogrel in diabetic patients (17).

Medical Emergencies during LA Procedures

Medical emergencies that may occur during LA procedures include anaphylaxis, asthma, cardiac emergencies, epileptic seizures, hypoglycaemia, adrenal insufficiency, and syncope. Almost without exception, these conditions will necessitate administration of medication immediately (e.g. adrenaline injection in the case of anaphylaxis), or immediately after the initial event has taken place (e.g. diazepam injection in the case of prolonged epileptic seizures). Islamic rules governing fasting are very clear; one of the acceptable reasons for breaking the fast is if life is threatened. Thus, if a person has a condition that is a threat to his or her life (e.g. poorly controlled diabetes), it is forbidden by Islamic law for them to continue fasting (18-21).

The most common medical emergency during dental treatments in healthy fasting patients is a hypoglycaemic attack. The onset of the attack can be triggered by the increased stress level during dental treatment or during administering the LA agent. The signs and symptoms of a hypoglycaemic attack include shaking/trembling, slurred speech or vagueness, sweating and pallor, blurred vision, tiredness/lethargy, confusion/aggression, and in severe cases, loss of consciousness. The management of a hypoglycaemic attack should be done using an 'ABCDE' approach, and usually involves the use of buccal/oral glucose gels, intramuscular glucagon, or IV glucose, as per local policy. The patient should not continue their fast after this.

As a recommendation, it is advisable to defer any dental treatments in diabetic patients until either after they break their fast (iftar), or after Ramadan where possible (22).

Surgical Skin and Hand Procedures (non-dental procedures)

In this section we explore non-dental procedures. The range of percutaneous procedures is large. This includes for example, excision of skin lesions, repair of traumatic lacerations, hand and upper limb procedures, pacemaker insertion, and vascular procedures, e.g. angioplasty. The recommendation is not to fast during 'high stake' procedures, such as during or after percutaneous coronary intervention (4). Throughout all of these, shared decisions should be made with the patient. Some specific pieces of guidance are included below.

Traumatic Lacerations

In trauma scenarios, patients may present to the emergency department, or trauma clinics with lacerations, for example a forehead laceration after a fall. After excluding more significant injury, e.g. head trauma in a forehead laceration, such lacerations can be managed in a standard fashion, and patients should be counselled that the local anaesthetic, irrigation, and sutures do not constitute nourishment. It would be impractical to delay closing such laceration to after Ramadan, unless in the final day or two. Typically, traumatic hand lacerations should be operated on within four days, e.g. flexor tendon repair (23). Furthermore, the risk of infection, desiccation of the underlying tissues, and an unsightly scar may rise. Procedures can be postponed to after sunset, though we would not advocate this, as it encroaches on the emergency night on call teams' time, and expertise may be less readily available should there be complications. We would advocate the use of absorbable sutures to reduce hospital/ GP visits during the fasting month. Research shows no difference in cosmetic results in facial lacerations (24). If antibiotics are required, we would advocate the use of those requiring less frequent administration, e.g. clarithromycin as a twice daily dose. For clean small lacerations, e.g. facial, topical agents such as chloramphenicol ointment may replace the need for oral antibiotics as well as

dressings. Discussions around topical medications are also important, as their use may also be rejected by some patients (25). In hand surgery, for simple wounds that have been thoroughly cleaned during a minor procedure, evidence is emerging for avoiding routine use of prophylactic antibiotics (26).

In hand and upper limb surgery, procedures may be undertaken under regional (e.g axillary block, digital ring block) or local field block. A consideration with regional anaesthetic is that patients usually are required to fast, as if this is unsuccessful (typically <5% of patients), then this may need to be converted to a general anaesthetic. Wide Local Anaesthetic with No Tourniquet (WLANT) (27) is a technique that is becoming more popular within many hospitals across the UK. This technique eliminates the need for GA or regional anaesthetic, and often patients are discharged the same day.

Elective Procedures

In elective scenarios, more time may be available to have more detailed discussions with patients, and allow them to consult family or local religious leaders. Skin lesions requiring minor procedures may be benign or malignant. Common benign condition includes cysts, lipomas, and benign naevi. Criteria warranting urgent operations includes incision and drainage of small abscesses (e.g. infected sebaceous cyst), symptomatic lesions (where malignancy is a differential), or those causing nerve compression. Otherwise, the vast majority of simple skin procedures can be delayed until after Ramadan, should patients find LA minor procedures on these unacceptable during the fasting period.

Skin cancers are the most common cancer in UK with 152,000 cases of non-melanoma skin cancer cases per year and over 16,000 melanoma cases (28). The most common subtype is a basal cell carcinoma (BCC); a slow growing; locally invasive skin tumour (28). Although there are a number of modalities of treatment, standard surgical excision under LA as day case procedure, is the most common. BCC usually does not metastasise, and longer waiting times may be more acceptable versus other more aggressive skin malignancies, such as squamous cell carcinoma (SCC), melanoma, or merkel cell carcinoma (29). Thus, patients may opt to wait until after Ramadan. The remaining diagnosis may require reconstruction with either a full thickness skin graft or a local flap. Ensure long acting LA is used for skin graft donor areas, e.g. over the kaltostat dressing. This is to reduce post-operative discomfort/pain and need for oral analgesia (30).

Elective cases include carpal tunnel decompression, trigger finger release, joint replacement, Dupuytren's disease excision, tenolysis, scar contracture release/full thickness skin graft, and ganglion excision (31-34). All of these cases can be considered under local, WALANT, or regional block. Patients may also be given extra dressings to take home with advice on how to use them. This may avoid the need for further checks at the GP or dressing clinics during fasting period.

Other Procedures

Other procedures e.g. angioplasty or pacemaker insertion are routinely undertaken under local anaesthetic. This typically involves the radial or femoral arteries for access. Given the significance of the undertaken, i.e. a functional cardiac procedure, we would not advocate that patients fast during such more 'major' procedures. LA for Ophthalmic operations, e.g. laser eye surgery (vision correction), may be rejected by some patients (35).

Recommendations for non-dental procedures:

- **Patients should be talked through the expected operative and post-operative period, and a shared decision should be made, with respect for the patient's autonomy.**
- **Utilise long acting LA agents to reduce the need for post-operative analgesia. If antibiotics are required, consider those with less frequent administration schedules.**
- **Any suspicious lesions i.e. SCC, Melanoma should still be treated urgently, and the urgency should be stressed to patients who do not find local anaesthetic procedures acceptable during Ramadan.**
- **LA procedures that should not fast include regional anaesthetic e.g. axillary block for upper limb procedures, and minor procedures on infected wounds, especially those requiring oral antibiotics at a particular dosing regimens.**

Dental Procedures

Summary of recommendations for dental procedures:

- Most patients would consider substances entering through the oral route to break their fast.
- Encourage fasting patients to visit their dentists well before Ramadan to anticipate early any dental work needed.
- Some dental treatments such as simple restorations, scaling and polishing, cosmetic treatments, and any non-emergency treatments, can be deferred until after Ramadan with a shared agreement between the patient and dentist.
- Deferring any dental treatment until after the breaking of the fast after the sunset is recommended where possible, as it will increase patient's comfort and reduce the worry of swallowing any substances.
- Alongside the new recommendations for infection control and reducing the transmission of COVID-19, it is always recommended to use a dental rubber dam during any dental procedure wherever possible. This will also reduce the chances of the patient accidentally swallowing any substances.
- If a patient requires antibiotics, consider a less frequent regime.
- Chlorhexidine mouth wash that is commonly prescribed may not be adhered to as fear it of swallowing it; discuss with patient their concerns and if reluctant, advise use outside of fasting. This would also be the case for toothpaste.

Substances entering the mouth is likely to make fasting patients believe this will void their fast, as it is the route by which food and fluid enters the body. Due to this fear, patients may only present in emergency scenarios due to inability to tolerate the pain. Patients may fear that inadvertent swallowing of spray from procedures such as scaling, intraoral administration of anaesthetics, or accidental swallowing of the saliva during a routine examination or restoration placement will break their fast. Hence, they may refrain from seeking dental treatment (18). Teeth with small cavities can be temporised with temporary dressings, as long as it proves asymptomatic, and the definitive treatment like placement of the final restorations can be delayed safely till after Ramadan. The patient must be made fully aware if a definitive treatment is needed as soon as practical.

Oral hygiene maintenance

Chlorhexidine is a commonly prescribed antiseptic mouthwash usually used for very specific indications and for a short period of time. It may be used as a mouthwash, spray, or gel for a variety of conditions. Patients may be reluctant to use any mouthwash for fear of absorption from the mucosa and of inadvertently swallowing some. Patients should be advised that again this does not provide a form of nourishment, and has the intention of aiding in treatment or preventing a disease. It may be advisable to discuss these issues with the patient concerned and to suggest that, if the patient is reluctant to use the mouthwash during the fasting period, he or she should use it outside fasting hours, especially taking into account that Chlorhexidine mouthwash dose is usually 10mls twice daily, and can be used before starting the fast (fajr) and after breaking the fast (iftar) and (36). Fasting patients will rinse their mouths out with water throughout the day as part of their cleaning regime for prayers.

It is good practice to brush the teeth twice daily with high Fluoridated toothpaste, once before starting the fast (before the sunrise), and the second time whenever possible. To reduce worries about swallowing tooth paste, the second time can be performed after breaking the fast (iftar) meal. If brushing is carried out during fasting, then you can advise patients to rinse with water to remove any toothpaste that may cast doubt on their fast. Patients who brush outside of fasting hours should be advised to spit the toothpaste and not rinse with water after brushing as per usual.

Benzyl isothiocyanate is the active antimicrobial agent in Salvadora persica (siwak) widely used in Islamic countries for oral hygiene. Usage of Siwak was advised and recommended by the Prophet Mohammed during fasting. The original Siwak chewing stick has antimicrobial effects similar to toothbrushing with general toothpaste and Salvadora persica toothpaste by reducing the numbers of Strepococcimutans and Lactobacilli Colonies, which is considered the main bacteria responsible for tooth decay (37).

Treatment considerations

Treatment procedures such as scaling, restorations, and extractions with LA do not invalidate the Ramadan fast, with a minimal risk of swallowing substances (38). Other

treatment procedures, such as application of varnishes for caries control, are better avoided in apprehensive patients, where alternative treatment options should be selected. Pulp capping which involves placing a medicament directly over the pulp, can still be carried out as it does not interfere with fasting.

Local Anaesthetic Injections

This is an acceptable form of treatment for a fasting patient (18, 36); however, the dentist should be aware that some Muslim patients may be reluctant to undergo it. According to Islamic fatwa, administration of LA for dental treatment does not invalidate the fast (39). If a long-acting LA is used, the need for analgesics may be reduced, as discussed above. Moreover, evening (after iftar) appointments will permit patients to avoid the need for analgesic intake until they can break their fast, however this is specific to individual practice opening times.

Intravenous Injections

Intravenous (IV) injections are generally permissible whilst fasting (3, 18, 36). IV Midazolam, for example, is commonly used for sedation in anxious patients, mainly in secondary and tertiary care settings. However, the use of IV fluids for nutrition is prohibited while fasting as it provides a significant source of nourishment to the fasting patient (36).

Minor Oral Surgeries

Where possible, fasting patients undergoing a dental extraction during the month of Ramadan should discuss with their dentist other treatment options like temporary dressings. Dental extractions, however, can be carried out for immediate pain relief without violating a patient's fast if preventive measures such as high-vacuum suction tips are used. Fasting patients should be aware that analgesics are likely to be needed once the LA effect has worn off.

A supine position is indicated as it prevents syncope. Swallowing of blood as well as the possible need for antibiotics or strong analgesics following the removal of a tooth in case of surgical extraction, will invalidate the fast. Hence, pulpal extirpation can be carried out as an alternative to tooth extraction. If pulpal extirpation is performed, high-volume suction, rubber dam, and an upright position should be used to prevent swallowing (40). Extractions can be followed by placement of sutures. Sutures will minimise the risk of blood/saliva swallowing and hence lower the risks of invalidating the fast.

Some facial dentally-related swellings must be managed urgently as these can be life-threatening, e.g. dental abscesses affecting the airway. Localised dental abscesses can be enclosed by the gums around the root of the infected tooth. The management of such cases is to provide an immediate drainage pass to the pus by an intraorally performed incision under LA. Delivering this treatment can provide an immediate relief of the patient's symptoms, however, during the drainage, the patient should be assured that the pus will be collected and removed by high-volume suction and kidney trays to prevent any swallowing. However, some swellings can diffuse into the facial spaces and can be large, necessitating the need sometimes for a GA incision and drainage and IV antibiotics. Thus, breaking the fast in these cases is recommended as it's considered life-threatening. (18-21).

Topical Fluoride Applications

Fluoride application is often used for prevention of dental caries and also as a treatment for tooth sensitivity. In either case, the fasting patient may be reluctant to accept this treatment, the concern being that he or she could inadvertently swallow the varnish or paste. Dentists should thus recommend that adjunctive treatment is carried out outside the hours of fasting. (36).

It is worth noting that some fluoride varnishes contain alcohol. It has been agreed, however, on the authority of the West Midlands Shari'ah Council, that these are suitable for use by Muslims, as long as it is used as a medication, and not as an inebriant. Furthermore, they should be used in minimal amounts, less than that which would inebriate, and they are not being used for reasons of conceit (41).

Alternatively, Super Fluoride toothpaste can be prescribed to patients at high risk of dental caries. Where the patient is aged 10 and above, a sodium fluoride 2800 PPM is recommended. In addition, a higher dose (sodium fluoride 5000 PPM) is indicated if the patient suffers from root caries, dry mouth, or a highly cariogenic diet or medication. This later higher dose can only be prescribed to patients aged 16 and above (41).

Both toothpastes can be very useful to compensate the use of Fluoride varnish if the patient does not want to opt for these during Ramadan. It is expected that the patient should brush twice per day, once in the morning, and the

last thing before going to bed, and for the fasting patient, once immediately before starting the fast (after suhoor), and the second after the main meal when breaking their fast (41).

Topical Gels and Lozenges

Intra-oral gels and lozenges are mainly prescribed for ulcers, oral thrush, and denture stomatitis. If this is applied during the fasting hours, it will invalidate the fast, due to swallowing the medication. Therefore, compliance with these medications is likely to be poor in patients adamant about fasting. Thus, it is recommended to schedule these medications after fasting hours (36).

Oral Medications

Patients may fear that medications taken orally will break their fast. However, if the person becomes ill during the fasting period, it is permissible to break the fast. It is the patient who has to judge the degree of illness. If the illness is life threatening, the patient is advised to take the required medication.

One study observed that 42% of Muslim patients followed their regular drug regimen during Ramadan, however, 58% changed their intake pattern (42). Patients may resort to taking a large, single dose during the feasting hours or may even miss a dose. This behaviour increases the risk of drug toxicity, and this effect is more pronounced in the elderly. Dental treatment or emergency management of a condition may require the dentist to prescribe oral medications. However, since the fasting patient cannot take medications during periods of fasting, the drug regimen can be altered.

Use of a single daily dose can be advantageous in patients who have an evening dosing schedule. In cases where single dosing is not possible, the number of doses can be reduced by using slow-release or chronotherapeutic formulations, or drugs with a longer elimination half-life. An example of such a substitution is the use of amoxicillin instead of penicillin. Amoxicillin requires 3 daily doses in contrast to penicillin, which requires administration 4 times per day. (40, 42).

Transdermal Post-Operative Analgesia

Transdermal drug delivery, for example, a transdermal patch of diclofenac or tramadol, serves as a replacement for the traditional dosing system, avoiding the need for an oral route of drug administration. The drug contained within a delivery patch diffuses through the intact skin, reaching the vasculature underneath for systemic delivery of the drug. This method offers several advantages. It is not taken orally and hence should not interfere with fasting, however again respect for patient autonomy should be exercised (25). Moreover, other potential side effects of drugs, such as gastric irritation, are eliminated. Transdermal delivery also provides a steady state of drug delivery. This method of drug dosing can be applied to overcome post-extraction or post-flap oral pain. (43, 44).

The efficacy of transdermal patches following extractions has been well documented. In one study, transdermal patches containing 100 mg of diclofenac used once daily were compared to 50 mg of oral diclofenac administered 3 times per day. The usage of a transdermal patch brought about significantly greater pain reduction than did oral diclofenac (45).

Summary of Dental Procedures

Some Muslims patients may wrongly perceive that all dental treatments and preventive procedures invalidate the fast, even though most dental treatments will not break the fast. This includes scaling, restorations, and extractions. However, some patients may not be willing to carry out certain procedures due to different perceptions and opinions. Within the month of Ramadan, most forms of prescribing are allowable, with the notable exception of oral medication. Even with acceptable types of medication, the patient will often find open or hidden reluctance to comply with the regimen prescribed. The healthcare professional must be aware of this and should alter their prescribing practice or advice accordingly.
It is also important, when treating a fasting patient on long-term medication, to ensure satisfactory compliance with the normal drug therapy. With fasting patients in dental practice, it is important for professionals to be aware of which treatments the individual considers acceptable and offer treatment accordingly. An understanding of the effects of prolonged fasting and knowledge of dosing recommendations will help dentists in treatment planning of medically compromised patients during Ramadan. In addition, various alternative dental treatment approaches that are regarded as permissible during fasting have also been described.

We have summarised these recommendations in a flow chart for guidance for dental care professionals to help them identify patients' needs and their management based on a risk assessment approach (Figure 1).

Summary of Recommendations

Besides the highlights of the recommendations in figure No1, we would summarise our recommendations as follows:

- Respect must be maintained for a patient's individual views and decisions. Patients should be offered the opportunity to speak to relatives, local imams, and do their own research. A shared decision should be made.

- Patients with a form of illness are expected to be exempt from fasting. If patients are adamant about maintaining their fast, extra-oral local anaesthetic (LA) does not usually interfere with fasting as it is not nourishing and intended as part of treatment.

- Where possible, procedures should be deferred to after Ramadan if patients feel strongly about keeping their fast. Risks of delaying procedure should be discussed with the patient.

- A blood glucose reading should be checked in fasting patients undergoing LA procedures. Patients taking warfarin should have their INR checked prior to any minor surgical procedures.

- Hospital procedures should not be undertaken out of daylight hours based on patient preference, due to the reduced availability of staff in hospitals to assist with complications in daytime versus night-time.

- Mixed short and long-acting LA agents should be used to provide rapid onset and an extended duration of action, minimising the potential need for oral analgesics later on.

- Use antibiotics (prophylactic or therapeutic) with less frequent dose regimes, to improve the chances of patient compliance, e.g., twice daily versus three or four times daily.

Conclusions

In summary, patients must be counselled appropriately, and involved in the decision-making process at all stages of the treatment. This should be informed. Various steps, as described above, may be taken to improve the safety and success of treatments in patients who choose to continue fasting whilst undergoing local anaesthetic procedures.

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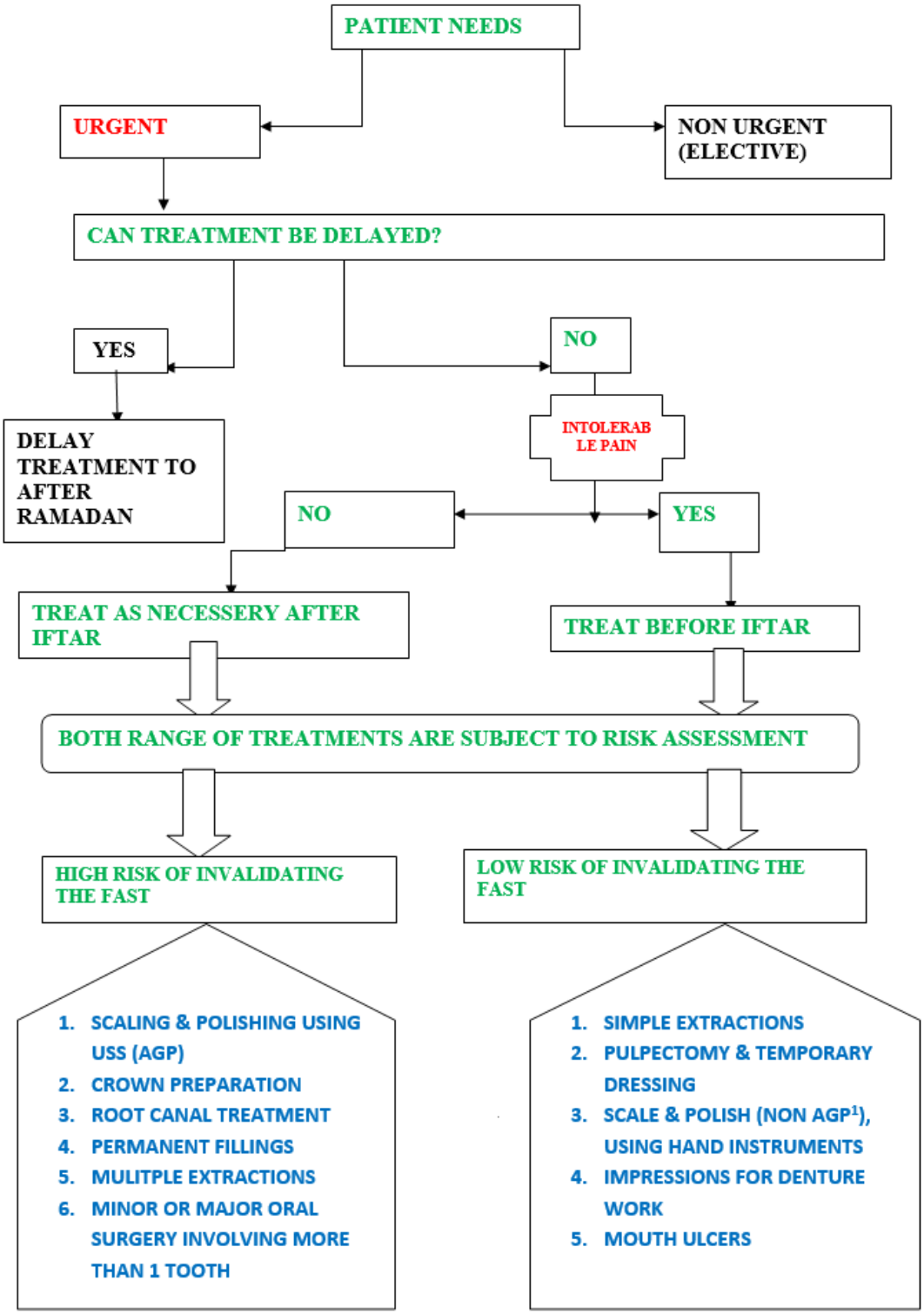

(Figure No. 1, shows management of patient needs during Ramadan using risk assessment based approach)
[1]AGP: Aerosol Generating Procedure
**Please note that this is only a guidance and exhaustive risk assessment is to be carried out by the clinician.*

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Relief

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The challenges of medical relief and health governance in warzones: Syria as a case study

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Keywords: *Syria, conflict, humanitarian, medical diaspora, medical volunteerism, health response*

Introduction

The conflict in Syria has developed into one of the worst of the twenty-first century. In ten years, more than half of the population of Syria has been displaced, hundreds of thousands killed, tortured, and many more injured and living under dire conditions. March 2021 marked the tenth anniversary of the start of the civil uprising. Intense reflection is necessary if the second decade of the Syrian conflict is to be more successful than the first.

The Syrian conflict is becoming one that people are slowly forgetting. The conflict is misunderstood even though it has been ongoing for over a decade.(1,2)Recent documentary films have shed light on the life stories of activists who took on humanitarian civil society roles after the militarisation of the conflict.(3,4)These activities provided the basis for Syrian civil society work and the ensuing medical and humanitarian response.

Healthcare workers played an essential role in the response to the humanitarian situation. Due to the delayed international response and rising needs early in the conflict, local Non-Governmental Organisations (NGOs) were founded by expatriate healthcare workers in Europe and the US to provide health aid inside Syria.(5) There was little civil society in Syria before the conflict and NGOs had to upscale their structure rapidly to meet increasing needs. International healthcare workers also played an important role, providing much needed specialist services and aiding educational efforts. To make best use of what limited resources were made available and, in an effort, to protect medical volunteer efforts from fragmentation, local Syrian healthcare workers formed 'Syrian Health Directorates' to coordinate aid and govern the health needs of the population.

These efforts occurred against a backdrop of a 'weaponisation of healthcare'. With the development of the war in Syria, the regime identified healthcare workers and facilities as a strategic target of war. More than 900 healthcare workers were killed in 600 separate attacks.(20) Attacks against healthcare have been known to occur in contexts outside Syria and have intensified in the last two decades. At one point, however, Syria accounted for 70% of attacks against healthcare worldwide. In addition to the scale of attacks, the regime used attacks against healthcare as a deliberate military tactic against civilian targets to 'induce submission of civilian populations [in opposition held areas] and break their resilience'.(10)

Grass-roots health governance

Since the beginning of the conflict in March 2011, local healthcare workers have been the backbone of the health response. From treating peaceful protesters in governmental hospitals and homes, to establishing secret field hospitals, mobilising scattered health resources, coordinating between emerging new actors, to eventually

building health systems in non-government held areas.(5,6)

From the early months of the uprising, Syrian healthcare workers organised local committees within each community. The purpose of these committees was to coordinate the health response for injuries and trauma and to mobilise resources. At this stage, mobilising available resources to set up effective response meant there were many examples of innovation in conducting complex medical interventions using scarce resources, utilising various cyber security methods for communication, and coordination.(7)

At a later stage, the withdrawal of the Damascus government - Ministry of Health from areas that fell under opposition control, imposed new challenges for the already collapsed health system in opposition-held areas. This included the emergence of new health threats such as Polio in 2013, the daily targeting of medical personnel and health facilities by the Syrian regime, and the diversity of health actors involved in the response such as International NGOs and UN agencies.(8–10). However, despite these enormous challenges, local healthcare workers, supported by the medical diaspora, were able to further develop the medical coordination committees and transfer them into a functioning health system named "the Syrian Health Directorates".

This health system was built using a bottom up approach connecting local medical bodies with a central core team in each governorate. While it had no direct affiliation with political actors, it derived its legitimacy from its general assembly which included each and every medical doctor in the field at the time. This health system covered wide geographical areas under opposition control. With recent changes of areas of control, this health system is now limited to opposition held areas in northwest Syria.(11–13)

This bottom up health system proved effectiveness in tackling key health threats under enormously challenging environments. The Polio response in northwest Syria between 2013 and 2016 was an example for the marked effectiveness. The number of confirmed cases of Polio in 2013 was 36. This was reduced to only one case in 2014 and zero cases in 2015 thanks to the door to door vaccination campaigns that were delivered by local medical teams within this central functioning health system.(14,15)

Medical diaspora

The Syrian medical diaspora has played a key role in supporting these local grassroots initiatives since 2011. Some of the leading medical NGOs in the health response in Syria were established by the medical diaspora such as Syria Relief (UK), the Union for Medical and Relief Organizations (UOSSM), the Syrian American Medical Society (SAMS) and the Syrian British0 Medical Society (SBMS).

The role of the diaspora was profound in the areas of medical training, funding gaps, knowledge transfer and management, advocacy and institutional development. (16,17). Diaspora individuals and networks were involved in developing clinical protocols and guidelines and were also involved in training local doctors on best practice. While international NGOs are usually limited to donor strategies and funding constraints and therefore withdrew from certain areas following funding shortages, these diaspora organisations had a high level of commitment to explore all available options to sustain services in areas they served.(5) As for advocacy, diaspora health organisations developed strategies for key issues facing the health response. For example, SAMS established a dedicated system to report attacks against healthcare and to monitor the application of the UN Security Council Resolution 2286 on preventing attacks on health.(18)

These diaspora organizations went even further to act as intermediaries between local actors and international humanitarian, academic and policy actors. There are multiple examples of multidisciplinary partnerships initiated by Syrian diaspora organizations with academic institutions to analyse and utilise available health data to inform local practice and advance health planning and policies.(19)

International Medical Volunteerism

In 2013, British orthopaedic surgeon Abbas Khan from Streatham, south London, was murdered by the Damascus government for crossing the border to Aleppo to provide clinical services. Since then international medical volunteers have continued to courageously risk their lives to donate valuable time and expertise. Healthcare workers have come from the UK, US, Europe, Pakistan, and other countries, to provide virtually non-existent specialist and sub-specialist services in conflict-stricken areas in Syria and neighbouring countries. In addition to the value of their clinical service, these healthcare workers have provided valuable educational

opportunities to local healthcare-workers. Medical education during the protracted conflict has been severely neglected and these volunteers provided formal and informal teaching opportunities to local colleagues while in Syria. These efforts, though fragmented and severely underfunded, have been expanded with the help of diaspora NGOs to provide a wide array of educational interventions. This ranges from the David Nott Foundation's 'war doctor' training to more protracted medical education needs such as conflict-sensitive evidence-based medicine and academic skills.(21,22) After coming home from Syria, these volunteers have continued to be valuable advocates for the cause of the Syrian people. In addition to providing their time to tele-educational interventions, they play an active role in fundraising, raising public awareness, and media coverage of the Syrian conflict.

What's Next for The Health Response in Syria?

After ten years of the devastating conflict in Syria which has had significant impacts on the health of Syrians, we should start thinking about long term strategies for the health system in Syria. The triple burden of injuries and disabilities, communicable diseases, and non-communicable diseases is very challenging to any health system to address. The humanitarian style health system in non-governmental held areas is not prepared to tackle issues such as mental health or specialised care for cancer and other non-communicable diseases. Therefore, more sustainable solutions are needed to support these innovative initiatives. While the focus of the international health response in Syria has been on saving lives, there should more focus onwards on health outcomes that are related to early recovery. These outcomes include responsiveness, comprehensiveness, integration of services, and social and financial protection. This cannot be done without investing in areas of health governance, health information, health education and medical training, local models for health financing and sustainable health infrastructure and supply chains.

Notably among these requirements, the need for comprehensive medical education is dire; patients have ongoing and worsening mental health, non-communicable disease, and other health needs.(23,24) Bdaiwi et al described the severe lack of clinical educators in Syria and identified the need for consistent, evaluated and accredited tele-education.(25) While opportunities to volunteer clinical services have diminished, healthcare workers abroad have an essential role in supporting these medical education efforts. This is through continuing to participate in tele-educational interventions with diaspora NGOs, building on links with academic institutions to provide accredited courses, and continuing advocacy for funding of these essential life-saving interventions.

Looking at the future of Syria's health system we need to learn from key lessons of the humanitarian health response. Long term investments in local capacities, resources and innovations are needed; Syria's medical diaspora should be further capitalised with solutions for systematic recruitment of their expertise and resources; and international medical volunteerism should engage with international and Syrian organisations which have clear strategies on sustainable health interventions.

Conflict of interest:

Neither author has a conflict of interest relevant to this work.

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Research

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Utilising a Knowledge, Attitude, Practice (KAP) survey to support partnership-based approaches in delivering a COVID-19 Vaccine community-engagement webinar

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Keywords: *Attitudes, Community, COVID-19, Islam, Knowledge, Minority, Mosque, Practice, Partnership, Vaccine*

Abstract

Purpose: The objective of this study was to explore the feasibility of a partnership model to develop insights on vaccine uptake using a Knowledge, Attitude, Practice (KAP) survey to inform community engagement activities.

Methods: An informal agreement was made with the leadership committee of a local mosque to review and administer a survey (through electronic distribution, convenience sampled), with findings to be included as part of feedback during a webinar on the COVID-19 vaccine.

Results: There were 90 participants, of which 61 were male, and included a range of ages and ethnicities. Findings demonstrated adequate (trending to good) ***knowledge*** and ***attitude*** with average cumulative scores across the cohort of 67% and 69% respectively, and good ***practice*** behaviours with a score of 74%.

Conclusion: Mosques represent suitable organisations as potential community partners to facilitate insights using tools such as KAP surveys to inform health engagement initiatives related to Covid-19 and the vaccine.

Introduction

Minority ethnic communities are less likely to be vaccinated than Majority White groups (1). A range of barriers have been considered including perception of risk, low confidence in the vaccine, distrust, access barriers, inconvenience, socio-demographic context and lack of endorsement, lack of vaccine offer or lack of communication from trusted providers and community leaders. Community engagement is key to responding to issues of vaccine hesitancy (2). Within the Muslim community, a number of initiatives, in particular webinars and social media flyers, have been used to try and address some of the concerns (3). Muslims in the UK represent diverse ethnic groups, and as such, organisations such as mosques provide a lens into such communities, rendering them suitable hubs to explore health and social issues (4). However, there remains limited opportunities for communities to share their opinions in a non-stigmatised way so that initiatives can be tailored more appropriately. In recognising that mosques in the UK are often considered an area of community activity, of which a number were hosting COVID-19 related webinars, it follows that such sites could serve as a means of enhancing community engagement by seeking the opinions of the mosque congregation to help inform the webinar planning and discussion, as well as plan for any future initiatives. It also follows that such engagement could support the development of improved community insights on the diversity and challenges of specific issues within the framework of the vaccine hesitancy model (inclusive of the '3C's of Confidence, Complacency and Convenience), and so better guide and support and interventions (5). One way of exploring community health behaviours is by utilising Knowledge, Attitude

Practice (KAP) surveys (6). In addition, an emphasis on rapidity is required given the dynamic circumstances presented by the pandemic, which for all intents and purposes, represents a humanitarian crisis given its large geographical area of involvement, significant economic resource burden, and impact on ensuring fundamental human rights (7) The aim of this research was to determine if using a KAP survey approach in a rapidly deployed manner would facilitate engagement with a Muslim community sample, and provide useful insights to support planning and delivery of vaccine related initiatives.

Methods

Study Setting

Leeds Grand Mosque (LGM) leadership had approached the author for support in hosting a community engagement webinar, and as such was selected as the primary site of the project.

Sample size

The usual 'Juma'ah' Friday prayer congregation size was between 1000-1200 worshipers prior to the pandemic, with regular daily prayer congregations between 30-60, additionally having active Facebook pages and YouTube channels. Given that the survey would be distributed electronically, and recognising the engagement with social media posts can be variable, as well as that this was a study exploring the partnership-based approach rather than demonstrating true cohort representation, a formal sample size was not calculated.

Questionnaire

An online survey (using Googleforms) was used to develop a short Knowledge Attitude Practice survey comprising of 5 sections and a total of 25 questions.A sample of the survey questions can be found in the supplementary data section.

- Section A consisted of 6 questions focused on knowledge-based aspects
- Section B had 4 questions exploring attitudes
- Section C contained 5 questions examining behaviours
- Section D had 3 questions soliciting ideas and preferences on future activities and participation barriers
- Section E had 7 questions focusing on demographics, sources of information and an opportunity to offer further comments

Knowledge, attitude and practice questions were structured using a 5-point Likert-type scale of Strongly Disagree to Strongly Agree, as well as a separate 'Don't know' option. Questions included both positive and negative framing, where in positive questions, Strongly Disagree correlated with a score of 1, and Strongly Agree with 5, with the inverse being the case with negatively framed questions. Don't know (or absent) responses scored 0. No personal identifiers were collected, participation was voluntary, and informed consent was obtained prior to survey completion. There were no compulsory questions, and participants had the option not to declare characteristics of sex, age and ethnicity.

Validation

The mosque committee were consulted to review suitability and appropriateness of questions prior to electronic distribution.

Survey distribution

A social-media flyer suitable for WhatsApp, Facebook and email distribution was developed for the mosque, along with a unique GoogleForms link and QR code. The mosque committee were asked to facilitate electronic distribution of the survey through the relevant mosque social media channels. Informal agreements were made with the mosque committee to support electronic distribution of the survey with relevant reminders to support completion, as well as to commit to a feedback meeting to discuss the results and findings, with the additional understanding that results may be shared through local public health forums. The survey was open for collecting responses for 2 weeks during the second half of January 2021.

Analysis

For preliminary analysis, results were exported onto Googlesheets, where, following removal of duplicate entries, a numerical value was allocated to each of the responses, with average cumulative scores then calculated for each question, as well as for each domain of knowledge, attitude and practice. Domain averages were additionally explored by demographic characteristics to provide a descriptive analysis of the survey sample. For each domain, average scores of less than or equal to 50% were categorized as poor in terms of overall health behaviour, with 51-69% being adequate, and greater than 70% representing good. Free texts statements and comments were reviewed for general

themes and ideas to feedback to the mosque leadership, although formal thematic analysis was not performed.

Ethics

Study information was provided, as well as electronic informed consent was obtained, prior to survey completion. No personal identifiers were collected, and participation was voluntary, with the option to withdraw responses by contacting the study author or mosque committee by email. There were no compulsory questions, and participants had the option not to declare characteristics of sex, age and ethnicity. Given the rapid, community -focused assessment approach of this study as well as consent process and non-identifiable data variables collected, formal IRB ethics approval was neither sought nor deemed necessary.

Results

A total of 90 participants responded to the survey. The majority of participants were male, aged between 31 and 50 years, and of Asian origin as summarised in Table 1 below. While data for further age and ethnicity subgroups were collected (as outlined in the sample survey), these were compiled into larger subgroups for ease of analysis.

Demographic characteristics	LGM (%)
Total Respondents (n)	90
Sex	
• Male	61 (67.8)
• Female	29 (32.2)
• Not declared	-
Age	
• 16-30 years	22 (24.4)
• 31-50 years	50 (55.6)
• 51-70 years	18 (20)
• Not declared	-
Ethnicity	
• Asian	45 (50)
• Arab	23 (25.6)
• White	11 (12.2)
• Black	4 (4.4)
• Other	5 (5.6)
• Not declared	2 (2.2)

Table 1: Basic demographic characteristics of participants

The cumulative average score demonstrated adequate knowledge with a score of 67% as shown in table 2 below. While participants had good knowledge in terms of the safety, Islamic permissibility and importance of the vaccine, doubts remained in reference to effectiveness, side effects and the mRNA vaccine technology. Note that questions marked with an asterisk represent negatively framed questions, and so had inverse scoring in order to arrive at an indicative percentage score.

When considering attitudes towards the vaccine, scores were in generally positive, scoring just below good at 69% as a domain. The common view of waiting to see what happens with the vaccine rollout in some ways reassures that poor vaccine uptake may not represent outright refusal, but rather an opportunity for when there is greater confidence in the vaccine. These findings are outlined in Table 3.

The participants demonstrated good practice behaviours with a domain score of 74% as shown in Table 4. The importance of both trust in Islamic leadership, as well as in health professionals was reinforced with good scores, with the only adequate score (62%) in this domain being that of accessibility to a health professional to discuss vaccine related concerns.

Knowledge questions	Score (%)
Cumulative Average Domain Score	***67***
1. The current approved COVID-19 vaccines are safe for use in the general population.	72
2. From an Islamic perspective, vaccines are considered permissible and halal by the majority of Islamic scholars.	82
3. The severity of COVID-19 illness if you get sick is the same regardless if you have had the vaccine or not. *	65
4. Vaccines are necessary, and one of the only ways to help return back to a more normal way of life.	74
5. The vaccines are clearly linked to many serious, life-changing side effects*	59
6. Using mRNA technology is a safe and effective method of developing new vaccines.	52

*Table 2: Summary scores for Knowledge Domain and individual questions *negatively framed question, where inverse weighting was given to responses to calculate scores*

Attitude questions	Score (%)
Cumulative Average Domain Score	***69***
7. It is better to delay myself or my family getting the vaccine to wait and see what happens with the general public as the vaccine is rolled out.*	64
8. The benefits of vaccines outweigh any risks or side effects.	71
9. It is better to gain immunity through getting sick with COVID19 instead of using the vaccine.*	73
10. I trust the information and guidance being provided by the Government, NHS and health professionals	68

Table 3: Summary scores for Attitude Domain and individual questions
**negatively framed question, where inverse weighting was given to responses to calculate scores*

Practice questions	Score (%)
Cumulative Average Domain Score	***74***
11. If myself or someone in my family is offered to take the vaccine, I will refuse.*	73
12. I am able to easily discuss my concerns about the vaccine with my GP or another health professional (such as a pharmacist).	62
13. I usually take other vaccines when appropriate, and encourage my family members do to the same (such as with Flu vaccine, or childhood school vaccinations)	78
14. I trust and follow the advice and rulings that Islamic Scholars and Imams have issued in relation to the vaccine.	79
15. I will follow the advice and recommendations from my GP/Hospital Doctor if I or my family members are invited to receive the vaccine.	80

Table 4: Summary scores for Practice Domain and individualquestions

** negatively framed question, where inverse weighting was given to responses to calculate scores*

The survey offered the opportunity for participants to provide suggestions on how to improve engagement or additional comments on their experiences of the vaccine roll-out. Box 1 below summarises a sample of these which represent common themes around improving confidence in the vaccine as well as addressing issues of complacency through faith-based and contextualised approaches, and refer to questions 16,17, 18 and 25 in sections D and E.

Statements on Engagement Preferences and Comments
• There are lots of concerns amongst LGM members; some have bought into conspiracy theories. There is generally a lack of trust within our community. • There is trust between the public and health workers but not with the government. Too many poor decisions have been made and people cannot trust them to say that the vaccine is ok to take. • We need to stick together and get all Leeds mosques together as one inshallah I hope this can be achieved and help each other in Leeds • I don't believe Covid 19 is a big deal like the government wants to show us, it's an overreaction to scare people. • The vaccine has not been tested long enough to give true conclusion when taken. • The biggest problem we all face in this pandemic is the lockdown, due to strict NHS guidelines, we hardly see each other as in normal life. We should organise events and talk in the Mosque according to government guidelines, such as sitting in chairs with a 2 metre gap, that will definitely convince our communities in one page. • Please continue the good work you are doing as a mosque may Allah reward you

Box 1: Sample of statements provided on engagement preferences and comments.

Discussion

The results show that in general, positive practice behaviours are observed, despite knowledge gaps and guarded attitudes towards vaccination. This is an important and reassuring observation and contrasts with the current more worrying perspectives on vaccine uptake in minority communities (8). Within the 3Cs model, survey findings and comments illustrated the need to regain trust in the health system, as well as to address access barriers to reliable information. A key aspect was the value placed in community leaders and health professionals in supporting positive health behaviours, which reinforces the view that narrowing the gap between communities and health workers in terms of accessibility would serve to address some of the barriers

related to vaccine uptake. The findings offer insights into the development of content for webinars and other engagement tools and strategies, as well as the value in empowering mosques and by proxy, community-based organisations, to support targeted health promotion activities which are aligned to culturally competent concepts and Islamic principles. Next steps would be to trial the survey in other settings (within either Muslim or other Faith or ethnic groups) and involve a larger group of researchers to validate the questions and review results.

Limitations

Key limitations of this study include the fact it was conducted in English, and this may not have been the preferred language of participants. In addition, the wording and style of the survey had not been piloted with a representative sample beyond the mosque leadership prior to distribution. The option of electronic distribution would exclude those congregation members who are not supported with digital access. In addition, a significant proportion of mosque attendees are male, and hence it is important to acknowledge the inequitable community representation of females when conducting such studies through mosques.

Conclusion

The results of this study demonstrate the feasibility in engaging with community-based organisations such as mosques in exploring community health behaviours. The findings demonstrate the importance of localised approaches in addressing the 3Cs model on vaccine hesitancy, as well as confirming that involving local leaders and health care professionals through webinars are consistent with engagement preferences. The COVID Survey represents a rapid, pragmatic and scalable model in developing community partnerships as well aslocal insights to inform future engagement events to support policy planning and implementation decisions to ensure a more equitable approach to vaccine uptake.

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Supplementary Information

Summary of Survey questions

The following questions refer to the Pfizer-BionTech, Oxford AstraZeneca and Moderna vaccines. Please choose the option from the scale which most accurately represents your view to following statements.

Section A: Knowledge

1. The current approved COVID-19 vaccines are safe for use in the general population.
2. From an Islamic perspective, vaccines are considered permissible and halal by the majority of Islamic scholars.
3. The severity of COVID-19 illness if you get sick is the same regardless if you have had the vaccine or not.
4. Vaccines are necessary, and one of the only ways to help return back to a more normal way of life.
5. The vaccines are clearly linked to many serious and life-changing side effects.
6. Using mRNA technology is a safe and effective method of developing new vaccines.

Section B: Attitude

7. It is better to delay myself or my family getting the vaccine to wait and see what happens with the general public as the vaccine is rolled out.
8. The benefits of vaccines outweigh any risks or side effects.
9. It is better to gain immunity through getting sick with COVID19 instead of using the vaccine.
10. I trust the information and guidance being provided by the Government, NHS and health professionals.

Section C: Practice

11. If myself or someone in my family is asked to take the vaccine, I will refuse.
12. I will follow the advice and recommendations from my GP if I or my family members are invited to receive a vaccine.
13. I usually take other vaccines when appropriate, and encourage my family members to do the same (such as with Flu vaccine, or childhood school immunizations)
14. I am able to easily discuss my concerns about the vaccine with my GP or another health professional (such as a pharmacist).
15. I trust and follow the advice and rulings that Islamic Scholars and Imams have issued in relation to the vaccine.

Section D: Planning ahead

16. Please tell us what kind of activities you would like to see arranged to help provide information or address any concerns about COVID19 and related issues.
17. How can we improve participation of the community in such activities?
18. What do you feel stops you being involved in such activities?

Section E: General Questions

19. Age
20. Gender
21. Ethnicity
22. Sources of information:
    Please select the 3 most important sources of information that help you to make decisions regarding COVID19 and the vaccine.
    GP
    Hospital doctor
    Other health professional
    NHS website
    News Reports on TV
    TV shows
    Family members Friends Children's School Radio
    Social media (WhatsApp, Youtube, Facebook, Twitter etc) Printed media (flyers, newspapers) Other
23. Of your 3 selected options, please give more details such as the name of the TV show, or name of the social media app or which family member.
24. Which Mosque/Islamic Centre do you normally attend?
25. Any other comments:

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Book Review

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The Miracles of the Qur'an and Sunnah in preventative medicine and micro-organisms

(by Dr Abdul Jawad Al-Sawi, Published in 2012)

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The prophet Muhammad PBUH said *{There are two blessings in which many people incur loss. (They are) health and free time (For doing good)}*. This book, written in Arabic by Dr Abdul Jawad Al-Sawi investigates the miraculous knowledge presented within the Qur'an and Sunnah (the Prophet Muhammad's teachings and actions), advising mankind on how best to maintain their health and prevent diseases. This book, comprising five chapters, discusses preventative medicine, which is defined in the book as the science of preventing microbial, organic, and psychological disease in the individual and society.

This book begins by identifying the three major causes of disease: micro-organisms, organic compounds, and psychiatric disorders. The nature of disease aetiology is explored, and the importance of animals and the environment in the spread of infectious disease is emphasised. There is a focus on the spread of airborne viruses, such as influenza, which, in modern times, is especially relevant as this information can be applied directly to the transmission of COVID-19.

Dr Al-Sawi emphasises the importance of the prevention of infectious diseases by implementing the following measures: cleansing the stores of micro-organisms, blocking the transmission within the epidemiological triad and strengthening the human immune system.

This introduction to infectious disease epidemiology is succeeded by a thought-provoking explanation of the role of purity, which is emphasised and considered a priority in Islam, in the protection against illness. We are reminded that, as the Prophet Muhammad (PBUH) said, {cleanliness is half of faith}, and that this involves purity of the body, clothing, and environment in which one resides in. Water, the primary means of purification, is used multiple times daily in ablution prior to prayer, and is vital in the removal of pathogens such as Streptococcus, Staphylococcus and Neisseria, which reside on our skin and within our nasal cavities at a density of around 1-5 million per square centimetre. The reader is also informed of the benefits of miswak, a tooth stick made from the roots of the Salvadorapersica tree, alongside the rest of the ten acts of *Fitrah* that were valued by the Prophet (PBUH): *{Imam Muslim narrated that the Messenger of God, PBUH said: "Ten are the acts according to Fitrah (nature): clipping the moustache, letting the beard grow, using the Miswak(tooth stick), cleansing the nose with water(Al-Istinshaq), cutting the nails, washing the knuckles, plucking the hair under armpits, shaving the pubes and cleansing ones private parts (after easing or urinating) with water. The narrator said: I have forgotten the tenth, but it may have been rinsing the mouth".}*

The author then outlines the impact of the environment on community health. Epidemics can be spread in the community through vectors such as food, water, and air. Contaminated food and drink are implicated in the transmission of communicable diseases such as typhoid and dysentery in developing countries in particular. Behaviours currently considered universal, such as covering one's mouth whilst sneezing or yawning, and quarantining infected individuals, were introduced and recommended by the Prophet (PBUH) over 1400 years ago, demonstrating the extent of the contributions to the field of science by the Muslim world.

{Abdullah bin Abbas, may God be pleased with him, said: "The Messenger of God, PBUH forbade breathing or blowing into a vessel "Narrated by Abu Dawud}.
Also, the messenger of God PBUH said {if you hear of the plague on land, do not enter it, and if it occurs while you are on land, do not leave it to flee from it}.

A different outlook is later provided in the book, and instead of exploring the recommended behaviours, it delves into the various forbidden acts mentioned in the Quran and Sunnah, and their effects on causing or

worsening the disease. Readers are first warned of the risks of eating animal products containing blood, due to the possibility of microbial and zoonotic transmission to humans via this route.

Allah the Almighty says *{(Prohibited to you are dead animals, blood)}* Al-Ma'idah 3.
The reasoning behind the prohibition of pork in Islam is also explored, including, but not limited to, the array of infections such as E-coli, tuberculosis, and influenza, that are able to be transmitted through its consumption.

Alcohol is another forbidden substance known to have a significant, detrimental impact on one's health, and this is also detailed within this section of the book. God Almighty says *{(They ask you about wine and gambling. Say 'in them is great sin and yet for people. But their sin is greater than their benefit)} – chapter* Al-Baqarah 219.
In addition to its effects on an individual's cognition and decision-making, long-term abuse can drastically increase the risk of developing inflammation and cirrhosis of the liver, and cancers of the tongue, pharynx and oesophagus.

The author then addresses the behaviours promoted both by the Quran and the Prophet (PBUH), which had the aim of maximising the health of the human body and soul. The benefits of fasting are many, as it not only provides our organs with a period of detoxification, but additionally strengthens our senses and our psychological wellbeing. Islamic teachings also encourage engaging in regular exercise, the benefits of which are known far and wide.

The Messenger said: *{A strong believer is better and dearer to God than a weak believer}.* Narrated by Ibn Majah.
In the final chapter of the book, the author provides a glimpse into the history of preventative medicine, taking shape at the beginning of the twentieth century with the exploration of micro-organisms and the advancements in the study of disease aetiology. Western civilisation owes much of these developments to the Muslim world. The beliefs on disease which were dominant in the early medieval periods, including the idea that diseases are a result of evil spirits and bad luck, were refuted with the origins of Islam in the 7th century. The Prophet (PBUH) prohibited the use of amulets, black magic, and the belief in bad omens. He said, {Allah has sent down both the disease and the cure, and He has appointed a cure for every disease, so treat yourselves medially, but use nothing unlawful}.

The topics within the book are outlined and discussed in a way that is accessible, both for individuals with a background in science or medicine, and also for the lay reader. Dr Al-Sawi complements his writing throughout with informative photos and illustrations in order to aid the reader in visualising his points. However, I feel that he could have elaborated further on the various treatments mentioned in the Qur'an and Sunnah, as this would have provided a deeper insight into the links between modern medicine and the teachings of Islam, though this may fall within another scope entirely.

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Letters to the Editor

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Now is the time for a unified medical fatwa

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Dear Editor,

I write this letter to call for a standardisation and unification of healthcare advice by prominent British Muslim faith leaders and British Muslim health organisations. These two pillars of the British Muslim community could combine their efforts whereby Islamic advice documents could be published to provide sound medical guidance in collaboration with senior British Muslim faith leaders. Given the disproportionate number of Muslim deaths due to COVID-19, a clear 'medical fatwa' could potentially save hundreds if not thousands of lives.

During this pandemic, the current approach to publishing advice documents related to COVID-19 to address healthcare issues for the British Muslim communities requires revision. Since lockdown began, we have seen circulation of a plethora of Islamic judicial and healthcare-related advice regarding COVID-19 for British Muslims. We are seeing many documents circulated online labelled *fatwas* by muftis and senior scholars and labelled *guidance* documents by healthcare professionals. A variety of *other* titles are also being used by a number of Islamic organisations and freelance Muslim scholars. The differences in focus between the producers of *fatwas* and *guidance* documents appear to be giving birth to this plethora of *other* hybrid documents that resemble the linguistic style of *fatwas*. These hybrid documents appear to function as either 'medically informed fatwas' or 'Islamically informed medical advices'.

Plurality of views is to be expected. However, a more thoughtful discussion needs to take place with regard to matters of great magnitude that relate to life and death on a national scale. Whilst we can respect differences of opinion with regard to methodology, we need to converge on answers and solutions with regard to the sanctity of life. Perhaps the pandemic will drive British Muslims to combine their efforts. Perhaps, in future, as a result of this crisis, we may even produce a single, clear 'medical fatwa' endorsed by a council of senior Muslim faith leaders and healthcare professionals - to achieve a greater, more coherent scholarly response to any given national crisis.

'Medical fatwas' could prove to be invaluable to overcome the ambiguity and seemingly contradictory information. Research has also shown that the Muslim community is highly likely to seek advice more from Muslim physicians. The Muslim community is also likely to seek advice from Muslim faith leaders. Importantly then, a hadith instructs *'al-mustashaar al-mu'taman'* meaning the one whose advice is sought, is in a trusted position. Trust bears responsibility. In medical cases, this could be a matter of life and death. The prophetic solution to such issues is to question our ignorance, put aside sectarianism, and combine our efforts and knowledge to serve in the best interest of all people.

British Muslim scholars and healthcare professionals have combined their efforts over the past few years, as is evident from the efforts made to promote organ donation among Muslims in the UK. We have also witnessed the ultimate sacrifice many Muslim healthcare professionals, young and old, have made for the nation. Such efforts and sacrifices can be owed to the spirituality and inspiration drawn from the sacred Qur'an and the Prophetic Sunnah. These sacred sources inspire generations to be affectionate, sympathetic, and responsible as well as the teachings therein promote strong ethics and clear long-term goals with clear strategies.

Our *'ijtihad jama'I'* meaning collective reasoning agrees that life is sanctified and is more dignified in the eyes of the Creator than the Ka'ba itself. We, therefore, need to prioritise our areas of conflict, develop an action plan, and look for opportunities to progress. We are seeing our masajid utilised as vaccine hubs because prevention is better than cure – educating the public is the greatest cure to prevent the spread of ignorance.

As British Muslims look to faith leaders for advice, do faith leaders really want to be beholden to 1400 years of

sectarianism and polemics when we have discussions on such contemporary national matters? Do we really want to assist the minority of scholars who continue to ignore sound medical advice when they advise their congregation on serious health matters whilst the vast majority of British Muslims seek a clear 'medical fatwa'? Ultimately, who does not benefit from such polemics? British Muslims.

I urge all Muslim healthcare professionals and Muslim faith leaders to take this to the next phase, a post-COVID-19 phase. A new phase-in which we challenge intolerance and sectarianism and welcome a more inclusive discussion with the best interests of the people in mind. Such a journey in these unprecedented times will *insha Allah* not only benefit the British population but also make us, in the words of Prophet Ibrahim *(Alahissalam), 'lisaansidqinfi'lakhireen'* - meaning honourable in the eyes of future generations.

I pray that *Allah Subhanahu wa Ta'ala* keeps us all safe and grants us mental, physical, and spiritual well-being always.

Mufti Usman Maravia
National Director - BIMA Ethics Team

15th Sha'ban 1442 AH
29th March 2021

Journal of the British Islamic Medical Association

Letters to the Editor

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Important Message to Muslims regarding COVID-19 and the 3 Principles Approach to Fake News

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We are currently going through a very challenging and testing time. The situation is challenging because we are losing our loved ones to the COVID-19 virus. The time is testing, because the priorities of Muslims are being challenged, and their ability to cope in a time of perceived confusion and despair is being tested.

Every so often, Allāh the Almighty challenges mankind with His might, so that we realize that our advanced technology and brains, is no match for our Creator and then to appreciate that we are wholly dependent on Him. The Covid-19 pandemic is just another example of that realization.

I wish to focus in particular on one major challenge our Muslim community is facing, which is infodemics. **Infodemics** is a blend of "information" and "epidemic" that typically refers to a rapid and far-reaching spread of both accurate and inaccurate information about something, such as a disease through social media platforms. As facts, rumors, and fears mix and disperse, it becomes difficult to learn essential information about an issue because social media is spammed with information overload causing confusion.

As Muslims, our century's long Islamic tradition provides some very important principles about how we ought to seek the truth, and then our obligations to uphold what is right.

Here is a list of 3 principles I highly recommend Muslims adhere to.

Principle 1 - Seek advice from those who possess knowledge about whether the vaccines are halal or haram.

Ask those ʿulamā' (Muslim scholars) who have a deep understanding of the *sharīʿah*, are God conscious (*taqwa*), and have either a very good grasp of the science of vaccines or have consulted those who have expertise in the science. Usually these are ʿulamā' who are highly respected personalities in their communities, have been teaching these related subjects for some time, and have accountability to their communities.

Allāh, *the Wise*, has divided the Muslim community into two types of people: the *ahl al-dhikr*, and those that depend on the *ahl al-dhikr*.

فَاسْأَلُوا أَهْلَ الذِّكْرِ إِن كُنتُمْ لَا تَعْلَمُون

"Then ask those who possess the knowledge (*ahl al-dhikr*) if you do not know." (Qur'ān 21:7 and 16:43)

If you are of the latter group (those dependent on the *ahl al-dhikr*) then it is incumbent on you to seek advice from these ʿulamā' (i.e., the *ahl al-dhikr*). If you are seeking your knowledge from those who are not of the *ahl al-dhikr*, then this is problematic and potentially dangerous for you and those you advise.

Problem: Unfortunately, there are many charlatans in this latter group, who are posing as experts, claiming to have consulted experts, or just blatantly stating whatever suits them without verifying. They usually take secondary or tertiary sources from the Internet which suits their agenda, and without question they forward this without having any ability to analyze or appraise the data. Unfortunately, few ʿulamā' have fallen prey to this group also.

Principle 2 - Verify information before passing on to others

يَا أَيُّهَا الَّذِينَ آمَنُوا إِن جَاءَكُمْ فَاسِقٌ بِنَبَإٍ فَتَبَيَّنُوا أَن تُصِيبُوا قَوْمًا بِجَهَالَةٍ فَتُصْبِحُوا عَلَىٰ مَا فَعَلْتُمْ نَادِمِين

"O you who believe! If a sinning person (someone who is not considered upright) comes to you with news, verify it, lest you harm people in ignorance, and afterwards you become regretful to what you have done." (Qur'ān 49:6)

All of us have a responsibility to our communities and are obligated by Allah Almighty to only speak the truth. If you accept information, a report or news from a source and intend to forward to others, then it becomes a duty upon you to verify the information by ensuring it is **peer-reviewed** by experts. Just because somebody is claiming something out of passion and emotion, does not suggest that this person's claim is the truth.

Problem: Many of us are providing support and motivation (intentionally or unintentionally) to those charlatans who have little expertise, by simply forwarding their message. It is important that we verify whether it is a blatant lie, a misinterpretation of important information, or just a rant without any actual valid supporting proof.

عَنْ أَبِي هُرَيْرَةَ قَالَ قَالَ رَسُولُ اللَّهِ صَلَّى اللَّهُ عَلَيْهِ وَسَلَّمَ كَفَى بِالْمَرْءِ كَذِبًا أَنْ يُحَدِّثَ بِكُلِّ مَا سَمِعَ

Abu Huraira reported: The Messenger of Allāh, peace and blessings be upon him, said, "It is enough falsehood for someone to speak of everything he hears." Ṣaḥīḥ Muslim

Principal 3 - Ask for a character profile and verify expertise of the one who challenges or makes a serious claim

It is important to get into the head of these strange individuals who are amongst the group of "anti-vaxxers" and are pushing their five-minute videos on social media.

Most of their lives they have been refusing vaccinations and peddling conspiracy theories at every opportunity - blaming the '*kuffār*' (non-Muslims), distorting theological positions and claims of classical Muslim scholars, and accusing respected Muslims or organizations of hypocrisy.

Now is the opportune time for them to really let it out, and prey on people's despair. Since there is a serious need for mass population public health interventions, like lockdowns and vaccinations, it is easier to feed off the fear and anxieties of the public by producing short videos with little accountability to the truth. People are vulnerable and are more likely to accept news which promotes hesitancy, fear, skepticism and anxiety.

يَا أَيُّهَا الَّذِينَ آمَنُوا اتَّقُوا اللَّهَ وَكُونُوا مَعَ الصَّادِقِينَ

O you who believe! Be afraid of Allāh and be with those who are true (in word and deeds). (Qur'ān - 9:119)

Some common attributes of these individuals.

1. Most of them tend not to be so intelligent, are known not to be very bright amongst members of their communities, or people of their expert community, and do not have much social standing amongst communities except their elite groups, and hence lack accountability.

2. They are known for making rash decisions and are known for having outlandish or extreme opinions on issues amongst their peers. At times respected members of the community tend to warn you against them. They can be somewhat emotionally unstable, argumentative or have anger or other emotional issues.

3. They bring Islam into the discourse yet have very little knowledge of the related Islamic sciences or use Islam inappropriately to suit their ends. They are usually not known to possess a good character amongst the ʿulamā' and can sometimes be critical of ʿulamā' if they are not supported by them. Sometimes they make serious claims about Islam without any hesitation.

4. They thrive on others passing and sharing their fake messages and tend to promote their message through emotional appeal without any valuable proof or evidence. A good litmus test to determine their nature is that if you pass on any false information to them, which supports their agenda, they will not scrutinize or verify it, but rather, they will use without question in support of their claim.

5. They appeal to the betterment of society and because of their concern for public interests, yet their track record shows no or very little community service or charitable works.

Avoid these people as they can be harmful with their fake news, even if they believe it and seem sincere in what they claim.

وعن ابن مسعود رضي الله عنه قال: قال رسول الله صلى الله عليه وسلم: "إن الصدق يهدي إلى البر، وإن البر يهدي إلى الجنة، وإن الرجل ليصدق حتى يكتب عند الله صديقًا، وإن الكذب يهدي إلى الفجور، وإن الفجور يهدي إلى النار، وإن الرجل ليكذب حتى يكتب عند الله كذابًا"

Sayyiduna ʿAbd Allāh ibn Masʿūd (may Allāh be pleased with him) said: The Messenger of Allāh (peace and blessings of Allāh be upon him) said: You must be truthful, for truthfulness leads to righteousness and

righteousness leads to Paradise. A man will keep speaking the truth and striving to speak the truth until he will be recorded with Allāh as a *siddīq* (speaker of the truth). Beware of telling lies (and conveying unverified information from unreliable sources), for lying leads to immorality and immorality leads to Hellfire. A man will keep telling lies and striving to tell lies until he is recorded with Allāh as a liar. (Reported by Saḥīḥ Bukhārī and Muslim).

Finally, COVID 19 is a serious viral illness, especially for our elderly and vulnerable. It has cost them their lives and has severely tested those who have been debilitated by its effects.
Please do not treat this situation as a game. Take your information from reliable sources. Ask expert Muslim scholars, Muslim medical organizations who consult with experts and remember...

The level of scrutiny vaccines are facing at the present moment is unprecedented. There are so many safety checks and measures in place to scrutinize its safety. Everything, even the most minor of symptoms is reported or recorded and this information is transparent and readily available to all.

Drug companies and regulatory bodies are being regulated very carefully and are under serious public scrutiny. This in itself is reassuring to some degree. We consume all sorts of flavourings and additives in our food and trust food companies, yet they don't have this level of scrutiny.

We turn to Allāh our Creator and Lord and pray that He removes this pandemic from our lives as soon as possible and cures us of our physical and social ills.