



FIMA

YEAR BOOK 2019

FEDERATION OF ISLAMIC MEDICAL ASSOCIATIONS الاتحاد العالمي للجمعيات الطبية الإسلامية



الجزء السادس

التحديات الدينية والصحية
في ظل جائحة فيروس كوفيد - 19

ENCYCLOPEDIA OF ISLAMIC MEDICAL ETHICS

PART VI

Islamic and Health Challenges
in the Context of COVID-19
Pandemic



"...وَقُلْ رَبِّ زِدْنِي عِلْمًا" سورة طه: 114

“O my lord! Advance me in knowledge”

The Glorious Qur'an: Taha 20: 114

FIMA
Year Book 2019

Federation of Islamic Medical Associations

الاتحاد العالمي للجمعيات الطبية الإسلامية

ENCYCLOPEDIA OF ISLAMIC MEDICAL ETHICS- PART VI

موسوعة الأخلاقيات الطبية الإسلامية- الجزء السادس

Islamic and Health Challenges

In the Context of COVID-19 Pandemic

التحديات الدينية والصحية في ظل جائحة فيروس كوفيد – ١٩

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موسوعة الأخلاقيات الطبية الإسلامية: الجزء السادس

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EDITORIAL

Dear FIMA members
 Assalamu Alaykum
 Bismillah al-Rahman al-Rahim

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

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

This annual publication of FIMA, the *FIMA Yearbook*, first published in 1996, is an initiative to mainstream the Islamic perspectives on various contemporary health and medical issues.

We had hoped to complete our sixth in the series of the “Encyclopaedia of Islamic Medical Ethics” but the events of the pandemic has overtaken us and the editorial board decided to instead address the Islamic and health challenges in the context of the COVID-19 pandemic.

Our scholars and academicians in the FIMA fraternity has been forthcoming in contributing articles to our Yearbook. The editorial board would like to thank them for their contributions and to all our board members who reviewed the manuscripts.

The science of the pandemic is evolving rapidly, virtually on a daily basis, inevitably what has been scripted in this Yearbook maybe become outdated with the passage of time. Notwithstanding, many of the principles of pandemic management would remain evergreen and relevant.

The 19 scripts selected for publication covers a wide spectrum of the challenges posed by the pandemic.

1. Historically, the collections of hadith literature was the fore runner in the early Muslim discourse on plague epidemics. The Arab historian al-Mada’ini (died 840 or 845), a major source of at-Tabari, is credited with the earliest documentation of the history of plague epidemics and the related hadiths. Ibn Abi d-Dunya (died 894) and Ibn Qutaybah (died 889) were the two other authorities on plagues in early Islam in the context of hadith literature. All three were quoted by Ibn Hajar in his *Fiqh* of Epidemics. (Chapter 1)

2. Islam encourages prayers (*Salah*) at home and the suspension of religious congregations during pandemics to ensure physical distancing and avoiding harm to oneself and other persons. This is evident from the Qura’n and *Sunnah* (authentic traditions of the prophet) and the other primary sources of *Shari’ah* law. (Chapter 2).

3. Perhaps this new-norm can be said to be a blessing in disguise. While many Muslims could no longer congregate for *Ramadhan* activities due to the movement restrictions or lockdowns, it has provided a unique opportunity for *Ramadhan* to be celebrated in a more humbling experience with much self-retrospection. (Chapter 3).

4. Ibn Kathir recorded that Hajj was cancelled due to outbreak of diseases as early as 357 AH (957 AD). In the recent past, a plague from India hit Makkah in 1831 and killed three-quarters of pilgrims who had endured weeks of travel through dangerous and barren lands to perform Hajj. Hajj was halted at least three times between 1837-1858 when the holy city was hit by plague. A cholera outbreak in 1846, 1865, 1883 and plague in 1850 also halted the Hajj process. Due to the Ebola outbreak, Saudi Arabia temporarily stopped issuing Umrah and Hajj visas for the citizens of Guinea, Liberia and Sierra Leone between 2014-16. (Chapter 4).

5. In response to the COVID-19 pandemic, three *Fatwas* (decrees) were issued by major Islamic Jurisprudence authorities - the European Council for Fatwa and Research (ECFR), the Assembly of Muslim Jurists of America and the International Islamic Fiqh Academy (Chapter 5).

6. While the judicial rulings outlined are derived from the Islamic tradition, they have universal application. We must never lose sight of the Quranic teaching that every human life is sacred and that every human being is honored. (Chapter 6).

7. In this open letter, FIMA made an appeal to all Muslim leaders and scholars to truly appreciate and embrace the legacy of Islamic history and to heed the *fatāwā* of our earlier and contemporary *fuqahā'* (scholars of jurisprudence) who called for some form of physical distancing, the most extreme form being closure of all the mosques, in a valiant effort to prevent the spread of the killer plague. (Chapter 7).

8. Numerous studies have shown that the disease is generally milder in children and the mortality rate is much less than that in adults. In children, asymptomatic, mild and moderate cases account for 98% of disease. The reason why SARS-CoV-2 infections in children are mild remains unknown but various reasons may be considered for this disparity. (Chapter 8 and 15).

9. New information continues to unfold about COVID-19 in pregnancy as more and larger studies are undertaken. Therefore, practitioners have to keep themselves abreast of the new knowledge and the best practices as alluded to by the fraternity at both global and national levels, within the context of one's individual patient's needs and preferences. (Chapter 9).

10. The surgical services in Doha, Qatar share their experiences in managing surgical emergencies during this pandemic crisis. Their strategy is anticipatory and preemptive utilizing a well-established protocol and pathway. (Chapter 10).

11. A meta-analysis of 22 studies with 1018 cancer patients showed that the frequency of cancer among confirmed COVID-19 cases was 2.1% with a mortality rate of 21.1%, severe/critical disease rate of 45.4%, ICU admission rate of 14.5%, and mechanical ventilation rate of 11.7%. Cancer patients with COVID-19 had a higher risk of death, severe/critical disease, and need for mechanical ventilation (Chapter 11).

12. In the case of COVID-19 mass quarantines are necessary but not without costs. To reduce these financial, social and psychological consequences, the duration of quarantines should be as short as possible, its requirement reviewed and revised

frequently, enhanced education on its purpose given and support including financial and physical offered. (Chapter 12).

13. There is convincing rationale for the implementation of mass testing of both symptomatic and asymptomatic HCWs prioritising those in high-risk areas to mitigate workforce depletion by unnecessary isolation, reduce the spread of COVID19 in hospital settings and to protect the lives and welfare of the healthcare workforce. (Chapter 13).

14. A recent review of 20 studies of varying designs on the effectiveness of convalescent plasma was inconclusive. There were also limited data on the safety of Coronavirus-19 Immunoglobulin (CIG) therapy. (Chapter 14).

15. The COVAX vaccine facility is a global initiative to ensure equitable access to COVID-19 vaccines. As at 30 September 2020, 168 countries (including 76 first world nations) have signed up. This will ensure the capacity to make the vaccines, solicit the funding for them and the delivery systems to make it accessible (Chapter 16 and 17).

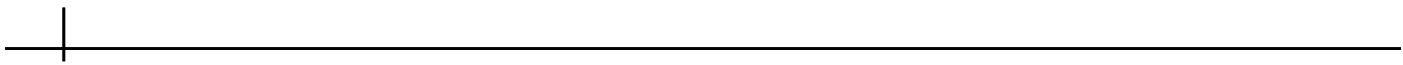
16. Healthcare workers are natural born leaders. We make literal life or death decisions daily, have excellent communication skills and have the analytical abilities of Sherlock Holmes. Yet, we leave the leadership of our nations and the world to lawyers, soldiers, businessmen and politicians. No more. In a post-COVID-19 world, we must take our place as leaders too so we can build a more balanced, healthier and safer world. (Chapter 18).

The editorial board would like to register our heartfelt gratitude to Ms. Elham Mohamad Swaid at the Islamic Hospital, Amman-Jordan for her excellent and continuing secretarial support to our FIMA Yearbook project. May Allāh (ﷻ) bless her bountifully for her passion and dedication to this legacy of our beloved, al-Marhum Dr. Aly Mishal (RA).

I pray that Allāh (ﷻ), the source of all knowledge and wisdom, accept and bless all our efforts in His service and pleasure. We pray for Allāh's (ﷻ) guidance and mercy in all our endeavours. Unto Him (ﷻ) we seek refuge and forgiveness for our failures and shortcomings.

Yours sincerely,

Musa Mohd Nordin
Chief Editor, FIMA Yearbook



Federation of Islamic Medical Associations (FIMA) in Brief

- On 31st December 1981, FIMA was formed in Florida, USA. Senior medical professionals representing ten Islamic Medical Associations (IMA), from various parts of the world, convened and laid down the foundation of the Federation.
- FIMA was incorporated in the state of Indiana as a not-for-profit corporation on 18th January 1982 and re-incorporated in the State of Illinois on 30th March 1999.
- FIMA enjoys Tax Exempt status under Section 501 (C) (3) US Federal Income Tax by the Internal Revenue Service.
- In 2005, FIMA acquired Special Consultative Status to the United Nations Economic and Social Council (UN-ECOSOC).
- FIMA membership now include Islamic Medical Associations (IMA) and associates from 50 countries.
- FIMA aims to foster the unity and welfare of Muslim medical and healthcare professionals, promote healthcare services, education and research through the application of Islamic principles, mainstream Islamic perspectives of medical ethics, mobilize professional and economic resources for medical and humanitarian relief and collaborate with partners for the mercy and healing of mankind.
- First medical jurisprudence conference, Amman 1991.
- First humanitarian relief conference, Paris 1994.
- Launch of FIMA Year Book, Jakarta 1996.
- Consortium of Islamic Medical Colleges (CIMCO), Islamabad 2001.
- Islamic Hospital Consortium (IHC), Islamabad 2001.
- International Muslim Leaders Consultation on HIV/AIDS, Kampala 2001.
- FIMA Web, Kuala Lumpur 2005.
- FIMA Save Vision, Darfur 2005.
- FIMA Save Smile, Jeddah 2008.
- FIMA Save Dignity, Makkah 2009.
- FIMA awarded American College of Physicians Linda Rosenthal Foundation Award, USA 2009.
- Encyclopaedia of Islamic Medical Ethics, Kuala Lumpur 2012.
- FIMA App on Care of Muslim Patients (Elsevier), Kuala Lumpur 2012.
- FIMA Declaration on Millennium Development Goals, Kuala Lumpur 2012.
- FIMA Green Crescent, Cape Town 2013.
- FIMA Declaration on Addiction, Cape Town 2013.
- FIMA Declaration for Polio Eradication, Cairo 2013.
- FIMA Book on Immunisation Controversies, Makassar 2015.
- FIMA Safe Water, Istanbul 2017.

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- International Journal of Human and Health Sciences (IJHHS), Istanbul 2017.
 - FIMA Life Saver, Amman 2018.
 - FIMA Declaration on Climate Health, 2020.

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PERSPECTIVES OF EPIDEMICS IN EARLY ISLAMIC HISTORY

Husna Musa and Musa Mohd Nordin***

Abstract

From the middle of the sixth century, 3 major plague epidemics swept through the world with waves of outbreaks in between. Much has been described of its devastating impact on early Christian European society. Only recently has these cataclysmic events been better studied in Muslim countries. This article is a preliminary attempt to summarise the early history and examine some of the attitudes and responses of the early Muslim community to the epidemics and lessons which may direct our response to the present COVID-19 pandemic

Keywords: Plague, epidemic, attitudes, responses.

Three major plague epidemics have been recognised in recorded history with waves of outbreaks in between. They are the Plague of Justinian (6th century), the Black Death (14th century) and the Bombay plague (19th century)¹. These resulted in excessive mortalities, depopulating empires with major disruptions of social, economic and political life.

Ibn Khaldun (1332-1406), the 14th century Muslim historian, lost his parents and some of his teachers during the Black Death in Tunis, described in *The Muqaddimah*:

“In the middle of the eighth [fourteenth AD] century, civilization in the East and West was visited by a destructive plague which devastated nations and caused populations to vanish. It swallowed up many of the good things of civilization and wiped them out. It overtook the dynasties at the time of their senility, when they had reached the limit of their duration. It lessened their power and curtailed their influence. It weakened their authority. Their situation approached the point of annihilation and dissolution. Civilization decreased with the decrease of mankind. Cities and buildings were laid waste, roads and way signs were obliterated, settlements and mansions became empty, dynasties and tribes grew weak. The entire inhabited world changed”².

The Plague of Justinian, during the rule of the Emperor Justinian (527-565) began in 541 at an Egyptian port at the Nile. The Egyptian physician Ibn al-Nafis (1213-1288) commented that the bubonic plague was endemic in Ethiopia, acting as the epicentre of spread to the rest of Africa and the Mediterranean via the trade routes.

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The collections of hadith literature was the fore runner in the early Muslim discourse on plague epidemics. The Arab historian al-Mada'ini (died 840 or 845), a major source of at-Tabari, is credited with the earliest documentation of the history of plague epidemics and the related hadiths. Ibn Abi d-Dunya (died 894) and Ibn Qutaybah (died 889) were the two other authorities on plagues in early Islam in the context of hadith literature. All three were quoted by Ibn Hajar in his treatises.

Al-Mada'ini enumerated five great plagues in the early Muslim era. The plague of Shirawayh was the first in 627-628 (6AH) and occurred in Mada'in (near present Baghdad). The plague in Syria known as Amwas, occurred in 638 or 639. It spread to the rest of Syria, Iraq and Egypt and caused the death of 25,000 Muslim soldiers. The plague of al-Jarif occurred in Basrah around 688-689 (69-70AH). It was also known as the Violent Plague causing over 200,000 deaths within 3 days. Then 17 years later in 706 (87AH) the fourth plague again struck Basrah, known as the plague of al-Fatayal, where like in previous epidemics many fled the city. The fifth plague al-Ashraf in 716-717 occurred in Iraq and Syria.

The Black Death (1347-1351) was the first in a wave of 150 plague outbreaks in the Middle East beginning in Egypt in 1347 and the last documented in Iran in 1877. Shoshan's estimates of the frequency of the plague was approximately one outbreak every 2.3 years in Egypt and one outbreak every 4.1 years for Syria³.

Stuart Borsch applying quantitative modelling estimated 42% mortality from the Black Death in the Middle East. Michael Dols in his seminal book, *The Black Death in the Middle East*, the most authoritative work on this subject,

documented the medical, social, economic, demographic and religious impact in the region. He estimated that the plague wiped out 30-50% of the population of Egypt⁴.

Dols made extensive reference to Ibn Hajar (1372-1449) the celebrated commentator of Sahih al-Bukhari who lost 3 of his daughters during the epidemic in Egypt. Ibn Hajar survived 5 epidemics, and despite the grief of losing his children, he wrote a massive treatise on the plague. Among others, he discussed on the origin of epidemics, what one needs to do during epidemics and the religious edicts on epidemics.

In his Jurisprudence of Epidemics (*Fiqh al-Ṭā'ūn*). He discussed in great detail the famous *ḥadīth* (authentic saying) of the Prophet (peace be upon him):

"If you hear of an outbreak of plague in a land, do not enter it; but if the plague breaks out in a place while you are in it, do not leave that place."

Caliph Umar was anxious to recall his military commander, Abu Ubaidah from the plague stricken Amwas (639) to Medina. His consultative council of the Muhajirun and Ansar, counseled him otherwise, based on the first-hand account narration of this hadith from the Prophet (PBUH) by Abdul Rahman bin Auf.

There has been various interpretations of the Prophet's (PBUH) counsel. This active discussion is exemplified in the exchanges between Caliph Umar and his army commander. Abu Ubaidah chose to stay with his army and felt that the actions of Caliph Umar was fleeing from Allah's *qadr* (decree)⁵.

In a gracious response to his army chief, Caliph Umar said that he was fleeing from Allah's *qadr* to another of Allah's *qadr*. Umar set a major precedent in his

response to the plague besieging Amwas. He described that he was fleeing a bare and barren valley to a green valley, from a plague infested region to a more healthy environment. And he exhorted Abu Ubaidah to take his army to some higher ground where the air is cleaner because the place where they were presently stationed is a very low land⁶.

Before the plague overcame him, Abu Ubaidah shared the glad tidings from the Prophet (PBUH) that those who succumbed to the plague were martyrs and advised his army; “Indeed Allah has decreed for Banī Adam death, so all of them will die. The wisest of them are those who are most obedient to their Lord, and most active in working towards their Return.”

We are inspired by our earlier leaders to harbour optimism and hope in Allah, to turn to Him in self-reflection, to increase our good deeds, repent our wrong ways, to be charitable to the needy and to increase our efforts to help our fellow mankind during the challenging times of a disease outbreak. This gesture of faith in the promises of Allah was captured in the poetic rendition of the plague of Amwas: How many brave horsemen and how many beautiful, Chaste women were killed in the Valley of Amwas They had encountered the Lord, but He was not unjust to them When they died, they were among the non-aggrieved people in Paradise. We endure the plague as the Lord knows, and we were consoled in the hour of death⁷.

In the chapter on the etiquette when afflicted by a plague or other diseases, Ibn Hajar reflected on three main values; supplicating to Allah in seeking good health and protection,

showing patience and acceptance of the decree of Allah and holding good thoughts and assumptions about Allah⁸.

Abu Ubaidah, despite his disagreement with the actions of Caliph Umar, personally heeded his advice and scouted Shams for a higher ground to station his army. Amru al As who succeeded the martyred Abu Ubaidah and Muadh bin Jabal due to the plague, commanded his army to move to the hills in small groups and not to enter Shams until the conditions in the city had improved. His decision to split and relocate his army was severely opposed by the companions but he stood firmly with his decision and this strategic move mitigated the deadly ravages of the Amwas plague. The Muslim army’s initial campaign to advance to Anatolia and later Constantinople to realize the prophecy of the Prophet (PBUH) was suspended and instead Amru al-As directed his army south and conquered Egypt the following year.

These are compelling and epic leadership in the face of an overwhelming political and health crisis. Political leadership is pivotal in pandemic management to protect the lives and livelihood of individuals, families, communities, nations and the world in general. We are everyday learning new information about the virus and therefore political leadership must be objectively informed with the best knowledge available.

”وَمَا أَرْسَلْنَا مِنْ قَبْلِكَ إِلَّا رَجَالًا نُوحِي إِلَيْهِمْ فَاسْأَلُوا أَهْلَ الذِّكْرِ إِنْ كُنْتُمْ لَا تَعْلَمُونَ”

“And We sent not before you except men to whom We revealed (Our message). So ask the people of the message if you do not know”⁹.

The overarching objectives of our strategy against COVID-19 are to reduce the burden of disease, to minimize morbidity and mortality, to

reduce the Reproduction Number (Ro) to <1.0 and to flatten the epidemic curve. This will buy us time to increase our healthcare capacity and infrastructure to manage the epidemic more effectively. Thus not overwhelming our healthcare capacity whilst we await the availability of effective anti-viral, therapeutic agents and the COVID-19 vaccine. Effective control and containment of COVID-19 can only be achieved through massive testing and isolating of positive cases, contact tracing and quarantine and physical distancing.

At the individual level, we should all be an active agent of health and well-being and follow the advice of our medical experts to preserve and enhance the 3Ws of Wash as in personal and communal hygiene, Wear as in putting on face masks, and Warn as in warning to not shake hands, to adopt other social gestures, to practice proper coughing and sneezing etiquette, to disinfect, to stay at home and to seek medical care if unwell.

And due to the air borne transmission of the virus, we must steer clear of the 3Cs namely, Close, Crowded and Confined places which are considered as super-spreader circumstances. And undoubtedly, our five daily prayers, Friday prayers, *Terawih* prayers, religious classes in the mosques, Eid prayers and celebrations are all potentially super-spreader events.

And it has been well shown that these events are responsible for the major COVID-19 clusters as will be illustrated later with the Tabligh cluster. 10-20% of those infected with COVID-19 are responsible for 80-90% of the transmission of the virus¹⁰.

Some of the rules and practices to control and contain the transmission of the SARS-Cov-2 virus are very restrictive, and especially in relation to

our religious obligations, are highly unusual and unprecedented in our lifetimes. Al-Maqrizi, a prominent Egyptian historian mentioned through his account of the plague events in the year 1349 was so severe that most of the mosques were closed and in the majority of districts the azan was stopped¹¹. Therefore it is not at all surprising that our contemporary Muslim scholars issued the fatwa to close all the mosques from all forms of congregational prayers and Friday prayers in the face of the Covid-2019 pandemic as there has been a clear precedent in our history. These are in the midst of a deadly pandemic the best guiding principles and best practices to protect and preserve life (*Hifzul Nas*) and livelihood (*Hifzul Mal*) as prioritized in the objectives of Islamic jurisprudence (*Maqasid as-Shari'ah*).

As a painful lesson, early in the pandemic, the Jemaah Tabligh had their *Ijtima'* (gathering) in Malaysia from 28 Feb – 1 March 2020. It triggered the second wave of COVID-19 in Malaysia. It became the South East Asia hotspot spreading to Brunei (50 cases), Cambodia (13 cases), Singapore (5 cases) and Thailand (2 cases). And 700 participants from Vietnam, the Philippines and Indonesia were investigated. The Tabligh cluster made up 40% of the total COVID-19 cases in Malaysia. It contributed to 23% of deaths and it spawned 2 sub-cluster causing 121 cases. It has spread deep into the community with five generations of spread.

All of these restrictions of physical distancing and lockdown will test our patience and resilience. We must tame our ego, which only thinks about our very selves only. We have to sacrifice part of our personal freedom for the bigger good of the nation and to protect the high risk groups amongst us,

namely our elderly and those who suffer from multiple co-morbidities.

COVID-19 not only threatens our personal health but also our socio-cultural and national economy. If we sacrifice our personal liberty today we will in the long run enjoy not only better health but also the preservation of our socio-cultural milieu and economic recovery.

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COVID-19: IMPLICATIONS ON OUR COMMUNAL PRAYERS

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Abstract

Social interaction is an important part of many cultures including that of Muslims, where it is considered obligatory in communal prayers. The issue of religious congregations and communal prayers is being widely discussed with some difference of opinions vis a vis the COVID-19 pandemic. Islam encourages prayers (*Salah*) at home and the suspension of religious congregations during pandemics to ensure physical distancing and avoiding harm to oneself and other persons. This is evident from the Qura'n and *Sunnah* (authentic traditions of the prophet) and the other primary sources of *Shari'ah* law. And this has been recommended by jurists of Islamic law (*Fiqh*).

Keywords: human life, harm, mosque, pandemic, Islam.

Discussion

Islamic *Shari'ah* addresses this issue on the basis of three core principles of Islam teachings;

- 1. Value and sanctity of human life:** Islam has the highest value for human life. Qura'n equates saving of a single human life (irrespective of faith) to saving of the whole of mankind¹. The prophet Muhammad (PBUH) declared the same² and also narrated that the life of a single person is more sacred than the *Kaa'ba*³ (the holiest place of Islam). It is for the same reason that the Qura'n allows the use of otherwise absolutely forbidden things and actions to save human being in life threatening situations⁴. The scholars of Islamic jurisprudence also stated that "in case of unavoidable conflict between the two, priority will be given to human rights over God's rights⁵. A surgeon may continue surgery and skip his prayer and offer it later. In the present pandemic it applies to the avoidance of communal prayers (God's right) and to stay home to avoid harm to others (Human rights). Islam makes it obligatory to use otherwise absolutely forbidden items when there is significant threat to human life^{6,7}.

Avoiding harm and discomfort to others:

Allah has declared in the Qura'n that "*He does not create difficulties for you*"⁸ and "*does not burden any one beyond one's strength*"⁹. Allah also declares that "*do whatever is in your capacity*"¹⁰. The same was narrated by the prophet Muhammad^{11,12}. People are allowed not to fast¹³ and to shorten and combine their normal prayers whilst travelling¹⁴.

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It is prohibited for Muslims to attend communal prayers in the mosque if they become a source of harm (discomfort) to others. The holy prophet forbade people to go to the mosque even in cases of minor discomfort to others e.g. bad smell from mouth after eating onion^{15,16} and allowed praying at home while it is raining^{17,18}. He also forbade carrying spear inside mosque for fear of hurting others^{19,20}.

These examples clearly explain that even minor discomfort/harm to others should be avoided in all circumstances including obligatory prayers. The prophet Muhammad instructed that one should avoid harm to oneself and others²¹. Consequently it would be imperative to avoid potential risk of harming others or getting exposed to life threatening infections like COVID-19 during communal prayers and other such religious congregations with close interactions.

The Islamic jurisprudence includes legal maxim like; preventing harm to others²², allowing mitigation in hardship²³, non-maleficence to take priority over beneficence²⁴, tolerating personal harm to prevent public harm²⁵ and prohibits even those “allowed” actions that may ultimately lead to harm²⁶. Application of these maxims in current pandemic clearly means that all such circumstances and activities must be avoided that have the potential of harming others.

2. Islamic view on dealing with infectious diseases: The prophet Muhammad has forbidden mixing of healthy people with those suffering from infectious diseases²⁷ and advised isolation (quarantine) in case of plague (pandemic)²⁸. He also declared (and incentivized) that if any one stays at home in plague (pandemics) he will get the reward of a martyr (in case of death)²⁹.

There are many examples from the life of the prophet Muhammad that explains the importance of physical distancing in pandemics / infectious conditions. We can find these in the most authentic books of his narrations. One such example is that of a person suffering from leprosy (which may spread through nasal droplets) who came to the prophet Muhammad to make a pledge on Islam. The tradition was to hold the hand of the prophet and make the pledge. But in this case the prophet avoided to do that and asked the companions to tell him that his pledge is accepted (without hand shake) and asked him to leave without seeing the prophet³⁰. On another occasion the prophet instructed people to keep a distance of at least the length one javelin (minimum six feet) while interacting with a person suffering from leprosy³¹.

The principles of Quarantine and the contagious nature of certain infections were described during the era of the prophet³². He ordered anyone who suffered from the plague should isolate themselves at home³³.

The prophet Muhammad said that “a hard time may come when it would be better for the standing ones to sit, for the walking one to stop and for the running ones to walk only. Those who come across such time better take shelter in any place they may find”^{34,35}. When the prophet (PBUH) was asked what is the way of salvation he said “control your tongue, stay at your home and repent on your sins”³⁶. The prophet did not differentiate between healthy and sick and it applies to both. Islam strongly advises for personal safety and avoiding exposure to potential life threatening risk (e.g. exposure to COVID-19). The

Qura'n states "*do not kill yourself with your hands (action)*".³⁷

These instructions were also followed by the companions of the prophet during the pandemics. One such example is that of Umar (the second caliph) when he set out for Syria and reached near the city, when he was informed that a plague had broken out in Syria. He ordered the army to move back. Some companions objected and said that you cannot avoid the destiny but others argued in favor of return and said we should not expose our people to the plague. One of the closest and most knowledgeable companion of the prophet, 'Abdur Rahman-Ibn-Awf reported to Umar the narration of the prophet, "When you hear that there is plague in an area, do not enter it and if you happen to be already there already, then do not leave that place" So Umar thanked him for facilitating the right decision and ordered the army to retreat"³⁸.

Based on the teachings of the Qura'n and the narrations of the prophet, the Islamic scholars have enumerated nineteen different conditions to offer prayers at home and avoid going to mosques. These include many mild conditions like old age, severe cold weather and rain that may create hardship for people³⁹.

The Muslims also followed such practices in Islamic history. The Islamic hospitals developed separate wards for contagious and non-contagious diseases in 700-800 AD⁴⁰ and permitted to quarantine patients of leprosy from others⁴¹. In the year 1025, Avicenna mentioned in his book "The Cannons of Medicine" about infectious disease and in addition to leprosy also recognized what

he called "endemic transmission of sweating sickness"⁴².

Islam also advised us to seriously consider the opinions of professionals in matters related to their field. It is categorically stated in the Quran to seek the opinions of knowledgeable (of their field) people while making decisions in technical issue related to their fields of expertise⁴³. The Islamic scholars also advised to make decisions in such situations by studying the specific aspects of the problem and soliciting the opinions of experienced and competent (professional) experts⁴⁴. Therefore the opinion and decision in such issues (pandemic) shall be based on recommendations of medical experts. It is based on these professional advise that Islamic scholars have recommended to minimize the number of people in mosques as well as the maintenance of physical distancing^{45,46}.

Conclusions

Islam not only allows but strongly recommends the following in pandemics including the present pandemic of COVID-19

- a. Religious congregation including communal prayers should be temporarily suspended to prevent the spread of the disease to others. The worship in mosques may be limited to the minimum i.e. the care takers of mosque, with physical distancing.
- b. Advice of Health Professionals and the government should be followed.
- c. Observing physical distancing
- d. Self-isolation in the house should be practiced

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EMBRACING RAMADAN FASTING DURING COVID-19 PANDEMIC

Ahmad Faidhi Mohd Zaini, and Aneesa Abdul Rashid***

Abstract

Ramadhan is the most anticipated season in the Muslim calendar year. It is known as the holy month for worship (*Ibadah*), and reflections. It is also a month of festive celebrations in the majority of Muslim countries. Muslims will congregate for breaking of fast (*Iftar*), *Ramadhan* Bazaar and the *sunna* congressional prayer (*taraawih*).

The Covid-19 pandemic hit the world hard, and we were mostly caught unprepared.¹ There were many restrictions the Muslims had to abide to during the Ramadan during the Covid-19 pandemic. The congregational prayers that are highly encouraged during this holy month, could not be done.² Many missed breaking fast together with family and friends, a common tradition among Muslims in *Ramadhan*. However, perhaps this new-norm can be said to be a blessing in disguise.

While many Muslims could no longer congregate for the said activities due to the movement restrictions or lockdowns, it has provided a unique opportunity for *Ramadhan* to be celebrated in a more humbling experience with much self-retrospection.

Keywords: *Ramadhan*, *Ibadah*, *Taraawih*, Covid-19, pandemic.

Fasting to Attain *Taqwa*

“O you who have believed, decreed upon you is fasting as it was decreed upon those before you that you may become righteous” -al-Baqarah 2:183.

Fasting is a way to attain *Taqwa*, which means a sense of God consciousness and righteousness in one’s everyday life^{3,4}.

The Covid-19 pandemic should serve as a reminder (*tazkirah*) from *Allah* that humans are fragile and can succumb to death at any time as a result of this pandemic.

Covid-19 serves as a message for us to remember death (*zikrulmaut*). Hence, the Covid-19 pandemic and *Ramadhan* should act as a medium to bring one closer to God.

A Healthy Diet during Ramadan

Due to the movement restriction order in many Muslim countries, less of us are lured to buy food from the many Ramadan Bazaars. Sometimes, buying much more than we should; causing much wastage of food, which is something that Islam frowns upon. Cooking simple, fresh and balanced meals at home not only increases family bonding, but also may serve as a step towards a much healthier lifestyle. Modest cooking and meal preparations at home without excessive additives or preservatives is also another benefit.

The period of the pandemic which limits access to outside food is helpful for patients that are diabetic, hypertensive and with dyslipidaemia. Preparing food at home, will reduce the chances from indulging sugary desserts and drinks that is the common norm.

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Studies have also shown that Ramadhan brings many benefits in terms of health including weight reduction, better lipid levels and immune system³⁻⁵.

The Month of al-Quran

“Verily, We have sent it (this Qur’an) down in the Night of Al-Qadr (Decree).”
[al-Qadr 97:1]

“The month of Ramadan in which was revealed the Qur’aan, a guidance for mankind and clear proofs for the guidance and the criterion (between right and wrong). So whoever of you sights (the crescent on the first night of) the month (of Ramadan i.e. is present at his home), he must observe Sawm (fasts) that month...”
[al-Baqarah 2:185]

Ramadan is synonymous with al-Quran as it was sent down from Allah to Muhammad (PBUH) during this holy month. The lockdown gives ample opportunity to recite and study the Quran. This may not be possible during previous times, due to heavy workload and tight schedule.

Nights of Prayer

From Abu Hurayrah that the Prophet (peace and blessings of Allah be upon him) said: *“Whoever spends the nights of Ramadaan in prayer out of faith and in the hope of reward, his previous sins will be forgiven.”*
-al-Bukhaari (2008) and Muslim (174)

The *seerah* narrated that Tarawih was initially performed at home by Prophet Muhammad (PBUH). He did not make a big congregation of tarawih prayer in the mosque. This is so that the prayers will not to be perceived by the *Sahabah* as compulsory (*wajib*). Praying at home with the family, as most have experienced, brings more sense of togetherness and love. Ramadhan is seen by Muslims as a means

to bring one closer and rekindle family relationships⁶.

Front-liners in Ramadhan

Those that are sick and affected with Covid-19 have special provisions to break their fast as verily illustrated in the same verse (*Ayat*) that commands fasting.

“So whoever sights [the new moon of] the month, let him fast it; and whoever is ill or on a journey - then an equal number of other days. Allah intends for you ease and does not intend for you hardship and [wants] for you to complete the period and to glorify Allah for that [to] which He has guided you; and perhaps you will be grateful.” -al-Baqarah, 185

Front liners (health and security personnel) work under challenging conditions wearing personal protective equipment (PPE) during this pandemic.⁷ Hence, looking after their wellbeing is paramount.^{4,7} It is allowed for them to break their fast during *Ramadhan* while replacing the fast at a later date. The duty to treat and manage patients is a paramount obligation (*Fardhu Kifayah*). This is due to the expertise of the front-liners that can only be fulfilled by those trained in the field.

The New Norm, Until the Next Ramadhan

Ramadhan is regarded as a month of self-training to develop positive and healthy habits. It is the perfect opportunity to stop smoking.³ It is the perfect time to embrace healthy eating. It is the perfect time to nurture and rekindle family relationships. Hence, this *Ramadhan* Covid 19, with all its challenges has come to us this year with many of its wisdom (*Hikmah*) for us to ponder and act on to become better Muslims.

“The five daily prayers, from one Jumu’ah to the next and from one Ramadaan to the next are expiation for (sins committed) in

between, so long as you avoid major sins.”
- Sahih Muslim (233)

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CORONAVIRUS PANDEMIC EFFECTS ON *HAJJ*, *UMRAH* AND OTHER CONGREGATIONS

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Abstract

Coronavirus infections (COVID-19) infected more than 37.42 million people in 188 countries (12 Oct 2020). More than 1.07 million (12 Oct 2020) people have lost their lives and many are struggling for survival. Several countries are still facing difficulties in preventive and therapeutic efforts towards managing the deadly pandemic. Economic and social disruptions augmented the paralyzing overwhelming infective process. The developed and developing countries were not discriminated against by this infection. Scientific data and approaches to the management strategies changed frequently. The issue of religious congregations and communal prayers (*Salah* with *Jamaat*) in mosques is being widely discussed in the context of the pandemic, with some differences of opinion. The suspension of religious congregations including annual pilgrimage (*Hajj*) and *Umrah* in the present situation to ensure physical distancing and the permission of praying (*Salah*) at home is discussed in the light of Islamic teachings. It seems that the virus will not go away anytime soon. We need to learn how best we can cope with the continuous emerging situation. Humanity is at a crossroads and decisions of today will dictate the future outcome. Therefore, there is a pressing demand for meaningful dialogue engaging all segments of human societies to prepare for the post COVID-19 era. This discussion is mostly based on the *Shariah* view on human value, avoiding harm and the stance of Islamic teachings in regard to infectious diseases causing pandemics. The references are primarily from the Glorious Qur'an and the *Sunnah*. A few references from the books of Islamic jurisprudence (*Fiqh*) are also included. This discussion will display certain important points; how Islamic teachings provide comprehensive management of the human society, individuals, institutions and states in dealing with the difficult situations in general, and pandemics in particular.

Keywords: COVID-19, infections, pandemic, human life, difficulty, harm, Hajj, *Umrah*, Islamic teachings, Quran, Hadith.

Introduction

Coronaviruses are a group of RNA viruses that cause diseases in human, other mammals and birds. The group of coronaviruses causing diseases in human beings that were identified include: SARS-CoV-1 in 2003, HCoV NL63 in 2004, HCoV HKU1 in 2005, MERS-CoV in 2012 and SARS-CoV-2 in 2019. The latter coronavirus causes an infectious disease called COVID-19.

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It is highly contagious and causes mild to moderate respiratory illness in the majority of patients while in other cases, the disease might cause serious illness particularly in elderly patients and those with comorbidities. As there is no known specific treatment, the best way to manage it is prevention and slowing down the transmission through physical distancing, frequent thorough washing hands, avoiding public gathering, and practicing respiratory etiquette including the use of masks.

Further, when infection occurs taking antipyretics/analgesics, drinking lots of liquids, and getting enough rest can help manage the symptoms and prevent the complications. Vaccination and other therapeutic measures to control its spread and manage its effect will take quite a while despite scientific progress in the fields of infectious diseases and virology. During this pandemic when several facts about the health care systems and its inability to control the disease became evident, revealed text and Islamic teachings provided very effective tools to deal with the pandemic¹.

Islamic Teachings and Humanity

Islamic teachings are derived from the Glorious Qur'an and the authentic traditions of Prophet Muhammad ﷺ. Quranic text and the traditions of Prophet ﷺ have been preserved through various means, including memorisation by countless scholars in each generation and compiled in authentic books of hadiths. The life and practice of the companions of the Prophet Muhammad ﷺ and their direct scholarship related to prophet hood is a very important source of explanation of practical Islam. The Muslim scholars of various ages spent their lives in making this knowledge correctly understood while providing the solution of various problems faced by humanity from time to time. These teachings are so comprehensive

that they cover, explicitly or by inference, every aspect of life from apparently trivial personal matters to the enormous issues facing institutions, states and the humanity at large. Islamic teachings are not only for Muslims but for humanity at large as described in Quran like:

"وَمَا أَرْسَلْنَاكَ إِلَّا رَحْمَةً لِّلْعَالَمِينَ"

*"We have not sent thee but as the source of mercy and blessing for the entire universe"*².

The Muslims firmly believe that the life of the Prophet ﷺ is the perfect model and complete embodiment of all the teachings of Allah for humanity in different roles at any time and place. It provides sound guidelines for the welfare of humanity, as mankind is considered to be the most honored and beautiful creation of the al-Mighty Allah.

"وَلَقَدْ كَرَّمْنَا بَنِي آدَمَ وَحَمَلْنَاهُمْ فِي الْبَرِّ وَالْبَحْرِ وَرَزَقْنَاهُمْ مِّنَ الطَّيِّبَاتِ وَفَضَّلْنَاهُمْ عَلَى كَثِيرٍ مِّمَّنْ خَلَقْنَا تَفْضِيلًا"

*"And We have certainly honored the children of Adam and carried them on the land and sea and provided for them of the good things and preferred them over much of what We have created, with [definite] preference"*³.

A believer always finds himself on the path of unity and conformity, responsibility comes from the concept of reward and punishment; both in this world and in the hereafter, which is the permanent abode of humanity, rising above his personal whims and desires. The teachings of Islam are enlightening all times with particular reference to adversities and crises and covers both the spiritual and physical aspects of human life. Considering the universality of Divine guidance, the *shari'ah* guidelines are aimed to achieve human prosperity and wellbeing here and in the hereafter. The guiding principles are described in Quran and Sunnah:

"وَمَا خَلَقْتُ الْجِنَّ وَالْإِنْسَ إِلَّا لِيَعْبُدُونِ"

“And I did not create the jinn and mankind except to worship Me”⁴.

Similarly, these divine instructions are to enhance the proficiency of human beings and direct them to the right direction so that they can achieve the goal of this life and eternal success in the after-life.

“مَا أُرِيدُ مِنْهُمْ مِنْ رِزْقٍ وَمَا أُرِيدُ أَنْ يُطْعَمُوا”

“I do not want from them any provision, nor do I want them to feed Me”⁵.

Moreover, Islamic faith highlights the limitations of humankind and our helplessness in the face of challenges of immense magnitude. It reminds us that the world has a Creator with a grand scheme and design whom people of knowledge and wisdom recognize because of His signs that are evident in the Universe, the perfection of His creation and the consistency in His design. Man has been assigned a noble role in that grand scheme, where he should act as the vicegerent of Allah on earth. In line with his assigned role, he should not transgress his limits and commit rebellion against Allah. The crisis serve as a warning from the Creator for those who deny Allah’s existence or think that He may have created it, but is not actively controlling it; and that they can play God by acting the way they like and trampling on the rights and freedoms of others. None can overcome or overpower Allah’s command whatsoever he does.

“وَإِنَّ جُنَدَنَا لَهُمُ الْعَالَمِينَ”

“And our forces (soldiers), they surely must conquer”⁶.

The cornerstone of this message is the emphasis on the purpose of human life on earth; the realization that man has been created and sent to earth by Allah as His vicegerent and, therefore, he must act in line with the

orders of his Creator and in conformity with His laws in nature, and not rebel against them. He must not forget that he is a tiny creature of al-Mighty Allah, the Lord of the universe, in this planet which is a tiny creature in the vast universe with billions of stars and planets.

Once he realizes this sublime objective and follows the Divine wisdom, he finds himself on a path of unity with the universe. He rises above his personal whims and desires, and selfish inclinations and tendencies, as distractions from this noble cause of the collective welfare in which lies his own safety and wellbeing. Next comes the concept of reward and punishment both in this world and in the hereafter, which is the real and permanent abode of humanity. In order to guarantee his success in both this world and the hereafter, man becomes a responsible citizen of this planet by adhering to the teachings of Islam as embodied in the life of the Prophet ﷺ.

Clinical presentation, investigation, management and prevention of Covid-19

Fortunately, the majority of those infected with COVID-19 will have a mild form of the illness and recover without medical assistance. While a number of infected people will even not exhibit any defined symptoms (asymptomatic) or are pre-symptomatic, both capable of transmitting the infection to others, posing great dangers particularly to the frail, elderly population and those with co-morbidities. Around one in six people will become severely ill and need hospital care. Scientific data suggest that around 1-2 in 100 people who get COVID-19 will die. Much more needs to be understood about the epidemiological

behavior of this infection, and its clinical manifestations as some people get more serious symptoms than others in the same age group and environments. Extensive research is underway towards a better understanding of the epidemiology, environmental factors and management of COVID-19. The WHO and other global agencies have recommended the following measures to control and contain the COVID-19 pandemic:

1. Hand hygiene
2. Physical distancing
3. Speaking, coughing, sneezing etiquette
4. Avoidance of closed, crowded and confined spaces
5. Avoidance of touching eyes, nose and mouth.
6. Use of face masks
7. Stay home and self-isolate even with minor symptoms such as cough, headache, mild fever, until one recovers fully.
8. Seek early medical advice
9. Update on recent trends in managing COVID-19

Islamic viewpoint on religious congregations including *Hajj* and *Umrah* during pandemic COVID -19

This pandemic has proved how vulnerable our material life is, and how helpless we are in protecting it. Mankind, as a whole, has been knocked out by some of the tiniest creatures of Allah, despite its tall claims of harnessing diseases and having built the best medical care systems. This situation has led many to despair, anxiety, depression and several other miseries. However, we observe that people with faith in Allah and in the hereafter, signifying the purpose of their life beyond this material world, have been spared of these agonies to a large extent. It may be of interest for us to know why. Muslims believe that this worldly life is a test from

Allah which definitely entails various trials and tribulations, preparing them for their permanent abode in paradise. Death is not the end of life for them; rather, it is the beginning of a new phase of life; and it has a pre-ordained time that will not change. This belief has served them well in facing the present crisis, like a ship anchored firmly in the harbour, which can withstand any types of typhoons. The Holy Qur'an has highlighted this fact by saying:

"وَمَا الْحَيَاةُ الدُّنْيَا إِلَّا لَعِبٌ وَهْوٌ وَلَلْآخِرَةُ خَيْرٌ لِّلَّذِينَ يَتَّقُونَ أَفَلَا تَعْقِلُونَ"

This worldly life is no more than play and amusement, but far better is the 'eternal' Home of the Hereafter for those mindful 'of Allah'. Will you not then understand? (they will never cling to the worldly life.)⁷"

Current scenario

Covid-19 sprang on the world scene from nowhere with a big bang, playing havoc with the lives of individuals and nations alike, thus mankind is at the cross-roads and we need to learn how to behave being a Muslim and strongly believe that Allah's knowledge and power is beyond human imaginations:

"...وَمَا يَعْلَمُ جُنُودَ رَبِّكَ إِلَّا هُوَ..."

"And none knows the forces (soldiers) of your Lord except Him⁸".

Instead of making excuses of avoiding standard operating procedures to contain the disease we must come up with measures which strengthen the community and to cooperate with the authorities in these regards. Islamic teachings based on the religious textual sources and principle, direct all scholars and mosque management systems including the grand mosques in Makkah and Madinah to prohibit all actions which might contribute to the spread of the disease and harm the mosque congregation

and the community. The general well-being of mosque congregants should be safeguarded. Closure of public places should not be perceived negatively rather all steps to be taken to curtail the spread of infection including imposing restrictions on *Hajj*, *Umra*, Friday congregation and even limit the daily five times congregational prayers in the mosques. We should advise each other to strengthen our faith in these difficult times and to increase our prayers and supplications to Allah s.w.t, in addition to taking every necessary preventive measure to contain this COVID-19 situation. We must remain united, share responsibilities in safeguarding community interests. All of these measures are in harmony with the maqasid as-shari'ah (primary objectives of Islamic jurisprudence). The second objective is the protection and preservation of life, its well-being and dignity which is directly quoted in the Glorious Quran:

"... أَنتُمْ مَنْ قَتَلْتُمْ نَفْسًا بِغَيْرِ نَفْسٍ أَوْ فَسَادٍ فِي الْأَرْضِ فَكَأَنَّمَا قَتَلْتُمُ النَّاسَ جَمِيعًا وَمَنْ أَحْيَاهَا فَكَأَنَّمَا أَحْيَا النَّاسَ جَمِيعًا ..."

"Whoever kills a soul unless for a soul or for corruption [done] in the land - it is as if he had slain mankind entirely. And whoever saves one - it is as if he had saved mankind entirely⁹".

This is also supported by a *Hadith* narrated by *Abdullah bin Umar*:

"It was narrated that *'Abdullah bin 'Amr* said: "I saw the Messenger of Allah (ﷺ) circumambulating the *Ka'bah* and saying: 'How good you are and how good your fragrance; how great you are and how great your sanctity¹⁰".

The Muslim scholars, *Shariah* experts agreed on the following measures to be taken to avoid human to human transmission of infection.

1. Avoid hand shaking and hugging
2. Maintain a distance of 6 feet
3. Act upon the medical instructions

4. Abide by the standard operating procedures, avoid gatherings including congregational prayers in mosques, funeral prayers to be limited to family members, avoid wedding ceremonies, and more than ten individuals in social gatherings.
5. Mosques should be closed but the Imam (clergy official) is allowed to proceed with five times congregational prayers, including Friday prayers with a few mosque officials
6. Those who have symptoms of Covid-19, must stay home in quarantine and follow strict protocols to prevent the spread of infection.

There was debate among the religious scholars to resolve if the state can prohibit someone from going to congregational prayers, or can close mosques including the great mosques of Makkah and Madinah, in pursuit of prevention of the spread of infection.

Importance of *Hajj* and *Umrah*

Hajj is one of the five pillars of the Islamic faith. The Prophet, (ﷺ) said:

"Islam is built upon five (pillars): the testimony that none has the right to be worshipped except Allah and Muhammad is the messenger of Allah, the establishment of the prayer, paying zakat, Hajj to the House (i.e. Ka'bah,) and fasting in Ramadan." (*al-Bukhari and Muslim*).

It is purify one's soul, leading the person onto a new path of spiritual greatness and wellbeing. *Hajj* is considered to be the most influential aspect of a Muslim's social, economic and moral being. Quranic verses and traditions of the Prophet (ﷺ) emphasize its importance in the following selected texts. *Hajj* was prescribed in the sixth year after

Hijrah (migration) upon the revelation of the following verse in which Allah Says:

"وَأَتِمُّوا الْحَجَّ وَالْعُمْرَةَ لِلَّهِ..."

"And complete the Hajj and 'Umrah for Allah...¹¹".

"... وَاللَّهُ عَلَى النَّاسِ حَكِيمٌ عَلِيمٌ مَنْ اسْتَطَاعَ إِلَيْهِ سَبِيلًا..."

"It is on people for the sake of Allah to perform Hajj of his house, anyone who is able to undertake the journey to Him¹²".

Hajj is not a new institution introduced by Prophet (ﷺ) rather it is as old as the *Ka'bah* itself. Allah the Almighty says:

"إِنَّ أَوَّلَ بَيْتٍ وُضِعَ لِلنَّاسِ لَلَّذِي بِبَكَّةَ مُبَارَكًا وَهُدًى لِّلْعَالَمِينَ"

"Indeed, the first House [of worship] established for mankind was that at Bakkah [i.e., Makkah] – blessed and a guidance to the worlds¹³."

There are many Hadiths of the Prophet (ﷺ) relating to the significance of *Hajj*. This once in a lifetime action forgives all sins of the pilgrim. The Prophet (ﷺ) said:

"Whoever performs Hajj for Allah's pleasure and does not have sexual relations with his wife, and does not do evil or sins then he will return (after Hajj free from all sins) as if he were born anew¹⁴".

The Prophet (ﷺ) said:

"Pilgrims and those performing 'Umrah are Allah's guests; their prayers are answered and their supplications for forgiveness are granted¹⁵."

Hajj and Umrah Restrictions

The Kingdom of Saudi Arabia (KSA) imposed restrictions on the congregation at the great mosques of Makkah and Madinah (mosque of the Prophet ﷺ). The Muslims

around the world have great respect for these holy places and every Muslim has intense desire to perform the pilgrimage and visit (*Ziarah*) of the Prophet's mosque. Every year over 2.5 million pilgrims perform *Hajj* for a week-long ritual, which is an once-in-a-lifetime duty for every able-bodied Muslim¹⁶. According to official Saudi statistics the Kingdom receive 7.2 million pilgrims and issue 7.5 million *umrah* visas weekly during Ramadan and millions of faithful perform *umrah* and visit the prophet's mosque in Madinah yearly¹⁷. The Saudi government imposed lockdown in the mosques and imposed restrictions on *Hajj* and *Umrah* in 2020 due to the COVID-19 pandemic. Only about 1,000 pilgrims residing in the kingdom were allowed to perform the *Hajj* this year, with strict standard operating procedures. These restrictions generated anxiety equally among the faithful and some Islamic scholars. Going back in the history, this is not the first time these restrictions were imposed. Other than during conflicts and wars there are several occasions when lockdown on *Makkah* was imposed due to the outbreak of diseases. It is mentioned by *ibn Kathir* that *hajj* was cancelled due to the outbreak of diseases as early as 357 Hijri (957 AD). In the recent past, a plague from India hit *Makkah* in 1831 and killed three-quarters of the pilgrims who had endured weeks of travel through dangerous and barren lands to perform *Hajj*. *Hajj* was halted at least three times between 1837-1858 when the city was hit by plague. Outbreak of cholera in 1846 and of plague in 1850 also halted the *Hajj* process. The global outbreaks of cholera in 1865 and 1883, and other historical disease outbreaks restricted pilgrims from performing *Hajj*. Due to the Ebola outbreak, the Saudi government temporarily stopped issuing *Umrah* and *Hajj* visas for the citizens of Guinea, Liberia and Sierra Leone between 2014-16. Iran also stopped its pilgrims to attend *Hajj* in 2016 after talks failed with

Saudi Arabia to arrange for pilgrims to attend¹⁸. The recent outbreak of the novel COVID-19 is posing a severe public health risk across the globe. Therefore, the Ministry of Hajj and Umrah (KSA), after close analysis of the prevailing situation of COVID-19, and after seeking the opinions of the religious scholars, imposed restriction on Umrah and Hajj in 2020. Although the Saudi government has been continuously taking all possible measures to contain the pandemic, the people's cooperation is crucial in the fight against COVID-19. Meanwhile some scholars disagreed with the Saudi government's decision to impose restrictions on Hajj and Umrah and drew from the Quranic verse:

"وَإِذَا كُنْتَ فِيهِمْ فَأَقِمْ لَهُمُ الصَّلَاةَ فَلْتَقُمْ طَائِفَةٌ مِنْهُمْ مَعَكَ وَلْيَأْخُذُوا أَسْلِحَتَهُمْ فَإِذَا سَجَدُوا فَلْيَكُونُوا مِنْ وَرَائِكُمْ وَلْتَأْتِ طَائِفَةٌ أُخْرَى لَمْ يُصَلُّوا فَلْيُصَلُّوا مَعَكَ وَلْيَأْخُذُوا حِذْرَهُمْ وَأَسْلِحَتَهُمْ وَذَ الَّذِينَ كَفَرُوا لَوْ تَغْفُلُونَ عَنْ أَسْلِحَتِكُمْ وَأَمْتِعَتِكُمْ فَيَمِيلُونَ عَلَيْكُمْ مَيْلَةً وَاحِدَةً وَلَا جُنَاحَ عَلَيْكُمْ إِنْ كَانَ بِكُمْ أَدَى مِنْ مَطَرٍ أَوْ كُنْتُمْ مَرَضَى أَنْ تَضَعُوا أَسْلِحَتَكُمْ وَخُذُوا حِذْرَكُمْ إِنَّ اللَّهَ أَعَدَّ لِلْكَافِرِينَ عَذَابًا مُهِينًا"

"And when you are among them and lead them in prayer, let a group of them stand [in prayer] with you and let them carry their arms. And when they have prostrated, let them be [in position] behind you and have the other group come forward which has not [yet] prayed and let them pray with you, taking precaution and carrying their arms. Those who disbelieve wish that you would neglect your weapons and your baggage so they could come down upon you in one [single] attack. But there is no blame upon you, if you are troubled by rain or are ill, for putting down your arms, but take precaution. Indeed, Allah has prepared for the disbelievers a humiliating punishment¹⁹".

Also, at another place in Quran:

"وَمَنْ أَظْلَمُ مِمَّن مَنَعَ مَسَاجِدَ اللَّهِ أَنْ يُذَكَّرَ فِيهَا اسْمُهُ وَسَعَى فِي خَرَابِهَا أُولَئِكَ مَا كَانَ لَهُمْ أَنْ يَدْخُلُوهَا إِلَّا خَائِفِينَ لَهُمْ فِي الدُّنْيَا خِزْيٌ لَهُمْ فِي الآخِرَةِ عَذَابٌ عَظِيمٌ"

"And who are more unjust than those who prevent the name of Allah from being mentioned in His mosques and strive toward their destruction. It is not for them to enter them except in fear. For them in this world is disgrace, and they will have in the Hereafter a great punishment"²⁰.

Also, they emphasized that during the days of Umar ibn al- Khattab (RA), there was an outbreak of plague where quarantine was imposed, but there was no concrete evidence that Muslims were barred from visiting mosques.

It is reported that the wife of the Prophet asked Allah's messenger (ﷺ) about the plague, and he (ﷺ) informed her saying, "Plague was a punishment which Allah used to send on whom He wished, but Allah made it a blessing for the believers. None (among the believers) remains patient in a land in which plague has broken out and considers that nothing will befall him except what Allah has ordained for him, but that Allah will grant him a reward similar to that of a martyr²¹."

On the other hand, the majority of Islamic scholars consider the restrictions justified and based on the following traditions of the Prophet (ﷺ):

Saud narrated: The Prophet said, if you hear of an outbreak of plague in a land, do not enter it; but if the plague breaks out in a place while you are in it, do not leave that place²².

"Umar ibn al-Khattab departed for the Sham (Syria and Lebanon) expedition and when he reached Sargh, the commander of the Muslim army, abu' Ubaida ibn al-Jarrah and his companions met with the caliph and told him that an epidemic had broken out in Sham. Umar said, "Call for me the early

immigrants to Medina from Mecca." So `Umar called them, consulted them and informed them that an epidemic had broken out in *Sham*. Those people differed in their opinions. Some of them said, "We have come out for a purpose and we do not think that it is proper to give it up," while others said (to `Umar), "You have along with you other people and the companions of Allah's Messenger (ﷺ) so do not advise that we take them to this epidemic." `Umar said to them "leave me now." Then he said, "Call the *Ansar* (the inhabitants of Medina) for me." I called them and he consulted them, and they followed the way of the immigrants and differed as they did. He then said to them, leave me now," and added, "call for me the old people of *Quraish* who emigrated in the year of the conquest of Mecca." I called them and they gave a unanimous opinion saying, "We advise that you should return with the people and do not take them to that (place) of epidemic." So `Umar made an announcement, "I will ride back to Medina in the morning, so you should do the same." *Abu 'Ubaida ibn al-Jarrah* said (to `Umar), "Are you running away from what Allah had ordained?" `Umar said, "Would that someone else had said such a thing, O abu 'Ubaida! Yes, we are running from what Allah had ordained to what Allah has ordained. Don't you agree that if you had camels that went down a valley having two places, one green and the other dry, you would graze them on the green one only if Allah had ordained that, and you would graze them on the dry one only if Allah had ordained that?" At that time `Abdur-Rahman ibn `Auf, who had been absent because of some job, came and said, "I have some knowledge about this. I have heard Allah's Messenger (ﷺ) saying, 'If you hear about it (an outbreak of plague) in a land, do not go to it; but if plague breaks out in a country where you are staying, do not run away from it.'" "Umar thanked Allah and returned to Medina²³".

Scholars who stood by the governmental decisions to impose restrictions on religious congregations including *Hajj*, *Umrah*, visitation exhibit correct understanding of the verses on praying during times of danger that they should take turns in prayer whilst one group watched over them. They also drew conclusions from the permission to pray at home in case of weakness, sickness and during travel. Moreover, the majority of Islamic scholars also do not consider that these verses on warfare are applicable to epidemic situations. Warfare is a different situation, where the enemy would find any opportunity to attack, while in a pandemic, the enemy is not visible spreading everywhere, in every town, in every locality and spreads through human to human interaction. Here the *Shariah* guides us through the verse:

“فَإِنْ خِفْتُمْ فَرِجَالًا أَوْ سُجُنَاتٍ فَأِدَّاءُ أَيْمَنِكُمْ فَادْعُوا اللَّهَ كَمَا عَلَّمَكُم مَّا لَمْ تَكُونُوا تَعْلَمُونَ”

“And if you fear [an enemy, then pray] on foot or riding. But when you are secure, then remember Allah [in prayer], as He has taught you that which you did not [previously] know²⁴”.

The grand mosque in Makkah and the mosque of the Prophet in Madina remained closed during the pandemic, there are still travel restrictions on pilgrimage and Muslims from around the globe have been prohibited to enter Mecca and Madinah.

This is a temporary phenomenon and as soon as the risk of disease transmission is contained, the usual prayers and congregations will be allowed. The pilgrimage (*Hajj*) and *Umrah* restrictions on the faithful will be lifted and these obligations will be performed as usual.

Scholars take their leads from several traditions of the prophet (ﷺ) where the faithful were asked to stay and pray at home

in case of danger of injuries or even facing difficulties.

When a companion from *Banu Thaqeef* who was suffering from leprosy sought, to pledge his allegiance to him, which would require him to touch the Prophet's (ﷺ) hand. Prophet (ﷺ) told him from a distance that his pledge had already been accepted²⁵.

Religious scholars have discussed a number of situations that would allow an individual to be excused from performing congregational prayers including Friday prayers and *hajj* congregations. It is also quoted that Friday congregations were excused during heavy rain as reported by Imam *Bukhari* and Muslim, that *Abdullah ibn Abbas* (RA) ordered the one making the call to prayer to add the following line in the call for prayers. " (Pray in your own homes)²⁶.

Also quoted in *Sahih Muslim* Hadith No. 1281 and *ibn Maja* Hadith No. 936 in case of rain to pray at home. *Nafi* reported:

Ibn Umar made the call to prayer at Dajnan (a place between Makkah and Madinah). Then he announced: Offer prayer in your dwellings: He then narrated a tradition from the messenger of Allah ﷺ. He used to command an announcer who made the call to prayer. He then announced: Pray in your dwellings on a cold or rainy night during journey. *Abu Dawud* said: This tradition has been narrated by *Hammad ibn Salamah* from *Ayyub and Ubaid Allah*. In his version he added: During journey on a cold or a rainy night²⁷. Prophet (ﷺ) Muhammad also said, evade a [transmissible] ailment the way a person flees from a lion²⁸. Therefore, taking precautions to avoid the spread of infectious disease is something prescribed in Islam.

The teachings of Prophet (ﷺ) also exempt Muslims from holding congregational prayers when there are chances of some harm such as rain. It was narrated that *ibn Abbas*

said to the caller of prayer on a very rainy day: 'Do not say 'come to prayer' but rather say 'pray in your houses'. Some people were amazed, so he replied to them: 'Are you amazed by what I told? An individual better than me said the same [referring to the Messenger (ﷺ)]²⁹. "... and one should run away from the leper as one runs away from a lion³⁰."

Physical distancing was described in a Hadith of the Prophet (ﷺ) The Prophet (ﷺ) commanded to remain 6 feet away from an infected person (leper). (Masnad Ahmed, 7764).

In *Sahih Bukhari* Hadith No. 817 and *Sahih Muslim* Hadith No. 5923, the Prophet (ﷺ) prohibited the faithful to attend mosques after eating onion or garlic, the smell of which creates unpleasant feelings for the fellow faithful³¹.

Islam places a high importance on human safety especially in situations that can adversely affect and threaten our lives. Islam has set some specific guidelines for dealing with emergencies such as a disease outbreak. This emergency situation allows individuals, and the public, to take certain precautions as provided by the following Islamic legal maxim:

الضرورات تبيح المحظورات

"Emergencies permit the unlawful."

When there is a clash between a benefit (*maslahah*) and a harm (*mafsadah*), avoiding the harm (*mafsadah*) is prioritized³².

Allama shaami (RA) said "Anyone who can cause a harm to others in congregation should stay away from Friday congregation³³".

Islam Does Not Create Unnecessary Hardship

One of the major objectives of Islamic Law is the goal of bringing about ease upon humans

and avoiding hardship for them while maintaining positive results for all. It provides a comprehensive guideline for various aspects of life and make the lives of the people easy. There are a myriad of goals, such as mercy, justice, equity, balance and so forth. Within the context of meeting those goals, Allah, in His Mercy and Wisdom, has laid down a law for humans that provides ease for them and is free of any unwarranted hardships. Numerous hadiths and Quranic verses emphasize the importance of this very important principle.

The Quran in various verses emphasizes this very important feature of Islam. For example, Allah says:

"لَا يُكَلِّفُ اللَّهُ نَفْسًا إِلَّا وُسْعَهَا لَهَا مَا كَسَبَتْ وَعَلَيْهَا مَا اكْتَسَبَتْ..."
 "Allah burdens not a person beyond his scope. He gets reward for that (good) which he has earned, and he is punished for that (evil) which he has earned"³⁴.

"يُرِيدُ اللَّهُ بِكُمُ الْيُسْرَ وَلَا يُرِيدُ بِكُمُ الْعُسْرَ..."

"Allah intends for you ease, and He does not want to make things difficult for you"³⁵.

This important Islamic principle is described in various hadiths.

Hudhayfah reported:

The messenger of Allah, peace and blessings be upon him, said,

"It is not befitting for a believer to humiliate himself." They said, "How does he humiliate himself?" The Prophet said, "He confronts a trial he cannot endure"³⁶.

Mu'adh ibn. Jabal reported: The messenger of Allah (May peace be upon him) combined in the expedition to *Tabuk* the noon prayer with the afternoon prayer and the sunset prayer with the 'Isha' prayer. He (one of the narrators) said: What prompted him to do that? He (*Mu'adh*) replied that he (the Prophet) wanted that his Ummah should not be put to (unnecessary) hardship³⁷.

The basic principles of Islamic teachings are not to create difficulties rather to make facilitations and to remain optimistic rather than pessimistic.

Anas ibn Malik narrated:

The Prophet said, facilitate things to people (concerning religious matters), and do not make it hard for them and give them good tidings and do not make them run away (from Islam)"³⁸.

Conclusions

The Glorious Quran, Hadiths and the opinions of Muslim scholar empowers the state to temporarily restrict religious congregations including Friday prayers, the *Hajj* and *Umrah*. The postponement of *Hajj* and *Umrah* and other congregations which are considered super-spreader events of the COVID-19 pandemic, is not obviating our trust in Allah, but rather it is in accordance with the teachings of revealed knowledge, the practice of the Prophet and his companions. If a faithful individually, and as a society collectively, surrender to the will of almighty Allah, relief will come our way in unexpected ways and means beyond our imagination. When we follow the footsteps of our Prophet and mend our lives according to his teachings and have firm belief in almighty Allah, then all evil effects of disease and disaster will be mitigated.

"إِنَّهُ لَيْسَ لَهُ سُلْطَانٌ عَلَى الَّذِينَ آمَنُوا وَعَلَىٰ رَبِّهِمْ يَتَوَكَّلُونَ"

"Indeed, there is for him no authority over those who have believed and rely upon their Lord"³⁹.

One must strive his level best, submit to the Lord and then leave the sequel to Almighty as He stated in the Quran:

"سَنَّةٌ مِّن قَدِّ أَرْسَلْنَا قَبْلَكَ مِنْ رُّسُلِنَا وَلَا تَجِدُ لِسُنَّتِنَا تَحْوِيلًا"

“That is Our established way for those We had sent before you of Our messengers; and you will not find in Our way any alteration⁴⁰”.

The faithful Muslim should first understand the threats of the pandemic on our lives, health, livelihoods and socio-economic wellbeing. And strive to obey the SOP laid by the public health stewardship which is founded on good science and data to control, contain and eventually eliminate the COVID-19 pandemic.

The specific guidelines described by the Muslim physicians in collaboration with the religious scholars should be evidence based and according to best practices;

“وَالَّذِينَ جَاءَهُمْ فِينَا لِنَهْدِيَهُمْ سُبُلَنَا وَإِنَّ اللَّهَ لَمَعَ الْمُحْسِنِينَ”

“And those who strive for Us - We will surely guide them to Our ways. And indeed, Allah is with the doers of good⁴¹”.

“...فَاسْأَلُوا أَهْلَ الذِّكْرِ إِنْ كُنْتُمْ لَا تَعْلَمُونَ”

“So, ask those who have knowledge, if you do not know⁴²”.

And Islam also empowers the relevant authorities to implement precautionary and preventive measures to safeguard the individual and societal well-being. Any form of advisories issued by the healthcare authorities must be observed by everyone. This is in line with the Islamic Principle; “A leader’s decision is based on the welfare of his people⁴³”.

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37. Sahih Muslim Hadith No. 1197
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39. Glorious Quran, 16:99
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SCARCE VITAL RESOURCES IN THE COVID-19 PANDEMIC: AN ISLAMIC VIEW

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Abstract

The COVID-19 pandemic has caused an unprecedented challenge for the provision of critical care to the patients. The difficulties in the provision of personal protective equipment (PPE) for the health care providers posed a legal risk for the health system and a regulatory risk for the physicians. Intensive care doctors were facing overwhelming decisions about who should be provided with a ventilator. The ethical implications of scarce resources allocation are very challenging in this current pandemic. During the process of allocating resources, physicians are prioritizing those most likely to survive over those with remote chances of survival.

Keywords: COVID-19, Medical ethics, Scarce Critical Resources, Personal Protection Equipment.

Introduction

The Coronavirus Disease 2019 (COVID-19) pandemic raised many ethical challenges for doctors delivering healthcare to their patients. Pandemics can stretch and overwhelm even the most well-resourced health systems. Health care workers on the front line often feel the burden of the emergency response. Ensuring their safety, and their mental and physical wellbeing is of paramount importance¹.

In the circumstances where not everyone can be treated, difficult ethical decisions will be made. Several questions have been raised: can some patients be prioritized over others? How should a doctor decide on which patients to treat? Can treatment be withdrawn from patients who are currently being treated, but are not responding, in order to offer treatment to those who may have a better chance of benefiting?².

Difficulties inevitably arise during a pandemic, in the provision of resources for both patients and staff, especially in the case of a contagious risk such as in COVID-19³.

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Personal Protective Equipment

The worldwide shortage of personal protective equipment (PPE) is of great concern to health services and healthcare workers (4). Many countries reported low supplies of vital PPE for frontline workers, raising the question - what are a doctor's obligations to treat patients, in the circumstances that present a high risk of infection, and when their own safety, as well as the safety of their family, is being put at increased risk?².

Authorities should provide PPE to doctors. But what if they don't? Should doctors violate their Hippocratic oath in this situation and refuse to treat infected patients? No doubt doctors will be endangering themselves in this situation, but should they do their duty regardless of the consequences?.

If the health system becomes overwhelmed, doctors will be responsible for making and implementing these agonizing decisions, and they need support and clear guidance to help them to do so. They also need to ensure that these decisions are made in a fair, transparent, and consistent way. Similarly, patients have a right to know that decisions that affect them will be fair, lawful and based on the best available evidence².

Many organizations that are appealing to the government agencies to provide sustainable supplies of PPE, are at the same time advising physicians not to put their own lives at risk.

With the media highlighting the issue, many governments acknowledged the shortage of PPE but changed the guidelines to suit the acute shortage^{5,6}. There was much criticism over this action, suggesting this was an erosion of many organizations⁶. It is the duty of the governments to provide adequate PPE to health care providers.

Alongside concerns for their personal safety, health-care workers were

anxious about passing the infection to their families. Health-care workers, unlike ventilators or wards, cannot be urgently manufactured or run at 100% occupancy for long periods⁴. In this pandemic, the health care providers are the most valuable asset for the society, and sacrificing clinician's life without proper PPE is probably considered an irresponsible act⁷. Islamically, it would be probably left to the discretion of the physician in each situation. Sadly, many physicians and other health care providers in Italy, UK, Egypt and elsewhere lost their lives.

Scarce Resources Allocation

The implications of scarce resources allocation are devastating. The demand for critical care in several areas of the world, like the northern region of Italy and New York were exceeding its supply. Intensive care doctors were facing overwhelming decisions about who should be provided with a ventilator, knowing the fact that those who are not admitted to the intensive care units will very likely die⁸.

The news that prioritization criteria were being applied in Italian hospitals during this current pandemic, sparked widespread controversy, aroused great resentment, and triggered an intense debate, at both public and institutional levels, about the right of every individual to access healthcare.

Since equals should be treated equally, it is unequal to treat unequals equally. Although there is a right for everyone to be treated, it is not feasible to ignore contingent medical and biological characteristics that, inevitably, make one patient different from the other. Prioritization does not mean that one life is more valuable than another, as all lives are equally valuable. But when resources are not enough to save all those in need, prioritization involves allocating resources such that they are

more likely to save the most lives⁸. Utilitarian principles should be the basis for such decision⁹.

Priority for limited resources should aim both at saving the most lives and at maximizing improvements in individuals' post-treatment length of life. Saving more lives and more years of life is a consensus value across expert reports¹⁰.

It is consistent both with utilitarian ethical perspectives that emphasize population outcomes and with non-utilitarian views that emphasize the paramount value of each human life¹¹. Physicians must deal with decisions about the allocation of scarce resources which may eventually cause severe moral distress¹². Withdrawing ventilators or ICU support from patients who arrived earlier to save those with better prognosis will be extremely psychologically traumatic for physicians and some doctors might refuse to do so. For patients with similar prognoses, equality should be invoked and operationalized through random allocation, such as a lottery, rather than a first-come, first-served allocation process⁹.

Islamic view

In response to the COVID-19 pandemic, three *Fatwas* (decrees) were issued by major Islamic Jurisprudence authorities. The first was issued on 28.03.2020 by the European Council for Fatwa and Research (ECFR) on managing scarce resources during this pandemic. It states: "Muslim physicians are committed to the regulations of the hospitals they work in. If the matter is assigned to the physicians, they must utilize medical, ethical and humanitarian standards. Withdrawal of life-saving equipment in order to treat a patient arriving later is not permitted. If the physician has no choice but to choose between two patients, then the

former is offered the ventilator, unless he is deemed futile; the one in need of urgent treatment over the one whose condition allows delay, and the patient whose successful treatment is more likely"¹³.

The second decree was issued by the Assembly of Muslim Jurists of America which stated that what is to be considered in prioritizing patients over others is the degree of need; so the one in greater need should be prioritized. If they have the same need, the one with a greater likelihood of recovery, based on clinical tools, should be given precedence. If such likelihood is equal, then those with the longer life expectancy should be given precedence. When applicable, service should be provided on a first come, first served basis. If all previous considerations do not give precedence to some over the others, resorting to lottery is a principle that is endorsed by Islam¹⁴.

The third recommendation was issued by The International Islamic *Fiqh* Academy which held a symposium on 16th April 2020 discussing the ethical implications of COVID-19 and stated that "Physicians should adhere to the medical and ethical standards. In case of excessive number of patients requiring ventilators with the lack of adequate devices, it is left to the discretion of the physician who prioritizes the one who deserves prioritization, and when they are equal, he resorts to lottery between patients"^{15,16}.

The Islamic law permits withdrawal of futile treatment on the basis of a clear medical decision by at least three physicians¹⁷. In futile cases, many *Fatwas* (decrees) stated that while life support treatment is permissible to stop, ancillary treatment including nutrition, hydration, pain control, and antibiotics should continue^{17,18}.

Conclusion

Hospital trusts, as employers, are under a range of duties to ensure the health and safety of their medical staff. This includes providing safe places and systems of medical care. In the situation where hospitals are overwhelmed with many patients requiring ventilation, clinicians have to consider the prioritization of patients who are most likely to survive over those with remote chances.

According to the International Islamic *Fiqh* Academy, the decision is left to the discretion of the physician who prioritizes the one who deserves prioritization, and when the patients are otherwise equal, he may resort to lottery.

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COVID-19 – ISLAMIC JURISPRUDENCE ON ISSUES RELATED TO THE COVID-19 PANDEMIC

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Abstract

In a span of three months, hundreds of thousands of people the world over have died due to the COVID-19 pandemic. It brought our social lives and our economies to a virtual halt. And just as with the virus, we have been bombarded by a pandemic of fake news which continues to exert its negative toll. This has led to feelings of confusion and helplessness. There have been many important questions asked. Fortunately, the overwhelming response by our leaders have been positive and productive. This paper reviews some of those questions. It should be noted that while the judicial rulings outlined are derived from the Islamic tradition, they have universal application. We must never lose sight of the Quranic teaching that every human life is sacred and that every human being is honored¹.

Keywords: COVID-19, pandemic, judicial, universal, Quranic

Introduction

Humanity is facing an extraordinary challenge. COVID-19 has demonstrated how interconnected we are, how fragile we are, how dependent we are and how easily we can succumb to fear and hopelessness. But at the same time, it has forced us to introspect, to collectively summon our recourses and to restore hope.

I was prompted to put these thoughts on paper because of the many questions posed to me, and of the many I asked of others. The questions were varied, and they are categorized for convenience according to two themes:

The first category relates to the *fatwa* or judicial rulings which we received regarding COVID-19: For example, people asked: “How are they arrived at?” “How credible are they?” “Who do we follow when they are in conflict with each other?” “Will we not be committing a sin if we close the mosques?” Is it incumbent upon me to follow the guidelines imposed by a secular government?”

The second category deals with questions about how we ought to cope with COVID-19, and they relate to psychological, social, physical, and spiritual issues.

It should be noted that these categories are separated for convenience only, because in reality they are all interconnected.

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FATWA or JUDICIAL RULINGS

Universal uniformity

When one reviews the *fatwa* of individual *Ulama'* (scholars) and that of National *Ulama'* Councils, what is remarkable is that the vast majority have offered a consistent picture. The *fatwa* of *Ulama'* from South Africa, Malaysia, Zambia, Saudi Arabia, France, Canada, Indonesia, Nigeria, Tunisia, United Kingdom, United States, Morocco, Egypt, Palestine, Ireland, Jordan, and Iran display a richness and uniformity in juristic reasoning.

While there are some dissenting voices, many of those have modulated their response in the light of the reality that is unfolding before our eyes.

Manner of Juristic Reasoning

Our *Ulama'* arrived at their rulings with a great deal of care, caution, and precision. They are guided by the Quran and *Sunnah*, and they obtained crucial information from specialists in different fields before they offered their *fatwa*. They view this as an enormous *amanah* or trust upon them by virtue of their knowledge and training and they do so as witnesses before Allah Almighty.

Juristic Tools Used

Let us review the legal tools or principles which our scholars used in shaping their deliberations. For the sake of brevity, I will only mention some of them. As stated earlier these principles are derived from the Quran and the *Sunnah*, and their objective is the welfare of humanity here and in the hereafter. They fall within the ambit of the *Maqasid Al-Shariah* or the Principles and Objectives of Islamic Jurisprudence, and the *Qawaid Al-Fiqhiyyah* or the Juristic Maxims in Islamic Jurisprudence.

There was compelling evidence from medical experts that COVID-19 was deadly, that at best it would take a year to eighteen months to produce a vaccine against it, and that it was vital to “flatten the curve” which would dampen its peak and so allow doctors and administrators the time to prepare for the expected burden of care that was anticipated.

It was predicted, and subsequently proven, that physical separation and distancing accompanied by vigorous measure of hygiene and quarantine would dampen the curve. It was also predicted that people with the virus who are symptom free or pre-symptomatic could spread the virus. As a case in point, the virus was introduced by 10 non-symptomatic healthy South Africans who had arrived from an affected country. They did not self-quarantine, and a few days later, more than a 1000 South Africans acquired it across the land.

At the time of writing, more people are dying in the United States and Italy, than in China, which was the initial epicenter. According to the World Health Organization, as of 11 July 2020, we have 12,627,364 cases and 563,348 deaths and these figures are expected to rise before they fall. This speaks to the extent and rapidity of its spread.

Our *Ulama'* acted swiftly on the basis of Islamic Jurisprudence and the compelling evidence before them. They advised that it is vital that we act in accordance with the dictates of our governments in keeping us as safe and secure as best as it is possible to do. The principles upon which they based their *fatwa* are numerous and varied. Perhaps the most important of which concern the preservation, promotion, and protection of life¹ and the principle of removing harm².

Another legal tool that our scholars used relates to the principle that dire circumstances render lawful that which under normal circumstances is unlawful³. This is a magnanimous dispensation for those confronted by compelling circumstances. It is further elaborated upon in a Prophetic teaching: “Allah loves those who accept His *rukhsa*, just as he loves those who accept his *azeema*”⁴. *Rukhsa* is a concession in law granted in compelling circumstances and *azeema* is the strict implementation of the law in normal circumstances. The understanding of this dispensation is crucial. Have we not felt guilty for not performing our salaah in the *masjid* because of the restrictions imposed by government in combatting the spread of Covid-19? That guilt is understandable. But it must be replaced by the knowledge that we have a merciful dispensation from Allah and that when we accept His *rukhsa* we are rewarded for it. We need to be reassured that by following the direction of our *Ulama*’ we act in accordance with the *Shariah* and not against it.

Let us discuss two final principles: We all are aware of the man who asked our Prophet (PBUH), whether he ought to tie his camel and trust in Allah or whether he should leave her untied and trust in Allah. He replied: “Tie your camel and trust in Allah”⁵. The lesson drawn from this is that there is no contradiction in exerting ourselves in seeking the best solution to our challenges while being reliant and trustful in Allah Almighty.

This principle is closely related to another teaching of our Prophet (SAW) when he said that for every disease created, there is a cure and that it is the duty of humanity to seek that cure⁶. One can conceive no greater stimulus for research than that!

Thus while humanity is confronted by an extraordinary challenge by COVID-

19, we have the tools to respond to that challenge: It is the responsibility of our scientists and health workers to seek the cure, it is the responsibility of our governments to support that effort and to support the most vulnerable amongst us, it is the responsibility of our faith leaders to remind us of our duties and responsibilities, and it is our responsibility to be firm in our faith and to be firm in the commitment to our shared humanity. God willing, together we will succeed.

PHYSICAL-PSYCHOLOGICAL-SOCIAL-SPIRITUAL ASPECTS

Let us now briefly move from the legal-ethical issues to the physical-social-psychological-spiritual questions posed. As stated earlier, the questions are categorized for convenience only and the guidelines offered are general in nature.

PHYSICAL

Sleep

It may be difficult to initiate sleep. However, try to establish a regular sleep-wake cycle as best as possible. Aim to get up at a particular time each morning regardless of how you slept the night before and continue with that pattern for several days. Over time, your sleep will become regular. Try not to catnap during the day, if you do, do not sleep for more than 30 minutes. Cut down on caffeine and reduce your fluid intake before sleep. Try to reduce behaviors which induce arousal. Restful sleep enhances the immune system⁷.

Exercise

This is particularly important, especially when in lockdown. If you had not exercised before, now is a good time to begin, but do so slowly and increase the tempo gradually. Simple stretching is a good start. Always exercise at your level of tolerance. If

need be, get advice from your health practitioner. Amongst the many benefits of exercise is the release of several neurotransmitters which have the effect of lifting the mood.

Diet

Ensure a balanced diet. This will have the nutrients we need to bolster our immunity. There is a real risk for weight gain when in lockdown. Be particularly cautious about that. Remember the universal Quraanic advice:

.. وَكُلُوا وَاشْرَبُوا وَلَا تُسْرِفُوا إِنَّهُ لَا يُحِبُّ الْمُسْرِفِينَ "

"Eat and drink, but not to excess"⁸.

Hygiene

Be particularly mindful of avoiding infection by practicing good hygiene. Guidelines are available on the WHO website.

Sunlight

Try to get exposure to (limited) sunlight if you are confined indoors because of the Vitamin D it produces. Vitamin D has a vital role in enhancing our immune response⁹.

Symptoms of COVID

Common symptoms: Fever, dry cough, and tiredness. Less common symptoms: Loss of taste or smell, diarrhea, headaches, rash, discoloration of fingers or toes, aches and pains, and sore throat. Severe symptoms: Difficulty breathing, chest pain or pressure, and loss of speech. Most people who fall ill will have mild to moderate symptoms, and they will recover without specific treatment. And many who test positive are free of symptoms¹⁰.

PSYCHOLOGICAL

It is normal to be anxious and fearful in these times. However, these uncomfortable feelings will come and go. If need be, discuss them with your

family or friends. The key is to balance fear with hope. Duaa (supplication to Allah) and *dhikr* (remembrance of Allah) are crucial tools which will relieve distress and grant comfort. If symptoms of depression and anxiety persist, and if they interfere with one's functioning, then please seek help from a health care professional.

Children

Children must be kept in the loop. One must explain the reasons for a lockdown, for physical distancing, and for meticulous hand washing etc. - and one must do so in a manner they understand. Clearly, how one addresses a pre-teen would be different from how one addresses a 4-year-old. They must be encouraged to ask questions and ventilate their feelings. These interactions will instill hope because they will be viewed as being proactive and protective. If there is no communication children will sense the danger, which they will internalize. Clear communication, comfort and support is crucial.

Routine

Prepare a routine for all, particularly when in lockdown. There must be times for work, for fun times and for prayer. The key is to have a balanced life, and this shared activity also offers a semblance of comfort and balance. Routine also provides a sense of order. It is wise to dedicate a private space for all, but if that is not possible, family members can have their turn for a limited time in a designated area. Remember, nerves will be frayed. This is a time when we must exercise patience and provide comfort. It is a wonderful opportunity to connect with each other.

Pessimism

We must guard against pessimism. Allah Almighty reminds us to counter it

by remembering His Mercy¹¹. Just as we consciously cleanse our hands with soap and water, so must we consciously cleanse nihilistic thoughts from our minds.

Self-monitor

If you are under care for a particular disorder, please be vigilant in keeping up with your management plans. You will know your condition best - a clue for deterioration is a worsening of your symptoms which might be accompanied by sustained changes in your normal sleep, appetite, and energy patterns. If there is a deterioration in your personal, occupational, or social functioning, please get help

SOCIAL

We will all have to acquire and adapt to new social habits very quickly.

Hygiene

It is useful to practice these habits with children. This can be fun. Using an elbow bump instead of a handshake; opening doors with a closed fist, or with the hips if possible; learn to sanitize; practice physical distancing; wear appropriate protection, especially when coughing or sneezing etc.

Control exposure to social and other media

While it is crucial to be in contact via social media with family, friends, neighbours and organizations, this must be balanced. Determine how long and how often you will connect with others. Beware of fake media because it is too toxic. There have been many instances of people who denied the existence of the virus, and who succumbed to it because they did not protect themselves or because they did not seek help in time. Many people were killed because the disorder was wrongly attributed to a particular group, and others died

because of ingesting unproven “cures”. All of these tragedies, and others, stem from the consequences of fake media.

Help

Try to be of help to family, friends, neighbours and strangers. It is our collective responsibility to assist all of Allah Almighty’s creation regardless of race, colour or creed. We are all in it together. There has been a universal outpouring of support and assistance by humanitarian groups across the globe. If possible, assist such organizations financially. But above all, be safe.

SPIRITUAL

Is it not true that there are moments in our lives when we pause and reflect upon our creation; or when we become overawed by the miracle of the human body; or by the satellite earth which constantly revolves around the sun at an exact speed and trajectory, and that if it were slightly off course, life would not be sustainable? And in times of drought, do we not become acutely aware of our dependence on water? This is *tafakkur*, or reflection upon the creation of Allah Almighty.

Now, particularly, is the time to practice *tafakkur*. For this will lead us to the realization of our dependence on our Creator. It will lead us to a profound sense of gratitude for what we have. It will lead us to the strengthening of our *imaan* (belief). And it is this which will grant us peace and comfort.

And just as Allah granted us resources to sustain life, so have we been granted the gifts of intellect and social and spiritual guidance through His Prophets.

How else can we grow spiritually? Our *Ulama*’ remind us that we must do *tilaawa* of the Quraan (recitation), to understand it, to practice it, to share it and to persevere with it. They advise that we practice *dhikr* of Allah (remembrance) in all circumstances,

that we increase in our prayers, that we give *sadaqah* (charity) and that we assist those in need. They advise that we pray and care for our parents, and if they have passed on, we pray for them and act on the good that they taught us. They advise that we introspect by practicing *ihitisaab*, or self-assessment. We must devote a few minutes each day by examining our acts of omission or of commission. If we have erred, we will have the time to correct ourselves. If we have succeeded, then we give thanks.

Our scholars reminded us also that we must remember our Prophet (SAW) often and that we must emulate his ways and his values. How did he supplicate and what was he like as a person?

This was one of his prayers:

“Our Lord, by Your Knowledge of the Unseen, and Your Power over Your creation, grant me life as You know life to hold good for me, and grant me death as You know death to hold good for me. Our Lord, I ask You for the fear of You in public and in private, and I ask You (for the ability to speak) in tranquility and in anger, and I ask You for frugality in wealth and in poverty, and I ask You for happiness which is never exhausted, and I ask You for pleasure which is never ending, and I ask You for contentment with Your decisions, and I ask for the finer life and death, and I ask for the pleasure of looking upon Your Face, and meeting You without ever having undergone great suffering, and without ever having been subjected to misleading temptations. Our Lord adorn us with the adornment of faith and make us guides who are rightly guided”¹².

Such was our Prophet (SAW)! He was constantly immersed in the contemplation of the Majesty of Allah and was always responsive to the affairs of society. His companions reported that of all men, he was the most generous, the most open hearted, the

most truthful, the most fulfilling of promise, the gentlest of temper, and the noblest towards his family. If people saw him unexpectedly they were awed by him and whoever was his friend loved him. He accepted the invitation of the poor and rich alike. He championed the cause of the needy, the orphan, the widow the enslaved and the oppressed. He protected animals and the environment. He was never abusive to anyone, and when he was insulted he did not respond, but when anyone else was insulted he would be greatly upset. He protected the rights of those with whom he differed. He argued against any form of racism and taught that the only difference between people was their *taqwa* (their conscious awareness of Allah Almighty). His objective was to promote the Oneness of Allah, and he never compromised with that goal. He understood that his mission was to live the values of the Quraan, and in so doing he shared it with the rest of humanity.

These are the values and actions to which we must consciously aspire.

There are two final Prophetic teachings which are important for us at this juncture:

The first is a prayer which he taught to be recited at a time of disaster: “To Allah we belong, and to Him is our return. O Allah You suffice me in disaster. So reward me for it with something which is good”¹³. This is a reminder that humanity faced disasters in the past, just as we are confronting in the present. May we respond to it with all our resources in the best way possible and may we do so with dignity. Finally, our Prophet (SAW) said that even if one knew that the world was going to end the next day, and that if one was going to plant a sapling, then one must plant it¹⁴. This speaks to the value of exertion and of never giving up hope.

Conclusion

COVID-19 is the decree or *qadaa* of Allah Almighty, just as the seeking of the cure is His decree. To that end, there are currently hundreds of ongoing clinical and research studies whose objective is to find the cure. This universal effort by health workers in the front line, in the laboratories and in the hospitals speak not only to their collective genius, but also to their common humanity.

It is crucial for us to act upon the *fatwa* of the major *Ulama'* organizations in our country and throughout the world. They acted swiftly in these life changing circumstances; they were mindful of the dangerous and rapidly changing facts on the ground; they considered the edicts of government; and they did so on the basis of the faith.

That it is our *amaana* or responsibility to protect ourselves physically, psychologically, socially, and spiritually.

And finally, that we are all on an unstoppable journey to our Creator and

how we travel on it will be a measure of our success. All Praise is due to Allah Almighty and we ask for his Protection and His Mercy.

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OPEN LETTER TO MUSLIM WORLD LEADERS AND RELIGIOUS SCHOLARS ON THE COVID-19 PANDEMIC

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The Muslim medical fraternity view with utmost concern the recent developments in Muslim majority countries *vis-à-vis* the religious viewpoints towards the fourth prong of the war strategy against the COVID-19 pandemic, namely, physical distancing, after the less controversial testing, contact tracing and isolation.

Muftī Taqi Usmani, a renowned religious scholar and former judge of the Federal *Sharī'ah* Court, representing several religious organizations said; “*In the present conditions, five daily prayers along with precautionary measures are essential*”¹.

Pakistan, the second most populous Muslim nation, has reversed it restrictions on congregational prayers in mosques, whilst stipulating that worshippers would maintain a 6-foot (2-meter) distance from each other instead of the usual Muslim practice of praying shoulder-to-shoulder and that mosque administrations would disinfect premises regularly².

It is reassuring to note that Indonesia with a Muslim population of 274 million, have advised Muslims to have their *suhūr* (pre-fast meal) and *iftār* (the fast breaking dinner), individually or with their families. The night prayers called *Tarāwīh* and the *Eid* prayers would not be permitted to be performed in congregation in the mosques and instead would be performed at home³.

Malaysia has had the misfortune, to have hosted the *Tablīgh Ijtimā`* (large gathering) in Kuala Lumpur from February 28 till March 01, 2020. The *Tablīgh* cluster has since become the single largest cohort of COVID-19 cases (40%) and contributed to 23% of COVID-19 deaths. And due to the grass roots appeal of the *Tablīgh* persuasion, the disease has spread to all the states in Malaysia, spawning five generational spread and multiple COVID-19 sub-clusters. It became the COVID-19 hot spot in South East Asia (SEA) and without exception has spread to all countries in the SEA region⁴.

Gleaning through our Islamic history, today’s pandemic is neither unusual nor unprecedented. In 218 AH (After *Hijrah*, post migration of the Prophet Mohammad from Makkah to Madīnah) or 839 CE (Christian Era), virtually every home in Egypt was infected by the plague. Many governors and leaders died during this epidemic. Ten years later the plague spread to Azerbaijan where the dead bodies were too plentiful spiralling shortages of kafan (shroud material) to cover bodies of the dead. Muslim historian, *Imāam* al-Dhahabī (1274-1348) described the plague as a human tragedy that had never been witnessed before and all the mosques were closed and no one prayed inside them.

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In the 14th century, the world suffered the Black Death. The pandemic epicenter of the Bubonic Plague was in Europe. It spread to the whole world resulting in 200 million deaths. The Italians then did not know the cause of the plague but they noted that it did not spread as much if healthy persons were kept separate from those who were sick. The sick were isolated for 40 days (*Quarantino* in Italian) and only allowed into the fold of society when they had fully recovered. Thus the term quarantine which is the premise for the third prong of the anti-COVID war strategy⁵.

During this period in 1349 CE (728 AH), Al-Maqrizī, a Muslim historian reported that the epidemic was so severe that the *adhān* (call to prayer) was stopped in the majority of districts and most of the mosques remained closed.

Therefore, FIMA appeal to all Muslim leaders and theologians to take cognizance of our history and to issue unequivocal *fatāwā* (religious edicts) to close all mosques from all forms of congregational prayers, whether it be for the five daily prayers, Friday prayers, *Tarāwīḥ* (night prayers during *Ramaḍān*) or the *Eid* prayers (including, in open spaces and parks).

In the event that there exist doubts as to the veracity of the directive issued by FIMA, Muslims are urged to refer to the writings of Ibn Ḥajar al-Asqalānī (1372-1449), the celebrated commentator of the *Ṣaḥīḥ al-Bukhārī*, the collection of authentic traditions of the prophet (peace be upon him). Despite the sadness of losing three daughters to the plague in Egypt in 1433 CE (812 AH), Ibn Ḥajar wrote a 400-page encyclopaedia on the Jurisprudence of Epidemics (*Fiqh al-Ṭā'ūn*).

In this masterpiece of treatise on epidemics, he discussed in great detail the famous *ḥadīth* (authentic saying) of the Prophet (peace be upon him):

"If you hear of an outbreak of plague in a land, do not enter it; but if the plague breaks

out in a place while you are in it, do not leave that place"⁶

The prophetic call for quarantine in the 7th century preceded the practice of *Quarantino* by at least 700 years!

The anti-COVID war strategy of physical distancing was also borne out in the historical accounts of the companions. `Amr ibn al-`Ās was the only commander of the Muslim army who survived the plague of Amwas in Palestine (638 CE/17 AH) which killed 25,000 Muslim soldiers⁷. The plague also claimed the lives of two of the most illustrious *Ṣaḥābah* (companions of the Prophet), namely, Abū Ubaiydah al-Jarrāḥ and Mu`ādh ibn Jabal. `Amr ibn al-`Ās, a Muslim statesman *par excellence*, directed his soldiers to break ranks and camp, and to distance themselves in various parts of the hills. This physical distancing and isolation helped to contain the plague, after which he undertook the exit strategy of allowing his soldiers to return to camp and to congregate in prayer and other activities. The following year in December 639 CE, he led the Muslim army towards the eventual conquest of Egypt.

An appeal is made to Muslim leaders and scholars to truly appreciate and embrace the legacy of Islamic history and to heed the *fatāwā* of our earlier *fuqahā'* (scholars of jurisprudence) who called for the closure of all the mosques and stopped the call to prayer in a valiant effort to prevent the spread of the killer plague.

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CHILDREN AND COVID-19: WHAT TO EXPECT?*Fahri OVALI**

Abstract

The new SARS-CoV-2 virus which has caused a deadly pandemic (COVID-19) affects all age groups, including children, but most of the childhood cases are mild and the mortality rate is low. There are various reasons why the disease is mild in children. The virus uses the angiotensin converting enzyme type 2 receptors on the cell surface to enter into the cell and these receptors are scarce in children. The response of the immune system of children to the virus is mild, which makes the final cytokine storm in the process of disease less dormant. Other viral infections in children may also limit the growth of SARS-CoV-2 virus. Fetal hemoglobin in young children may be protective. On the other hand, overprotection of infants by the parents, fewer outdoor activities and less travel expose children to less interaction with infected people, hence the virus load. Until now, materno-fetal vertical transmission of the virus has not been shown. Even infected mothers can breastfeed their infants, after taking all necessary precautions, because the virus has not been demonstrated in breastmilk. The clinical manifestations of the disease in children include dry cough, fever, myalgia and fatigue. There are some data that COVID-19 may be associated with Kawasaki disease. A history of an affected parent or close contact is important in the diagnosis. There are no specific laboratory findings. Since the number of severely affected patients is low, there are no evidence-based management strategies for these children and the treatment is mainly symptomatic. Drugs like hydroxychloroquine, azithromycin and lopinavir+ ritonavir may be used by expert advice. All childhood vaccines should be administered on time and should not be delayed. Psychological support for children, especially for adolescents is important and should not be underestimated. Since information on the disease is mounting every day, continuous updates are necessary.

Keywords: SARS-CoV-2, COVID-19, children, breastfeeding, vaccination

Introduction

The new SARS-CoV-2 virus, which has swept the world since December 2019 is a beta-Coronavirus and the disease which occurs with SARS-CoV-2 is called Coronavirus Disease-2019 (COVID-19)¹. Like other Coronaviruses, SARS-CoV-2 have a high rate of genetic mutations and recombinations, rendering them capable of causing diseases every year. SARS-CoV-2 infects all age groups, including newborns and children. Infected children comprised 2% of cases in China, 1.7 % of cases in the USA, 0.8% of cases in Spain, 1.2% of cases in Italy, and 1% of cases in Turkey^{2,3,4,5}. Only 1% of all cases were under 10 years. In Korea, 6.3% of all cases that tested positive for SARS-CoV-2 were children under 19 years⁶. As of July 15, 2020 there are over 13 600 000 confirmed cases globally, with more than 586 000 fatalities so far⁷.

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In a study of 2572 pediatric cases in the USA, 15% of these cases (398 cases) occurred in children < 1 year. There were 3 deaths among the pediatric cases². It is worth to remember that in the USA, there were 162 influenza-related deaths in children reported during this period⁸.

SARS-CoV-2 may be acquired through direct contact, as well as through droplets, aerosols or even fecal-oral route⁹. Transmission through family contact were detected in 56% of children with SARS-CoV-2 infection¹⁰. In our own series, 97% infected children had a family member positive for SARS-CoV-2. (unpublished data) The youngest of children was 30 hours of age and the oldest child was 18 years old¹¹.

Numerous studies have shown that the disease is generally milder in children and the mortality rate is much less than that in adults. In children, asymptomatic, mild and moderate cases account for 98% of disease¹².

The reason why SARS-CoV-2 infections in children are mild remains unknown but various reasons may be considered for this disparity. These are as follows:

Role of Angiotensin-Converting Enzyme 2 (ACE2): SARS-CoV-2 spike protein binds to the ACE2 receptor on the cell, which promotes internalization of the virus into the cells¹³. ACE2 receptors are present in the nasal mucosal cells, type II pneumocytes of the lung, lung parenchyma, intestine, kidney, blood vessels, monocytes, neutrophils and lymphocytes¹⁴. In the nasal epithelium, lower ACE2 expression could be helpful in decreasing acquisition of SARS-CoV-2 infection. However, ACE2 expression in the pulmonary epithelium is under different regulation¹⁵. SARS-CoV-2 binding to ACE2 downmodulates ACE2 expression which results in severe lung damage¹⁶. ACE converts Angiotensin I to Angiotensin II, which promotes vasoconstriction, inflammation and fibrosis. ACE2 cleaves Angiotensin II to angiotensin 1-7, which suppresses inflammation and fibrosis, as well as

inducing vasodilation. ACE2 is also protective against severe lung injury in children¹⁷. After cleavage, ACE2 is released into the plasma. The role of soluble ACE2 in neutralizing SARS-CoV-2 virus has been shown¹⁸.

Soluble ACE2 may help children to better counteract the virus. This could help them to fight against the virus but also let them to be unrecognized carriers. Decreasing ACE2 expression in the nasal epithelium may be a potential therapeutic approach to mitigate transmission of SARS-CoV-2¹⁹. Estrogens participate in the upregulation of ACE2 expression and this may explain the putative sex predisposition (i.e. male preponderance) of the virus²⁰.

Inflammatory responses: The immune system of children is different from adults. In the final stage of severe COVID-19 infection, cytokine storm appears, which may be associated with macrophage activation syndrome or hemophagocytosis. During this massive proinflammatory cytokine release, ferritin is increased, platelet count is decreased and erythrocyte sedimentation rate is increased¹². This response is less well developed in children. Respiratory symptoms such as cough and shortness of breath are less common than adults¹⁷. The number of leukocytes and lymphocytes are generally normal in children, possibly due to incomplete natural immunity of children¹².

In children, efficient T cells respond better to SARS-CoV-2²¹. With advancing years, continuous antigen stimulation and thymic involution lead to a shift in T cell subset distribution. This shift, along with older age is also associated with increasing proinflammatory cytokines and with increased susceptibility to cytokine storm^{22,23}. Because of differences in infectious history, children may use more favorable immunoglobulin isotypes or have improved antibody focused targeting to SARS-CoV-2²⁴.

In most severe cases secondary bacterial infection develop, which further

complicates the disease. The prognosis of these cases are more guarded. However, the mortality rate is almost similar in immunocompromised children²⁵.

Cross-immunity with other agents: Childhood is characterized by frequent viral infections of upper airways and lungs by viruses such as adenoviruses, rhinoviruses, influenza viruses, enteroviruses, and coronaviruses. These infections may limit the growth of SARS-CoV-2 by competition or viral interaction¹⁴.

Fetal hemoglobin: SARS-CoV-2 virus proteins attack the heme group on the β chain of hemoglobin and dissociates iron to form porphyrin²⁶. Decreased levels of hemoglobin lead to hypoxia. However, in the newborns, since the majority of hemoglobin is fetal hemoglobin (HbF), which consist of alpha and gamma chains; it may be protective against SARS-CoV-2²⁷.

Environmental factors: Children are generally overprotected by parents and have fewer outdoor activities and travel less, exposing them less to an infected person. Although direct evidence is lacking, lack of smoking and less exposure to air pollution in children may also contribute to the lower prevalence of SARS-CoV-2 infection in children. Nutritional status of children, rate of contact with sick adults in the community may also be effective. In hospitals, aerosolised medications, instrumentation to the airways such as intubation and endoscopic procedures may be potential foci for the transmission of the virus.

Although there is no sufficient data so far, not only symptomatic but also asymptomatic patients may also shed the virus and the role of children are essential in this context. Children who become infected with SARS-CoV-2 may have a larger viral load in the upper respiratory tract than in the lower respiratory tract^{28,29}. Extended shedding in nasal secretions may have considerable implications for communities where children stay together, such as schools, playgrounds etc²⁸. These asymptomatic or mildly symptomatic

children may play an important role in the spread of the virus. Preventive measures in children should be taken similar to those of adults. Social distancing should be practiced among children, as well as between children and elderly people or with people with chronic diseases.

Materno-fetal vertical transmission: Vertical transmission of SARS-CoV-2 from the infected pregnant woman to the fetus has not been shown so far. Viremia is seen in only 1% of COVID-19 cases, which implies that placental and fetal involvement might be quite rare³⁰. Until now, Polymerase Chain Reaction (PCR) findings of amniotic fluid and placenta of suspected fetuses have been negative³¹. In some newborns, specific anti-SARS-CoV-2- IgM has been shown but this is not a definitive evidence of intrauterine infection. IgM assays can be prone to false positive and false negative results, along with cross reactivity and testing challenges³². The sensitivity and specificity of IgM assays which are 70.2% and 96.2% respectively, are lower than those of PCR testing³³. It is well known that IgM testing in many viral infections is not alone sufficient enough for definitive diagnosis of the relevant diseases. Furthermore, the rapid decay of IgM levels within 14 days imply that high IgM levels might not represent a true infection. In some studies a higher rate of preterm birth among infected mothers is reported^{34,35}. Some data suggest that SARS-CoV-2 can be transmitted through the fecal-oral route⁸. Transmission of the virus is possible during vaginal delivery, by direct contamination of the infant by vaginal secretions or through the droplets of the infected mother in the immediate postpartum period.

Since all the pregnant women who had been infected were in their second or third trimesters at the time of infection, the transmission dynamics of the infection in early or mid-pregnancy is unknown. It should be remembered that the rate of transmission of rubella infection during pregnancy is higher in the first or second trimester, but not in the third trimester (36).

On the other hand, high fever may be a theoretical concern for the fetus during the organogenesis period in the first trimester and associated with increased risk of congenital anomalies or miscarriage. Seven pregnant women have been reported from Iran, presenting with severe COVID-19 disease. Their fetuses died in their latter second and third trimester. Three of the 7 women had stillbirth and 6 of their offspring (2 set of twins) died after birth³⁷. Another infected pregnant woman had miscarriage at the 19th week of gestation. Amniotic fluid and vaginal swabs were negative for SARS-CoV-2, as well as fetal lung, liver and thymus biopsies. Placental biopsy obtained immediately after delivery was positive for SARS-CoV-2³⁸.

Almost 6 months have passed since the pandemic began and the information on the transmission rates of the SARS-CoV-2 during the first and second trimester will be available in the following months.

Clinical manifestations: Common symptoms in children include dry cough, fever, myalgia and fatigue. Some patients may have few upper respiratory symptoms such as nasal congestion or runny nose and some others may have gastrointestinal symptoms such as abdominal discomfort, nausea, vomiting, abdominal pain and diarrhea. Fever duration is mostly 1-2 days (maximum 8 days). Lung computed tomography (CT) findings shows bilateral involvement in almost half of the cases and unilateral involvement in 20% of cases³⁹. In a report from Spain, common clinical findings were upper respiratory tract symptoms, followed by viral pneumonia, fever, gastroenteritis and vomiting. Four children out of 365 required mechanical ventilation. There were no fatalities³. In another study from Spain, 43% of patients were followed up as outpatients, 42.4% of hospitalized patients needed oxygen therapy and 36.4% of patients received antibiotics. Five percent of admitted children required intensive care and one infant with dilated cardiomyopathy and Hurler's syndrome died⁴⁰.

Children may have 5 distinct clinical presentations: Asymptomatic infection, mild, moderate, severe and critically severe infection⁴¹. The prevalence of severe or critical disease was 10.6% in children < 1 year; 7.3% between 1-5 years, and 4.2% between 1-5 years, decreasing to 3% between 16-17 years¹². In the USA, hospitalization rate was 1.6-2.5%, with no child requiring intensive care⁴². Children less than 1 year of age had the highest percentage of hospitalizations among pediatric patients⁴³. In Turkey, 50.4% of patients had mild disease, 0.8% had severe disease. Intensive care hospitalization rate was 4.27% and 80% of them were under 1 year of age⁵. Most of the children recover within 1-2 weeks⁴⁴. Most of the severe diseases and deaths reported in children occurred in those with comorbidities such as obesity, hydronephrosis, leukemia, diabetes. The overall death rate for SARS-CoV-2 infection is around 2.2%, but it is extremely rare in children⁴⁵. Olfactory dysfunction is a rare manifestation of the disease and is often reported in mild or asymptomatic cases and resolves in 7-10 days. American Academy of Otolaryngology-Head and Neck Surgery recommended the inclusion of sudden-onset olfactory dysfunction (loss of smell and taste) as a part of diagnostic criteria for COVID-19 disease⁴⁶.

Recently, there have been some reports linking COVID-19 to Kawasaki disease. The etiology of Kawasaki disease remains unknown but there are some strong data suggesting a viral etiology⁴⁷, including Coronavirus⁴⁸. In a recent report, the incidence of KD was 30-fold higher during the pandemic, than observed in the previous 5 years⁴⁹. Two of 10 children had a positive PCR test for SARS-CoV-2, whereas the remaining 8 children had a positive serology for SARS-CoV-2. In another report, a 6-month old infant with classical findings for Kawasaki Disease, also tested positive for COVID-19⁵⁰. She did not have respiratory symptoms, including cough, congestion or rhinorrhea. Since Kawasaki

Disease is a multisystem inflammatory disease and cytokine storm syndrome at the final stage of COVID-19 has a multisystem involvement, a common pathophysiologic pathway may be considered^{51,52}. If the child has persistent fever, manifestations of Kawasaki Disease should be sought.

Newborns commonly acquire the virus through contact with a proven case of COVID-19 (in most cases, the mother) and may go unnoticed. Diagnosis is confirmed by PCR testing⁵³. There is no specific clinical finding in the newborns. She/he may have fever or not; and may have respiratory symptoms such as cough, tachypnea, apnea, grunting, nasal flaring, and tachycardia as well as lethargy, vomiting, diarrhea and abdominal distention^{54,55}. The newborn is considered positive if any of the following is present: a) Positive PCR for SARS-CoV-2 in respiratory tract or blood samples b) High homology of viral gene sequences of the samples from the respiratory tract or blood to the COVID-19 sequence⁵³. In preterms who are considered to have immune deficiency, or in infants with congenital heart disease, bronchopulmonary dysplasia, respiratory tract anomalies, severe malnutrition or anemia, the clinical findings should be evaluated more cautiously¹.

Diagnosis: The majority of children do not undergo diagnostic investigations because most of them are asymptomatic or mildly symptomatic. History of exposure to a suspected or proven case within the last 2 weeks should be investigated. In most cases, this is someone in the family. Personal history should include the presence of fever, respiratory and gastrointestinal symptoms. There are no specific laboratory findings. White blood cells may be normal or elevated and lymphocytes may be decreased. Lymphopenia was detected only in 3.5% of children⁵⁶. Mild thrombocytopenia, mild elevations of creatine kinase, alkaline phosphatase, alanine aminotransferase, aspartate aminotransferase and lactate dehydrogenase may be detected. In some

cases procalcitonin and IL-6 levels are increased⁵⁷. The virus may be isolated by PCR from the upper respiratory tract, endotracheal aspirate, blood or feces. In mild cases, the viral load is lower compared to those having severe infection. Lung screening should be done to detect any infiltration. Ground-glass opacity is seen in a third of children with proven infection⁵⁸. Lung CT should be obtained only in suspected cases since substantial amount of radiation during CT may have some detrimental effects.

Management: Management strategies do not exist for children because of limited number of pediatric patients. Mild or asymptomatic nature of COVID-19 disease in children raises the question whether children should be administered antiviral and immunomodulatory treatment. Maintaining personal hygiene and taking all infection control measures, including wearing masks, observing social distance and strict hand hygiene are paramount. Supportive treatment including hemodynamic stabilization, fluid and electrolyte management, oxygen therapy, nutritional support, and symptomatic treatment of fever is essential. If needed, antibiotics may be used for bacterial superinfections.

Respiratory support should be done with non-invasive methods, but since these procedures may cause aerosolization, specific precautions should be taken. In severe cases, conventional mechanical ventilation, high frequency ventilation or nitric oxide therapies may be used. In critical cases, extracorporeal membrane oxygenation (ECMO) may be helpful.

Although there is not enough evidence, in older children and in children with severe pulmonary findings, hydroxychloroquine, azithromycin and lopinavir+ritonavir may be used by expert advice. Hydroxychloroquine increases the endosomal pH, inhibiting virus-cell fusion and inhibits the entry of SARS-CoV-2 virus into the cells. It may also have an immunomodulating effect⁵⁹. Mechanism of action

requires that hydroxychloroquine should to be given at the beginning of the infection. The possibility of drug toxicity including QT prolongation and retinal toxicity especially in individuals with epilepsy, porphyria, myasthenia gravis and glucose-6-phosphate dehydrogenase (G6PD) deficiency should be considered and caution should be preserved⁶⁰. There are no trials on the effects and adverse effects of hydroxychloroquine in children. Remdesivir and Lopinavir-ritonavir treatment have little or no role in the treatment of children and should be considered as compassionate treatment, after careful consideration of the risk-benefit ratio and technical issues^{5,61}. Favipiravir is an RNA polymerase inhibitor and there is no dosing recommendation for pediatric patients⁵.

Final stage of the severe disease is characterized by cytokine storm with extensive tissue damage and multi-organ failure. The main cytokine responsible for this syndrome is interleukin-6 (IL-6). Therefore, IL-6 blockade or immunosuppression with corticosteroids can be considered⁶². However, available literature does not encourage the routine use of corticosteroids in SARS-CoV-2 infection⁶³. Tocilizumab is recombinant humanized monoclonal antibody which binds to IL-6 receptor and blocks its function⁶⁴. Other treatment options such as convalescent plasma and anakinra are under investigation^{65,66}. During the influenza season when differential diagnosis is difficult, oseltamivir may be considered. Some reports focus on the association of vitamin D and SARS-CoV-2 infection. Mortalities due to COVID-19 are higher in higher latitudes, where there is less sunshine⁶⁷.

Vitamin D reduces the production of proinflammatory cytokines, which could explain its use in COVID-19 disease⁶⁸. However, routine administration of vitamin D to infected children is not recommended unless vitamin D levels are low.

Discharge from the hospital is recommended when the body temperature remains normal for three consecutive days, respiratory symptoms are improved and viral tests are negative⁶⁹.

Breastfeeding: Current evidence suggests that breast milk does not contain the SARS-CoV-2 RNA^{70,71}. If the PCR test is negative, the infant may be breastfed safely. Academy of Breastfeeding Medicine and World Health Organization (WHO) recommends breastfeeding even in infected mothers after taking all possible precautions^{70,72}. However, the mother should not hug or kiss the infant. If the mother and infant have to stay together, there should be at least 2 metres between the beds. The risks and benefits of separation of the infant from the mother and consequences of not starting, suspending or continuing breastfeeding should be shared with the family and a shared decision making should be done and documented⁷³. If the mother is too sick to care for the newborn, the infant can be managed separately and fed fresh expressed breast milk. This milk does not need to be pasteurized⁷⁴. Expressed breast milk may be given to the infant by an uninfected caregiver, in most cases by the father. This guidance may change as knowledge evolves. The indispensable right of a newborn infant to receive breastmilk should not be underestimated.

Vaccination during infection: All childhood vaccines should be given in accordance with the recommendations of the WHO or Ministry of Health of the country. COVID-19 is not a contraindication for vaccination or for deferral of vaccines. The prevalence of many childhood diseases including diphtheria, tetanus, poliomyelitis, measles, rubella, mumps, meningitis, pneumonia and tuberculosis have been reduced dramatically due to universal vaccination of children. Any gap in this program may lead to a re-activation of these diseases, which might cost the lives of millions of children. Even varicella, hepatitis, MMR or

poliomyelitis vaccines have been proposed to be protective against COVID-19^{75,76}.

Psychological support: There is a wealth of information on the internet and on the social media regarding COVID-19 disease. However, most people are perplexed by contradictory statements from different sources. Therefore, sound knowledge should be given to the family and children. The information in the social media should be interpreted cautiously.

Many countries have imposed temporary curfews and home confinement. The effects of closing schools and home confinement on children may be troublesome. Young people love freedom and hate restraints. Therefore, they should be supported during home confinement. Children may be exposed to longer screen time, irregular sleep, less healthy diets (i.e. gaining weight), loss of peer interaction and loss of cardiovascular fitness⁷⁷. Prolonged duration and fears of infection, frustration, boredom, inadequate flow of information, lack of personal contact with peers, classmates and teachers may be confounding. Family financial loss may complicate the problem further⁷⁸. The risk of post-traumatic stress disorder is also increased almost 4-fold⁷⁹. Many schools and institutes have switched to online education through the internet but dependence on technological resources may induce some adaptation problems and may aggravate “technology addiction”. Extra costs of internet and exposure to improper content may also incur problems.

In economically disadvantaged families, children may be left unsupervised as parents seek work or have to look for social welfare resources to replace their income. Some children may live in abusive environments where safety was only found at school. The trauma of dealing with a seriously ill parent or a parent’s death may be exacerbated by the shock and trauma of having to be placed into foster care or other unfamiliar care situations^{76,80}. If the newborn infant is separated from the mother, the mother and the whole family may suffer from anxiety and stress.

Psychologists may provide online services to cope with mental and psychological health issues. Close and open communication with children is essential to identify psychological issues and comforting children. Pediatricians and social workers and volunteers can also help families to overcome difficulties and protect them. Parents are important role models for children and good parenting skills become crucial for children who are confined at home. Alleviating the anxiety and panic of children is important and this can be overcome by incorporating children to daily household activities, improving self-sufficiency skills. Physical and mental impacts of this pandemic on children should be kept minimal⁸¹.

Health staff working with COVID-19 cases under the fear of contracting the infection may develop various psychological manifestations such as anxiety, depression, fatigue and burnout and they may also need psychological support. Physicians and nurses who are themselves parents, as well as their children may need extra support. These personnel should be provided with adequate quality PPE. Clinicians may disagree with the decisions taken by their superiors. There may be conflict between what is best for the population and what is best for an individual patient or clinician. Some parents may not be present at their child’s side, when they need them most, because of their personal COVID-19 status. At this point, the clinicians may be required to fill in the “gap”. Online communication with video or mobile phone may help at this point.

Since there are many unknowns regarding this new virus and new pandemic, common protocols developed by government bodies may help physicians to manage patients; i.e. when and how to screen, where and when to admit and how to treat. In countries where this approach is not possible, a great deal of controversy and frustration will evolve among physicians. Therefore, developing a collaborative approach would provide

uniform messages and help patients and physicians as well.

Ethical issues: In the adult population, triage of patients and allocation of ventilators to those who need them most is an important ethical issue and debated vigorously in many countries. However, among children, since few patients would require ventilation, this not a big problem. Redeployment of skilled pediatric personnel to adult medicine have been done in many institutions including our hospital. Not surprisingly, these pediatric personnel (pediatric specialists, residents and fellows) were in demand, because they worked more diligently than many other people. However, although solidarity is encouraged, it should be kept in mind that this redeployment may result in under-care of children in the pediatric hospital. On the other hand, pediatric intensive care beds may be converted to adult intensive care beds and this may influence the community hospitals who transfer their patients to these hospitals, leading to difficult triage decisions. In the midst of a global crisis, a careful balance between medical capabilities and community values should be observed.

Conclusion

COVID-19 is a new disease, that was recently declared as a pandemic, with many unknown issues. The information on the transmission dynamics and long-term prognosis limited on this previously unknown disease. The fact that children might be silent facilitators of transmission of the disease should not be underestimated. With emerging evidence, pathophysiology and management options may change rapidly. Information on vertical transmission of the disease and on clinical manifestations in the newborns and children is expected to accumulate in the foreseeable future. Since children are a special group, they should be included in clinical trials on the characteristics of the disease, serosurveys, transmissibility studies and

vaccine trials⁸². Every day, new research is emerging and continuous updates are important to implement current knowledge in the management of COVID-19 in infants and children.

CONFLICT OF INTEREST

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COVID-19 EFFECT ON PREGNANCY OUTCOMES AND COMPLICATIONS

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Abstract

Coronavirus disease 2019 (COVID-19) is an emerging disease with a rapid increase in cases and death since its identification.

There is a paucity data about COVID-19 during pregnancy. There have been several published studies but the numbers in the studies are small. Most of these have focused on the effects of the severity of COVID-19 in pregnant women, on pregnancy outcomes and the possibility of vertical transmission. This remains a contentious area of study with many areas of conflicts and controversies.

Keywords: COVID-19, pregnancy outcomes, vertical transmission, and delivery.

Pregnancy is a difficult and precarious period in any women's life, as many physiological and immunological changes occur in her body systems and organs as mentioned in the Glorious Qur'an:

"وَوَضَّيْنَا الْإِنْسَانَ بِيَدَيْهِ حَمَلَةً أُمُّهُ وَهَنًا عَلَيَّ وَهَنٌ .."

"And we have enjoined on man (to be good) to his parents: in travail upon travail did his mother bear him..."¹.

These changes make the pregnant mother more vulnerable to infection and has been classified as one of the high risk populations upon exposure to SARS-Cov-2. Physical and psychological implications in the gravid women were anticipated at the beginning of the pandemic.

Studies have shown that pregnant women² have comparable clinical courses and outcomes with reproductive aged, non-pregnant women when infected with COVID-19, keeping in mind that pregnant women are mostly of the young-age group <40 years. Most of the infected women will have only mild to moderate flu-like symptoms.

In the first trimester, pregnant women infected with COVID-19 are at higher risk of miscarriage in severe cases, but no increased risk of congenital anomalies³ have been reported.

Infected pregnant women are at higher risk to have severe disease and ICU admission if they are in 3rd trimester, emphasizing the especially importance of social distancing from 28 weeks⁴.

Pregnant women from Black and Asian ethnicity are more likely than other women to be admitted to hospital for COVID-19, specially if they have obesity or are overweight, and have pre-existing medical problems, such as high blood pressure and diabetes⁵.

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Preterm birth have been reported in babies born to mothers who tested positive for COVID-19 late in their pregnancy^{4,6}.

Neonatal intensive care unit (NICU) admissions, if delivered at gestational age > 37 weeks are similar for non-COVID or mild to moderate COVID-19 positive pregnancies^{4,6}.

Delivery by caesarean section is increased in severe COVID-19 positive pregnancies as respiratory support is often required. Spinal (regional) anesthesia is preferred unless patient needs intubation⁷, otherwise COVID-19 infection is not an indication for caesarean section.

Early studies indicate that mother to child transmission of COVID-19 during pregnancy is unlikely, but recent studies, indicate that vertical transmission may occur. However after birth, a newborn may have been infected after being in close contact with the infected mum or other infected persons^{4,8}.

A small number of babies have tested positive for COVID-19 shortly after birth, but it is not known when and how they acquired the virus.

As pregnancy is a hyper-coagulable state, and it has been found that people admitted to hospitals with COVID-19 are complicated with hypercoagulability, there have been recommendations that any pregnant women admitted to hospital with COVID-19 infection should receive prophylactic low-molecular weight heparin after being discharged and to keep active and use elastic stockings⁹.

Breastfeeding is not contraindicated in COVID-19 infected mother as the milk doesn't transmit the virus, but the

process of caring and breastfeeding can lead to transmission of the virus, if recommendations for proper protection and prevention are not strictly followed.

Wherever possible, expressed breast milk should be fed to the infant by a healthy care giver who does not have COVID-19, who is not at high-risk for severe illness from COVID-19 and is living in the same home¹⁰⁻¹¹.

Conclusion

It is crucial to note that new information continues to unfold about COVID-19 in pregnancy as more and larger studies are undertaken. Therefore, practitioners have to keep themselves abreast of the new knowledge and the best practices as alluded to by fraternity at both global and national levels, within the context of one's individual patient's needs and preferences.

It remains our duty to provide respectful care despite the changes we need to make in our everyday practice during the COVID-19 pandemic.

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ACUTE CARE SURGERY PREPAREDNESS FOR COVID-19 PANDEMIC: AN EXPERIENCE FROM QATAR

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Abstract

Most cases of COVID-19 pandemic are now being reported outside Wuhan, China where the first case was detected. It is highly contagious and has engulfed the world in a short span of time. The burden on healthcare resources to care for the public has mounted multifold due to its fast transmission. Non-operative management of surgical diseases is preferred in COVID-19 confirmed or suspected patients. Personal protective equipment (PPE) should be utilized to protect the healthcare professionals' safety. The Ministry of Public Health of Qatar has launched a series of virtual health care facilities to manage patient appointments, medical consultation, sick leave and drug distribution to avoid hospitalization and to minimize the spread of COVID-19 infection to non-emergency patients by dialing hotline number to provide appropriate services. We would like to share and disseminate the experiences at the Acute Care Surgery (ACS) section, Hamad Medical Corporation (HMC) in Doha, Qatar. Ethical considerations, social distancing and optimum utilization of the available resources are essential to overcome the pandemic situation

Keywords: COVID-19, emergency surgery, SARS-Cov-2, acute care surgery.

On February 29, 2020, our country announced the recording of its first COVID-19 case¹, since then the number of confirmed cases has risen to 47,207 cases after running 196,411 tests, at the time of this written article. As part of the response to the pandemic, a protocol was devised by our team at Hamad Medical Corporation (HMC), Doha, Qatar.

The disease causes a respiratory illness with symptoms such as cough, fever, and difficulty in breathing. It spreads mainly through contact with the diseased person when he/she coughs or sneeze and can be prevented taking precautions like washing hands frequently, avoiding touching the face and avoiding close contact with people suffering from it². The novel coronavirus (SARS-CoV-2) also shows evidence of causing gastrointestinal symptoms such as diarrhea, nausea, vomiting, and abdominal discomfort and has the potential to be transmitted by the fecal-oral route. The SARS coronavirus showed up in the stool specimens, after the patients have been discharged from the hospital³.

We would like to share our experience in the Acute Care Surgery Section in dealing with the surgical services during COVID-19 as an example of a Middle Eastern experience, in managing this pandemic. Our strategy is anticipatory and preemptive. In addition to the general strategies implemented during this pandemic crisis, we undertook additional measures, with the aim of limiting cross contamination between COVID-19 positive and negative cases, utilizing a well-established protocol and pathway for managing surgical emergencies during this crisis.

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The Acute Care Surgery division at Hamad Medical Corporation provides emergency tertiary general surgical services. To ensure the safety of the staff and to allow for continual care for patients we have reduced the number of staff attending duties physically in-hospital to try and mitigate the risk of exposure. We have restructured the manpower and staggered the staff into four teams (On-call, Post-call, Pre-call, and Standby teams). This reduce the number of staff who are present in the hospital simultaneously. Each team is composed of the attending consultants, fellows and residents carrying out the day to day patient care activities. This structure allows a backup coverage in case of illness or exposure to COVID-19 to the onboard team and restricts the non-essential personnel from the operating rooms and the emergency department. Furthermore, the minimum number of medical personnel are allowed at the bedside during the ward rounds and in the operating rooms.

We supported physical distancing practices by allowing physicians and team members with no direct contact with the patients to work from home, where they carried out administrative duties and virtual clinics. Regular staff meetings were all cancelled and were converted into virtual meetings. Morbidity, mortality, and business meetings have been reduced to four physicians attending physically and the rest of the staff virtually, to ensure patient safety and continuity of safe surgical practices as intended by these vital meetings.

Vital to the success of these major changes were continuing education of staff, patients, and visitors. These included education on physical distancing, self-isolation in case of mild symptoms, and protective measures ranging from hand washing to mask wearing. We have revised the recommendations of best practices during the pandemic issued by the major surgical societies, namely, the

American College of Surgeons, SAGES, and the Intercollegiate Royal College of Surgeons⁴⁻⁶. Our consultants, fellows and residents discussed the emerging guidelines to make sure we continue to update our protocols and practices to conform with the global surgical community.

Four days a week, our patients are followed up in our tele-clinic. The patients are contacted by phone, all clinical issues are addressed over the phone wherever possible without compromising patient safety and treatment quality. The patient is only brought to the clinic if a physical examination is deemed crucial. Refill medications are also ordered for the patient to be delivered by Qatar Post within 24 hours.

COVID-19 positive patients who require admission for emergency surgical care are transferred to the general hospital which has been designated as the Covid-19 positive base. Dedicated wards as well as operating theatres were established for these patients. This further decreases the probability of transmission to other emergency patients.

The interventions undertaken by our section specifically and the hospital as a whole was initiated even before the outset of an outbreak. By limiting staff numbers to the bare minimum required, carrying out day-to-day patient care remotely whenever possible, isolating surgical COVID-19 positive patients to one specific site, and implementing a protocol based on the experiences of our Chinese colleagues, we have managed to limit and decelerate COVID-19's spread across our surgical floors and units. Therefore, we recommend our colleagues in an emergency surgical setting to modify their local guidelines early and put in place early protocol pathways to prevent further spread of COVID-19.

Conclusion

COVID-19 is a highly transmissible disease. Guidelines on the management of emergency

surgical patients is the need of the hour. Each institution should put together their set of guidelines and institute changes that are in line with the international recommendations and local regulations.

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Figure 1: Algorithmic guideline for management of suspected and positive COVID-19 patients in emergency surgery.

Figure 2: Narrative details of the algorithmic guideline for management of suspected and positive COVID-19 patients in emergency surgery.

GUIDELINES FOR MANAGEMENT OF SUSPECTED AND POSITIVE COVID-19 PATIENT IN EMERGENCY SURGERY

COVID - 19


 مؤسسة حمد الطبية
 Hamad Medical Corporation
 HEALTH • EDUCATION • RESEARCH
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 جراحة الحالات الحرجة
 Acute Care Surgery

A Preoperative

- Emergency
- Outpatient
- Inpatient

COVID-19 POSITIVE OR HIGHLY SUSPECTED PENDING PCR RESULT

SURGICAL CONSULTATION

Virtual review of the patient by the Consultant (full investigation, Consultant to Consultant)

Life Saving Or Clear Indication For Surgery

Patient needs to be seen by a surgeon in-person

YES

NO

Team leader will assign consultant and/or specialist to evaluate the patient

- Tele - Instructions
- Follow-Up In The Clinic

Patient Examination with full PPE
Using "Buddy System"

- 01 HAND RUB
- 02 WEAR DISPOSABLE GOWN (ensure back and legs are covered)
- 03 WEAR N95 MASK (fit checked)
- 04 WEAR FACE SHIELD GOGGLES
- 05 WEAR DOUBLE GLOVES

Steps to wear PPE



Steps to remove PPE

- 01 REMOVE GLOVES
- 02 HAND RUB & HYGIENE
- 03 REMOVE GOWN
- 04 HAND RUB & HYGIENE
- 05 REMOVE MASK
- 06 HAND RUB & HYGIENE

PATIENT NEEDS SURGERY

B Intraoperative

NO

YES

Same team consultant and specialist / fellow assigned will do the procedure.

- Non-Operative Management
- Medical Prescriptions
- Follow-Up As Inpatient
- Follow-Up In The Clinic

- Respect OR protocols
- Go to dedicated OR for Covid-19
- PPE, N95 mask with face shield
- Assure smooth post-operative course
- Short procedure (absorbable sutures for skin)

C POST OPERATIVE

- All PPE should be removed inside the operating room.
- Follow PPE removal and disposal as per guidelines, take shower if possible.
- Return to work at the assigned facility.

- Site marking, consent and appropriately informing family members should be completed as usual.
- Sign in at reception should be modified to ensure minimal staff exposure.
- The surgeon must wait till the patient become intubated then enter the OR.

A

SCREENING (as per CDC guidelines)

- Ask 3 questions to all patients (Respiratory symptoms, History of travel to affected countries, Contact with confirmed Covid-19 patient in the last 14 days)
- All highly suspicious / positive patient must be referred to ID team as per CDC protocol.

B

UNIVERSAL PRECAUTIONS

- Suspected patients should wear a properly fitted mask.
- The number of managing staffs should be kept to a minimum.
- The medical personnel in contact have to wear PPE during treatment.
- Treat the body fluids, tissues, and other apparatus in contact with the patient as having potential biohazard.
- The operating theatre should be cleaned as per biohazard based on current available protocols.

C

SURGICAL TEAM

- Each surgical unit should have a core team to manage COVID-19 using the hotline.
- A dedicated team on standby for all suspected patients.
- This team should be optimally trained in handling the personal protective equipment.

D

SURGICAL CONSULTATION

- Patient should be reviewed **virtually by the consultant on call**.
- It must be a **Consultant to Consultant Referral** and communication.
- Team leader will make the decision **Go / No Go** and select the team to evaluate the patient +/- do the procedure.
- All investigations must be thorough before surgeon examines the patient in person.
- Head and Neck examination is high risk for aerosol transmitted infection.

E

SURGEON IN CONTACT WITH THE PATIENT

- Staff must use **full PPE** in addition to universal precautions ,
 - Use **coverall and disposable scrubs, N95 masks, goggles with full eye protection, face shield, shoe cover, double gloves, waterproof gown (if not available use plastic apron underneath standard gown)**.
 - Time spent with patients should be kept to the minimum.
 - Take shower following contact with the patient if possible.
- If need to go for surgery add to above the following instructions:**
- Instruct the anesthesiologist and OR nurses to do the necessary steps.
 - Surgeon should not be in the operating room or intubation unless concurrent management of bleeding etc requires their presence.
 - Under no circumstances should staff enter the operating room without properly applied PPE.
 - All personal devices should be kept outside the OR. consultation phone to be kept with a nurse to answer urgent calls.
 - Shorten the operative time as much as possible.
 - Nonoperative management should be selected whenever feasible as an option without compromising patient safety.
 - Open techniques is preferable over laparoscopy whenever it is an option . With laparoscopy , use low pneumoperitoneum pressure.
 - strict hemostasis , electrocautery at low settings , avoid using harmonic or ultrasound dissection , liberal use of suction , reduce Trendelenburg position
 - Patient safety should always be a priority .
 - Don't go home with scrubs , clean your phone ,

F

GENERAL CONSIDERATIONS IN SURGICAL COVID-19 PATIENT

- All tertiary hospitals should have a dedicated OR for patients suspected with COVID-19. It should ideally be easily accessible from the point of contact.
- Any non-urgent surgery should be deferred for at least 14 days.

CANCER IN THE ERA OF COVID-19

*Ahmad A. Othman**

Abstract

As the coronavirus disease 2019 (COVID-19) escalates and the world comes to grips with this unprecedented pandemic, many reports are emerging on how cancer patients are being dealt with. Much proportions of the health services have been redirected to tackle this pandemic and cancer care has been deprioritized, delayed, and even discontinued. Health authorities and governments have made decisions under the huge stress of the pandemic which will eventually have grave consequences on cancer morbidity and mortality in the coming years.

This brief article will discuss the impact of this pandemic on cancer patients and their care.

Keywords: COVID-19, pandemic, cancer, mortality, healthcare.

Since the start of the COVID-19 outbreak in Wuhan, China in December, 2019, we are at a point where countries and regions are experiencing the “recovery phase”, lockdown, 1st or subsequent surges. Millions of people have been infected and more than a million have died. The pandemic continues to take hold of the scene. Different aspects of life have drastically changed with new “norms” being practiced or imposed.

The influx of a large number of patients with COVID-19 requiring intensive monitoring and mechanical ventilation has overwhelmed hospital systems in many countries around the world. This disrupted routine treatments for non COVID-19 diseases including hematologic and solid malignancies.

Cancer patients are unique in their fragility and vulnerability and their outcomes are apt to be adversely affected if their usual standard of care is delayed or disrupted¹.

Since the outbreak began to unfold, one of the most prudent and urgent questions and almost impossible to answer is which therapies should be administered or continued and which should be deferred or stopped.

Travel restrictions, the lockdown, curfew, patients concern and fear of contracting the virus, regularity bodies guidance, and redeployment of oncology staff to cover shortages in the acute medical receiving units and Intensive Care Units (ICU) have all resulted in many cancer outpatient visits being minimized. Some have been replaced by telephone or online consultations with deferral of some routine therapies, tests, and procedures. Another important issue that is relevant to many of the countries within the Islamic World, is the economic crisis that has emerged from the pandemic. Travel restrictions and the lockdown have resulted in loss of jobs and increase in the rate of unemployment and, in the presence of a good percentage of people lacking health insurance in many countries, patients with grave non COVID-19 diseases such as cancer maybe unable to find a proper and affordable healthcare.

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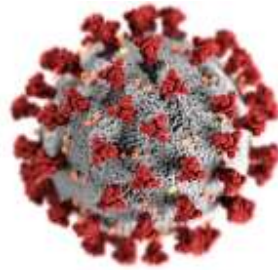
Oncology and hematology societies as well as national health authorities have been quick to issue guidelines on cancer care during the pandemic. The European Society for Medical Oncology (ESMO) recommends that oncologists adjust their routines with bolstering telemedicine services, reducing clinic visits, and switching to oral or subcutaneous therapies, rather than intravenous ones, when possible. These different societies advocated interrupting anticancer treatment in patients with active COVID-19.

Elective procedures such as elective surgeries and biopsies at in-patients' facilities were rescheduled. Treatment for early stages of cancers such as neo-adjuvant chemotherapy for breast or rectal cancer were also deferred.

Intensive chemotherapy that may lead to immunosuppression and ICU admissions were discouraged because of the shortage of ICU beds. Screening programs such as mammograms and colonoscopies were also postponed²⁻⁵.

Estimating the risk versus benefit of administering potentially immunosuppressive treatments to patients with cancer and balancing individual versus societal benefits in the new reality of stretched resources, pose acute ethical dilemma to oncologists¹.

Higher priority should be given to life threatening cancer conditions or in cases where intervention is likely to result in substantial overall survival gain⁶.



Corona virus

The global pandemic of the COVID-19 continues to have serious impact on many people, including cancer patients, their families, and caregivers.

Cancer patients are a special group of individuals that might be at a higher risk of serious illness from an infection by virtue of their jeopardized immune system by cancer and its treatments.

The global pandemic has had an impact on patients' access to cancer treatments, and in many cases, it has been postponed or stopped altogether based on very little evidence.

In a relatively early study published in the *Lancet*, mortality from COVID-19 in cancer patients seems to be principally driven by age, gender, and comorbidities. There was no conclusive evidence that cancer patients on

chemotherapy or other anticancer treatment are at an increased risk of mortality from the COVID-19 disease compared with those not on active treatment⁷.

Treatments such as chemotherapy or immunotherapy didn't seem to increase mortality risk from COVID-19; this means that in many cases cancer treatments maybe safe to use during the pandemic, depending on the patient's individual circumstances and risk factors⁸.

Another important sequel of the COVID-19 pandemic is on clinical and basic cancer research. The pandemic has caused an unprecedented disruption throughout the cancer research community, shuttering many labs and slowing down cancer clinical trial operations. Scientists and clinicians are

diverting their cancer research activities to study the impact of COVID-19 on cancer. It's hoped that this pause in basic and clinical research would be only temporary, because trials are the only way to make progress in developing novel therapies for cancer. The effects of suspending research today may lead to slow down in oncology progress for many years to come⁹.

To overcome some of the current shortages in cancer research, the National Cancer Institute (NCI) is funding now several new trials aimed at addressing the relationship between COVID-19 and cancer. An example of such trials is the NCI COVID-19 in Cancer Patients Study (NCCAPS) which is a prospective longitudinal study that will collect blood samples, imaging, and clinical data to better understand how COVID-19 affects cancer patients; the results of this study will be eagerly awaited¹⁰.

Using one model for breast and colorectal cancers screening and diagnosis and suboptimal care for people with cancer during this pandemic, it is expected that the number of excess deaths per year would peak in the next year or two⁹.

It's clear that postponing procedures and deferring care for cancer patients as a result of the pandemic was mandatory at one time, however, studies predict that over the next decade there will be around 1% excess mortality rate in breast and colorectal cancers. This reflects the effect of COVID-19 pandemic in causing delayed screening and primary treatment for cancer patients.

The speed, duration, and future surges of COVID-19 remain unclear and consequently, the long-term impact on cancer outcomes may continue to unfold for the years ahead. Needless to say, ignoring life threatening non COVID-19 conditions such as cancer for too long may turn one public health crisis into many others. Since the start of the pandemic, multiple changes in the provision of cancer

care from the time of diagnosis, including modifications of treatment schedules have been advised by professional bodies and health authorities globally as mentioned earlier¹¹⁻¹⁵.

The effect of delayed presentation on patients with cancer is not immediate, and premature deaths as a result may occur up to 5 years later and will differ according to the tumor type. In a study conducted in England and published very recently, a substantial increase in the number of avoidable cancer deaths in England are to be expected as a result of the diagnostic delays due to the COVID-19 pandemic in the UK¹⁵.

Worries about spreading and contracting COVID-19, and fear that the virus is rampant in hospitals and other healthcare facilities might dissuade patients with symptoms from contacting their primary care doctors. Delayed cancer diagnosis during the upcoming few months risks thousands of cases going undetected and may lead to "upstaging" of their cancers. Additionally, a surge in demand for cancer-related services once the pandemic has passed its peak "knock-on effect," coupled with the aforementioned increase in advanced stage cancer due to delays in diagnosis and treatment, would probably overwhelm health services and contribute to an excess cancer-related mortality in the coming few years¹⁶.

The entire landscape of cancer management in primary care, from case identification to the management of people living with and beyond cancer is rapidly evolving in the face of the COVID-19 pandemic¹⁷.

In a climate of fear and mandated avoidance of all but essential clinical services, delays in patient populations and healthcare system response to suspected cancer symptoms seem inevitable. In the UK, for example, the national cancer screening program has been suspended¹⁸.

The earlier studies, mostly from China that showed a high case-fatality rate in patients with cancer and COVID-19 were confounded by their retrospective nature and small numbers. The Chinese data showed that cancer patients infected with the COVID-19 are at 3-5 times the risk of requiring mechanical ventilation or ICU admission compared to the general population¹⁹⁻²⁰.

In a recent review and meta-analysis to evaluate the impact of COVID-19 infection on cancer patients, 22 studies having 1018 cancer patients were analyzed. The findings showed that the frequency of cancer among confirmed COVID-19 cases was 2.1% with a mortality rate of 21.1%, severe/critical disease rate of 45.4%, ICU admission rate of 14.5%, and mechanical ventilation rate of 11.7%. These figures showed that cancer patients had a higher risk of death, severe/critical disease, and need for mechanical ventilation²¹.

A similar finding of higher incidence of severe infection and fatality rate among cancer patients with COVID-19 has been reported in a systematic review of 19 studies with 110 cancer patients²².

A longer-established diagnosis of cancer was found to be associated with increased severity of infection and mortality from COVID-19; this may possibly reflect the effects a more advanced cancer disease has on this viral infection²³.

According to the World Health Organization (WHO), the Reproduction Number (RO) of the COVID-19 virus is around 2.5 while the case fatality rate for COVID-19 positive patients with cancer as a comorbid condition was 7.6% versus a case fatality rate of 3.8% in the entire population. Immune dysregulation and chronic inflammation

maybe potential drivers of severe outcomes in COVID-19 positive cancer patients²⁴.

Hematopoietic stem cell transplant (HSCT) recipients are known to be at a higher risk of various types of infections including opportunistic ones. Their immunity maybe profoundly suppressed by the therapies they receive that cause cytopenia; this makes them very likely to have severe symptoms if they acquire the COVID-19 infection. The European Society for Blood and Marrow Transplantation (EBMT) recommends very close monitoring of the HSCT recipients and deferring the transplant procedure in certain circumstances²⁰.

In summary, cancer is a special disease with special needs and more prospective studies are needed to assess many of the uncertain variables such as morbidity, mortality, and the best way of its management in the era of this unprecedented pandemic that has brought the whole world to a standstill and is continuing to take more lives daily.

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SOCIAL, PSYCHOLOGICAL AND MENTAL HEALTH EFFECTS OF THE COVID-19 CRISIS

Rafidah Bahari, and Mohamed Hatta Shaharom*

Abstract

As the world is coming to terms with COVID-19 and its impact, the psychosocial effects must not be ignored. Lessons from past infectious diseases outbreaks and recently published studies on COVID-19 in China during the early stages of the pandemic provided some insight into how this current crisis will impact us socially and psychologically. In this paper, we will discuss the important issues, as well as recommend some general guide on how to overcome these psychosocial effects.

Keywords: psychological distress; PTSD; social media; social support

Introduction

The COVID-19 crisis really shook the world. When it first started no one imagined that it would change the world as it has. It came out of the blue, and started its deadly spread across provinces of China, across countries and around the globe. Very few countries are spared. Some people who were infected never knew they had the disease; all they had were minor flu-like symptoms, and unknowingly infected others, starting its deadly dance. However, for some people, the illness is severe, damaging their respiratory function and more often than not, needing intensive care. Even in developed countries, as their ICU beds filled up and overflowed, hospitals became inundated and health care workers collapsed from exhaustion, their health service systems crumbled. The death toll rose swiftly.

When an event occurred suddenly, unexpectedly and posed a real threat of death or serious illness, it is described as a traumatic event. The COVID-19 crisis is exactly that. It came to many people as a surprise and people feared for their lives. Exposure to traumatic events may inevitably lead to psychological distress of various degrees of severity. For most people, they recover spontaneously. For others, they go on to develop post-traumatic stress disorder (PTSD) an illness with a potentially debilitating consequence if not treated.

As the COVID-19 story continues to unfold, we will not be sure of its true psychological extent until the crisis finally ends. However, a picture is starting to emerge from newly published studies from China, the country where it all began. Also, this is not the first-time pandemics occur. The world has had its fair share of epidemics and pandemics, going far back into history.

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The first recorded epidemic was the influenza epidemic in 1200 BCE and one of the most well-known pandemic in history was the Black Death or Bubonic Plague which occurred from 1346 to 1353 and caused the death of 75 to 200 million people around the world¹. In the more recent history, outbreaks such as the Severe Acute Respiratory Syndrome (SARS), Ebola and H1N1 influenza were scientifically studied and provided us with useful information on what course COVID-19 might take. In this paper, we will look at studies published on previous epidemics, pandemics and quarantine including the more recent ones on COVID-19 itself to establish its psychological and social effects and possible interventions. This by no means will be a thorough systematic review, but hopefully enough to produce workable recommendations in order to manage the psychosocial effects of the pandemic.

Psychological effects: The good, the bad and the ugly

In the acute stages of a pandemic, negative psychological experiences are common and almost expected. In China, during the early days of the COVID-19 outbreak a survey done among the general public found that 53.8% experienced moderate to severe psychological distress and 8.1% admitted to feeling at least moderately stressed out². This is not unique to China and COVID-19 outbreak. Back in 2007, Australia was struck by a highly contagious equine influenza virus. Researchers there surveyed the general adult population and reported that 61% of the population admitted to having moderate, severe and very severe psychological distress³. These large numbers are grim reminders that psychological sequelae of pandemics are significant and not singular or isolated cases.

Psychological distress is a loose term that is often used to describe non-specific emotional

and behavioural symptoms. These symptoms may not fulfil the criteria to make a diagnosis of mental illness, nevertheless they may be severe enough to impair a person's occupational or social function. Most common symptoms associated with psychological distress include excessive worry, low mood, disturbed sleep, poor concentration, feeling tense, loss of interest and poor motivation⁴. Tian *et. al.* conducted a study looking at symptoms of psychological distress in the general population in the days and weeks after COVID-19 was declared as an emergency in China⁵. It found that the most prevalent symptoms were obsession and compulsion, interpersonal sensitivity, phobic anxiety and sleep disturbance. Nevertheless, these symptoms are short-lived. In principle, psychological distress usually occur following exposure to stressful situations and generally disappear after a few weeks following the cessation of stressors⁶.

Apart from general psychological distress, involvement in outbreaks may also produce symptoms of specific disorders, in particular anxiety, depression and PTSD. More importantly, these symptoms are persistent, severe or progressively worsening, warranting proper psychiatric diagnoses and management. During the peak of the COVID-19 crisis, it was learnt that 16.5% of the adult Chinese population had symptom of moderate and severe depression, 28.8% had significant anxiety symptoms and 8.1% had at least moderate stress². The authors repeated the study 4 weeks later and reported that the mean scores of depression, anxiety and stress had not significantly altered, but did not discuss whether there had been a reduction of prevalence⁷. It is suspected that there had been a reduction in the number of people affected, as evidence from previous studies which suggest that as time passes, and the gravity of event is reduced the number of cases will reduce. For example, in Taiwan,

one month after the WHO removed it from countries with active SARS cases, a study reported that 3.7% fulfilled the criteria for depressive disorder⁸. Removal from the active cases list meant that there had been no recent transmissions and citizens were permitted to resume normal daily routines. Hence, time and return to normality are important as to allow spontaneous reduction of symptoms. This is supported by other studies on exposure to traumatic events such as war, natural disasters and accidents⁹⁻¹¹. For example, in 1966 a disaster occurred in Aberfan, South Wales when a coal slag heap from a nearby mine collapsed onto a primary school killing 116 children while another 145 children survived⁹. The survivors were followed up 30 years later and established that there were no significant increase in risk of anxiety and depressive disorders as well as substance misuse.

The authors in the Chinese study also looked at post-traumatic stress symptoms and it was revealed that about half of the population (53.8%) had moderate to severe symptoms, during the peak of COVID-19 outbreak². After 4 weeks, they reported a significant difference in the reduction of scores on the Impact of Event Scale Revised (IES-R), but again, did not state the number of people with significant symptoms⁷. The IESR is one of the best tool for detecting PTSD^{12,13}. It is a 22-item questionnaire; score of 24 to 32 indicates that there is a concern of PTSD, but possibly the most accurate cut off for diagnosis of PTSD would be a score of 33 and above^{12,14}. In the study mentioned previously, Wang and colleagues reported a mean score of 33 during the peak of COVID-19 but this mean fell to 30 after 4 weeks, indicating that some participants no longer fulfilled the criteria for PTSD. Whether this is a significant reduction, we can only guess. However, there are many other studies mainly in conflicts and disasters which indicates that this is the case. As an example,

a study involving adolescents 3 and 17 months following an earthquake in China showed that the prevalence of PTSD at 17 months dropped significantly from nearly 17% at 3 months to 12% ($p < 0.001$)¹⁵. And there are more similar examples.

Nevertheless, exposure to stressful situations do trigger mental illnesses in certain predisposed individuals. Studies from previous outbreaks were able to predict which populations are at highest risk of PTSD, anxiety and depression. Studies have found that direct contact with the infection, either as patient or health care worker, increases the risk of psychological distress, anxiety and depression⁸. This is not surprising, as the more frequent the exposure to a dangerous pathogen, the more likely it is to contract the condition and hence the higher threat it poses to health. However, the situation itself is not the only factor; many more individuals are exposed but do not succumb to mental illnesses. Individual factors such as female gender, younger and older age as well as lower educational attainment also makes an individual more vulnerable³⁻⁵.

Furthermore, infectious disease outbreaks are often accompanied by other stressors, and it is these stressors that increases the likelihood of psychological sequelae. One such stressor is financial. In the SARS study, researchers found there is a strong association between loss of income and depressive disorder⁸. Due to sickness, individuals who were directly affected by SARS were not able to contribute financially and this increased the family's financial burden. This is a major concern, since many countries enforced mass quarantine or lockdown during the peak of COVID-19 crisis. This prolonged lockdown have already caused loss of income to many individual and companies, and countries are struggling economically. The other stressor associated with an infectious disease outbreak are stigmatisation and alienation of

individuals in certain groups. For example at the start of the COVID-19 outbreak, there was a palpable fear of contracting the illness that people from Wuhan were shunned even though they were free from the condition or had been away from the province¹⁶. The same happened to Ebola virus survivors where they were stigmatised and discriminated upon¹⁷. This state of social isolation may even be more detrimental to mental health than the outbreak itself.

The psychological effects of healthcare workers received special mention, since they are at the front line in the management of infectious disease outbreaks. A systematic review and meta-analysis looking at the impact of epidemics on mental health of these workers was conducted which included 56 studies from Asia, Canada, Saudi Arabia and other countries¹⁸. The pooled prevalence of different mental illnesses found were substantial; 45% had significant symptoms of anxiety, 31% fit the diagnosis of acute stress disorder, 29% met criteria for burnout and 19% fulfilled diagnosis of PTSD. Although modulated by the extremely large sample size, these figures are still elevated, indicating higher vulnerability among health care workers. The study was also able to determine risk factors associated with the development of mental illness, most of them mentioned earlier. These risk factors include being female, younger age, lack of social support, social isolation, stigmatisation and exposure to high risk environments. Moreover, there are risks which are specific to the occupation, which consist of work setting such as emergency departments and isolation wards, lower levels of training in outbreak situations, unpreparedness and lesser job experience^{8,18,19}.

The other aspect often linked to outbreaks and may also contribute to the development of psychological effects is the quarantine. For the benefit of the general public, individuals potentially exposed to an infectious agent are

separated or 'quarantined' from other people and are required to follow strict infection control measures²⁰. Quarantine is a double-edged sword; it may be effective in containing the spread of the disease, but it also leaves its mark on the mental health of the affected individuals. A rapid review of psychological impact of quarantine due to SARS, H1N1 influenza, Ebola, Middle East Respiratory Syndrome (MERS) and equine influenza which included 24 papers found that generally, high prevalence of psychological distress and psychiatric disorders were reported²¹. Negative emotions experienced by those in quarantine included fear, nervousness, sadness, guilt, anger and numbness. Psychiatric diagnoses were also high in this population; one study reported that 28.9% of PTSD and 31.2% of depressive disorder²⁰. In the advent of COVID-19 being declared an emergency by WHO, many countries enforced mass quarantines, isolating people in high incidence areas, stopping unnecessary air travels, and even ordering businesses, governmental offices and educational institutions including schools and universities to be closed. Although, the measure has been seemingly effective in driving down infection rates, communities are left reeling with financial difficulties, and concerns with children's development and education. The prolonged duration of quarantine is another cause for concern. Numerous studies have implicated longer duration of quarantine with higher psychological impact²⁰⁻²².

However, it is not all bad. Due to understandable reasons such as infectivity, uncertainty and strict measures, one of the main psychological response during a pandemic is fear^{5,23}. Living beings, humans included, have built in responses to threats on their wellbeing and survival. Horowitz (1986) described this reaction in his stress response theory²⁴. According to this theory,

following exposure to life-threatening events, people respond by going through the initial stage of outcry, then denial followed by intrusive repetition before working through the trauma and finally settling into the completion phase²⁵. Fear is one of the responses during the outcry phase, along with anger, alarm, panic and anguish. Fear may seem a negative emotion to experience given any circumstance, but in a threatening situation, fear may be the reaction that preserves life. When fear kicks in, all the bodily reactions needed to either fight the assailant or run away from the situation²⁶. Studies show that strong fear will also result in behaviour changes as in the case of ‘health scares’²³. When people realised that the Bubonic plague was caused by rats, they cleaned up their cities; and when people realised that COVID-19 virus can survive on surfaces for as much as three days, washing hands and self-hygiene improved. During the SARS crisis, a survey among uninfected individuals in Hong Kong found that those with moderate anxiety levels were more likely to take extensive precautionary measures against illness²⁷.

Interestingly, some people reported positive emotions while in quarantine. In a study of individuals quarantined due to contact with patients with SARS, a minority admitted to feeling happy (5%) and relief (4%)²¹. This is probably related to religiosity and spirituality, in which these individuals expressed a feeling of happiness and gratefulness for being alive. Some people are also happy because they are surrounded by their loved ones and drew strength from each other. In others, relief is felt due to the understanding that quarantine is an effective measure and a necessary one to drive down the contagion, and that the authorities are taking the situation seriously. When this rationale for quarantine is understood, compliance increased and psychological distress is reduced²².

Social effects: The role of social support and social media

The role of social support in mental illness must not be underestimated. Good social support is important in all types of mental illness and can make a difference in a patient’s outcome. Numerous studies have implicated lack of social support as one of the major risk factors in the development of psychological morbidities²⁷. For example, a systematic review and meta-analysis found that poor social support is one of the strongest predictors for the development of PTSD²⁸. The same goes for other psychiatric conditions such as depressive and anxiety disorder.

There are many reasons contributing to lack of social support. As mentioned before, one of the consequences of outbreak is stigmatisation and social isolation. Due to fear, some people react by distancing themselves from people who may be exposed to the offending infectious agents, regardless whether they have been proven to harbour the condition. These include family members of people who have had the illness, those who have been in contact with individuals positive for the condition or ‘clusters’, people living in areas with high number of cases and even health care workers. Stigmatisation leads to community shunning these individuals instead of offering them support. This social isolation leads to development of mental illness in certain susceptible individuals, and may even prolong the illness²⁹.

However, not all social support is equal. Sometimes, well meaning friends and relatives may do more harm than good. In mental illness such as schizophrenia, having family members who are extremely critical or overprotective may worsen the sufferer’s condition. It is not only important to have people around, but also to have positive and encouraging words and actions from them. As an example, PTSD sufferers who

perceived people around them as failing to respond in positive supportive fashion or even negatively reported experiencing more symptoms³⁰. This include insensitively probing about their condition, dismissing their symptoms and giving inappropriate advice such as not to listen to doctors and medication will do more harm than good.

During difficult times, one of the ways people cope is so seek out information. Especially during mass quarantine people rely on the media to supply this information since they are not able to venture out of their homes. However, if information from official channels are not disseminated regularly or lacking, rumours will circulate to fill in that void³¹. Sometimes, the media does little to allay people's fears about the situation, in fact fear-mongering and sensationalising COVID-19 stories is probably more common. They usually report on and focus on the negative side of the story, i.e. the number of deaths, new cases and not enough focus are given on the cases which do recover²³. What is needed is accurate and reliable information, which may soothe people's fears and in turn reduces psychological sequelae.

The use of social media is extremely important especially in the younger generation. Nevertheless, due to its nature, it may be difficult to police, giving rise to 'fake news'.

This misinformation is counterproductive. In a study among students who were in lockdown due to campus shooting, these students reported receiving conflicting news through the social media, and that causes higher stress levels, especially in heavy users who trusted social media for important updates³¹. In some countries such as Singapore, the government established their own social media channels to disseminate correct information and dissuade fake news²⁷.

Recommendations

Now that we are at this juncture, what is the way forward? We suggest the following steps can be taken to reduce the psychosocial impact of COVID-19.

Firstly, we know that psychological impact following a stressful situation is real, and there is no use denying it. Hence, we need to be prepared. Health officials in each country must identify people at risk of developing psychological distress, anxiety, depression, and other mental illness and offer them support. This include health care workers whose occupation puts them at risk. Targeted psychological support should be given to this population and if necessary, intervention. Health care authorities must also be prepared to meet sudden increase of psychiatric cases in the coming months and formulate an effective plan on how to manage this tsunami. Private institutions and non-governmental organisations may be roped in to help, but it will need strong leadership and good collaboration between organisations.

Secondly, since information is important, they should be given regularly, transparently and using official channels. Encourage media to report objectively and accurately. They are an important alternative source of information, but the wrong information only give rise to fear and panic. Governments must also ensure that the circulation of rumours and fake news are minimal through awareness and other means.

Thirdly, we know that social support is critical in the development of psychological distress and mental illness. Hence, communities should be made aware of this. Pillars in the community such as religious groups and non-governmental organisation should be encouraged and given every help by the government to make their task easier. Fourth, quarantine and in the case of COVID-19 mass quarantines are necessary but not without costs. To reduce these financial, social and psychological consequences, the

duration of quarantines should be as short as possible, its requirement reviewed and revised frequently, enhanced education on its purpose given and support including financial and physical offered.

And finally, for those who are spiritually inclined, the psychosocial aspect of life is linked to the spiritual in life³². Management of such patients must then be a psycho-spiritual effort in a social setting, side-by-side with the physical aspect of a holistic paradigm³³.

Conclusion

Although we are bracing ourselves against the psychosocial impact of the COVID-19 crisis, the future is not hopeless. It may look different, but after some time the 'new normal' will become 'normal'. Every cloud has a silver lining and every negative event will turn out to have some wisdom behind it. Be ready, do what we can and have faith...everything will in the end turn out all right.

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TESTING OF HEALTH CARE WORKERS IN THE CONTEXT OF COVID-19

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Abstract

The Covid-19 pandemic has placed unprecedented strain on health-care services worldwide. As of 23rd of July 2020, there are more than 15million cases and 600,000 deaths globally. Health-care workers (HCWs) are at higher risk of being exposed especially within the healthcare facilities and it is important to note that they are potential sources of transmissions even without any symptoms. Apart from arming the HCWs with the appropriate and adequate Personal Protective Equipment (PPE) essentials, we need a systemic global data pertaining to Covid-19 infections in HCWs and health authorities need to seriously consider systematic testing of their HCWs in order to reduce the risk of hospital acquired infections.

Keywords: Covid-19, Health Care Workers, hospital acquired infections, coronavirus.

Introduction

The Covid-19 pandemic has posed unparalleled challenges to healthcare systems globally. Healthcare care workers (HCWs) are at the forefront of the Covid-19 outbreak response and as such are exposed to hazards that put them at risk of infection¹. The earlier published data in January 2020 from China reported that 3.8% of healthcare care personnel were infected with 5 deaths (0.3%)². Later in May 2020, over 90,000 HCW were infected which could still be an underestimate as there is no systematic global tracking³. The countries with the highest numbers of health worker deaths thus far, include the USA (507), Russia (545), UK (540), Brazil (351), Mexico (248), Italy (188), Egypt (111), Iran (91), Ecuador (82) and Spain (63)⁴. The establishment of transmission of the disease among HCWs is associated with five main risk factors: lack of personal protective equipment (PPE), exposure to infected patients, work overload, poor infection control, and pre-existing medical conditions⁵.

Importance of Testing HCWs

In Malaysia, as of 19th June 2020 over 28,000 HCWs were subjected to screening and 363 were confirmed positive with a total of 3 mortalities which is evidently low, compared to the estimated of 6% HCWs infection rate however this could be explained by the low testing rate^{3,6}. The importance of testing HCWs has been discussed widely, apart from ensuring infection control strategies that includes the provision of appropriate and adequate PPE. Screening HCWs with the antibody test for coronavirus-19 will inform whether they are immune. The presence of antibodies would be reassuring that the HCWs are safe to work⁷.

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The other important aspect is to detect asymptomatic positives as it has been reported that up to 78% of patients could be asymptomatic and this is an important reason for the rapid spread globally in the early stage especially that it has been proven that the viral load detected in asymptomatic patients was similar to that detected in symptomatic patients, indicating the transmission potential of asymptomatic carriers of SARS-CoV-2^{8,9}. Furthermore, evidence from modelled COVID-19 infectiousness profiles suggests that 44% of secondary cases were infected during the pre-symptomatic phase of illnesses of the index cases¹⁰. These asymptomatic HCWs might become a risk factor for patients, colleagues, and the community. Therefore, identification of asymptomatic carriers among HCWs would be important. They should be isolated from family and colleagues to avoid cross-infection¹¹.

The third group of HCWs that could be identified are the symptomatic, unwell Covid-19 positive whereby they must be treated, isolated and their contacts traced. Lastly, HCWs whom are proven negative are safe to work, but they are naive and therefore vulnerable to Covid-19 infection. Identifying this group of HCW is necessary as to prevent unnecessary quarantine to bolster the health workforce. Staff shortages in health care are significant amidst the global effort against coronavirus disease 2019 (COVID-19). In the UK, guidance for staffing of intensive care units has changed drastically, permitting specialist critical care nurse-to-patient ratios of 1:6 (normally 1:1) and one critical care consultant per 30 patients (formerly 1:8–1:15)¹². In the earlier part of the outbreak, due to resource limitation of COVID19 testing, large numbers of HCWs were being allowed self-isolation. However studies have shown that only 1 in 7 quarantined HCWs were positive for the virus^{13,14}. Hence, by increasing the testing of HCWs, unnecessary self-isolation can be

avoided and they can continue to join the otherwise depleted workforce.

Protect the HCW and the Way Forward

In an effort to protect the healthcare workforce, to ensure they remain healthy, are not burnt out, to alleviate their and their families' anxiety, to remain COVID19-free, and to limit hospital-acquired infections of COVID19, some institutions are advocating weekly or fortnightly COVID19 screening of HCWs operating in high risk zones namely the intensive care units (ICUs), operating theatres, and accident and emergency departments¹⁵. A healthy, COVID-19-free workforce that is not burnt out will be an asset to the prolonged response to the COVID-19 crisis.

Control of transmission in HCWs could depend on maintaining a low threshold for suspicion of infection. Some of the recommended indicators that a staff should be tested would include having worked at or attended a health care facility in the past 14 days where more than 2 patients with hospital-associated COVID-19 infections have been reported, symptoms of SARS (ie, fever, cough, or requiring admission to hospital), or close contact with a confirmed or suspected case of COVID-19 in the past 14 days. Staff should be tested twice, at the point of screening upon having symptoms and 14 days after¹¹.

As many countries including Malaysia are ramping up its testing capacity per day as one of a few pre-requisites in its efforts to flatten the COVID19 epidemic curve and its preparations for easing lockdown measures towards normalcy, it is crucial to expand this significant opportunity to allocate the testing for the HCWs. The National Health Service (NHS) of UK in particular initially has pushed for 15% out of their 100 000 tests per day for HCWs, however the cap was later removed unfortunately as the government strives to get more staff who are currently isolating

back to work as quickly as possible due to the staff shortages ¹⁶.

Conclusion

There is therefore a very convincing rationale for the implementation of mass testing of both symptomatic and asymptomatic HCWs prioritising those in high-risk areas to mitigate workforce depletion by unnecessary isolation, reduce the spread of COVID19 in hospital settings and to protect the lives and welfare of the healthcare workforce.

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THE ROLE OF CORONAVIRUS-2019 IMMUNOGLOBULIN (CIG) IN HOSPITALIZED COVID-19 PATIENTS

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Abstract

Many studies have tested the range of therapies for Covid-19 including immunosuppressant drugs, anti-malarial drugs as well as the current therapy of interest which is convalescent plasma. Convalescent plasma collected from recovered patients has been a therapeutic modality employed for over a hundred years for various infectious pathogens. Specifically, it has been used in the treatment of many viral infections with varying degrees of clinical efficacy. Initial findings for convalescent plasma therapy for the treatment of COVID-19 are encouraging based on small studies done in China. A review of presently published studies on the use of CIG in patients unwell with COVID-19 has been inconclusive. There are further ongoing trials to further evaluate the efficacy and safety of CIG as a viable treatment option for COVID-19 whilst a vaccine is being developed.

Keywords: CIG, antibodies, efficacy

Introduction

The body's immune system makes antibodies in response to an attack by bacteria and viruses. IgM levels increases during the first week after SARS-CoV-2 infection, peaks at 2 weeks and then reduces to near background levels in most patients. IgG is detectable after 1 week and is maintained at a high level for a long period which essentially confers immunity¹. Similarly, antibodies against viruses like measles, mumps, rubella and chicken-pox can confer protection for virtually a lifetime.

Vaccines, through the administration of weakened viruses, dead bacteria or toxoid ramps up antibody production and also induces active immunity. The immunity is long term, even lifelong because the antigens in the vaccine triggers the memory cells in the immune system, which are able to immediately produce protective antibodies when faced with the pathogen again.

Plasma from recovered patients can be harvested for its antibodies. It can be administered immediately to prevent or treat infection in another infected patient. This is called passive immunity. The antibody proteins will only last from a few weeks to a few months. This has already been used to treat patients with measles and varicella (chicken-pox) with measles immunoglobulin (MIG) and varicella zoster immunoglobulin (VZIG).

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History

Passive antibody therapy dates back to the 1890's when antibodies were first used to protect against bacterial toxins before the introduction of antimicrobials and this observation led to the rapid development of antibody therapy for the treatment of various infectious diseases².

The interest in passive antibody therapy has been renewed periodically, especially when new epidemics or pandemics emerged. During the influenza A (H1N1) pandemic of 2009, a prospective cohort study showed that the group that received the convalescent plasma experienced significantly lower mortality than the control group (20.0% vs 54.8%, respectively)³. Convalescent plasma were also used in 2003 SARS-CoV-1 and 2013 MERS-CoV outbreaks. They showed benefit in mortality but the intervention was not controlled with a placebo arm and most data was only limited to retrospective and case reports⁴.

Covid-19 Immunoglobulin

The earlier studies in China included a study in Shenzhen whereby five patients that were successfully treated with CIG reported improvement in clinical status. But, the patients had also received antiviral medications, so it's unclear which therapy, if any, was the critical success factor⁵. Another study of 10 ill patients has shown the convalescent plasma therapy was well tolerated and has improved the clinical outcomes through neutralizing viremia in severe COVID-19 cases⁶.

In response to the COVID-19 outbreak in the US and reportedly high case-fatality rates, the U.S. Food and Drug Administration (FDA) authorized the use of convalescent plasma in an Expanded Access Program. Data from

the first 20,000 patients transfused with COVID-19 convalescent plasma demonstrate that use of convalescent plasma is safe and carries no excess risk of complications. The use of convalescent plasma may be associated with improvement in survival, however, their report does not establish efficacy⁷.

A recently published Cochrane review of 20 studies of varying designs on the effectiveness of convalescent plasma was inconclusive. There were also limited data on the safety of the therapy⁸.

The Awaited Vaccine

Finally, there are at least 100 coronavirus vaccine candidates in the pipeline. At least five are already in phase three clinical trials in the US and China. It would be the game changer, the panacea in our efforts to short circuit the Covi-19 pandemic by boosting the herd immunity thus preventing more morbidities and mortalities and extinguishing the outbreak. It is a long time coming, earliest 12-18 months, and meanwhile CIG is an interim measure to prevent infection in exposed persons, prevent progression and/or mitigate the criticality of the sickest patients.

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THE SCIENCE OF REOPENING SCHOOLS AMIDST THE PANDEMIC COVID-19

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Abstract

In response to the Covid-19 pandemic, school closures across countries worldwide were instituted based on previous modelling studies in curbing outbreaks although the effectiveness is debatable. The Covid-19 pandemic thus far has shown that children appear to form a much lower proportion of cases than expected, and largely remain asymptomatic or have a mild form of the disease. Emerging epidemiological data suggest little evidence of transmission of Covid-19 through schools. Prolonged school closures can have profound economic and social consequences. Systematic adoption of personal hygiene, safe distancing and appropriate personal protective equipment remain the core principles in guiding school-opening policies in accordance to the guidance of the local health authorities.

Keywords: Covid-19, school, pandemic, coronavirus.

Introduction

Governments worldwide have implemented school closures as a preventive measure against the spread of Covid-19, and this may lead to the educational disruption of over 1.5 billion children and young people¹. The WHO Director-General noted on March 12, 2020, that “all countries must strike a fine balance between protecting health, preventing economic and social disruption, and respecting human rights”² and shutting down schools has been an almost universal reaction to the pandemic despite little evidence of transmission of Covid-19 through schools and more importantly the adverse consequences of continued and further school closure is undoubtedly detrimental to the cognitive potential of our children let alone their physical, social and emotional health³.

Covid-19 in children and young people

An earlier published case series in February 2020 recorded children younger than 10 years account for only 1% out of the 72,314 of Covid-19 cases⁴. Another review then showed that Covid-19 occurred in 0.39–12.3% of which the highest incidence was reported also in China following widespread testing⁵.

In a population-based study in Iceland, in which 9,199 were tested, of the 564 children less than 10 years old, 38 (6.7 per cent) tested positive. This contrasts with 1183/8635 (13.7 per cent) adolescents and adults who tested positive, suggesting a lower incidence in children when compared to adults⁶. Similarly in house hold contacts, with an overall household attack rate of 16 per cent, the secondary attack rate was highest in spouses (28 per cent), all adults (17 per cent) and was lower in the under 18 years age group (4 per cent)⁷.

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Contrary to the earlier narrative that children are less vulnerable to Covid-19, the risks of Covid-19 disease in children and young people depend largely on where individuals live and how vulnerable they are to disease and ill health. This is evidenced by the higher proportion of Covid-19 cases among the under-20s in low- and middle-income countries: around 11 per cent of the national caseload, compared with 7 per cent in high-income countries⁸.

Exploring the possibility of children transmitting the virus, in a French chalet cluster, 11 out of 15 contacts tested positive with a 75 per cent attack rate. One case occurred in a child who was also co-infected with other respiratory viruses. He attended three schools and ski classes, yet did not transmit the disease to his classmates⁹. Another study conducted in 15 schools in Australia found a transmission rate of 0.23 per cent for the coronavirus-19 between the infected children and their close contacts whereby 18 confirmed cases in 15 schools resulted in only two additional transmissions among 881 close contacts¹⁰. This seems to suggest different transmission dynamics and that children might not be an important source of transmission of this novel virus.

Current data seems to suggest that children do not play a major role in household transmission of Covid-19 whereby only three (9.7 per cent) out of 31 household transmission clusters in China, Singapore, South Korea, Japan, and Iran were identified as having a paediatric index case. This is unlike other infections, like influenza virus, where 54 per cent (30/56) of transmission clusters identified children as the index case¹¹.

There are evidences to suggest that children are not being severely affected by Covid-19. Although clinical signs and symptoms in children are comparable to those in adults, they are milder and a large percentage of asymptomatic carriers are found among children and they have a far better outcome compared to adults⁵. A

study that included 2173 children, only one child (aged 14 years) died, but the proportion of severe and critical cases was 10.6% among infected infants, and this decreased with increasing age to 3.0% for infected 16–18-year-olds¹².

Evidences for the effectiveness of school closures

Previous modelling studies indicated that school closure is effective for infection control only when the outbreaks are due to viruses with low transmissibility and attack rates are higher in children than in adults that applies to influenza viruses but may not seem valid for coronaviruses, including SARS-CoV-2, which have different transmission dynamics, or for Covid-19, which affects mainly adults and elderly individuals¹³.

In a recent systematic review, Viner et al showed that there are no data on the relative contribution of school closures to SARS-CoV-2 transmission control. Data from the SARS outbreak in mainland China, Hong Kong, and Singapore suggest that school closures did not contribute to the control of the epidemic³. In addition to that, a recent modelling studies of Covid-19 predict that school closures alone would prevent only 2–4% of deaths, much less than other physical distancing interventions³.

Principles of schools re-opening

Although limited, studies so far indicate that susceptibility to infection increases with age (highest more than 60 years old) and growing evidence suggests children are less susceptible, are infrequently responsible for household transmission and are not the main drivers of this epidemic. This informs us that the vast majority of children can attend schools quite safely.

Many would agree that our children needs to be schooled and nurtured. The school setting is still the tested and proven teaching ground. Home based learning through new technology during the

lockdown is still in its infancy and the impoverished communities are deprived due to lack of access to cost prohibitive facilities.

With the goal of having students physically in schools as advocated by the American Academy of Paediatrics, while balancing the odds that we know it is safe for children to return to school we also need to put in place measures to reduce transmission. Attention to personal hygiene, safe physical distancing, use of mask would help to mitigate this¹⁴⁻¹⁶. This needs to be supplemented with careful infection control activities in schools and rapid response to potential case with prompt testing and a robust contact tracing system. Guidance from public health officials that include strict adherence monitoring and cleaning and disinfecting protocols, providing sufficient personal protective equipment for teachers, staff and students, implement new procedures for transporting students to school, ensure that students competing in extracurricular activities are safe, and adjust staffing schedules¹⁷. The tasks are difficult but essential, hence good partnership between ministry, schools, teachers, parents and students will ensure these challenges will be faced together.

Conclusion

Education is one of the strongest predictors of the health and wealth of a country's future. The shutting of schools during the pandemic has impacted many countries in many ways. The available evidence suggests low transmission risk from children to others hence the overall impact of school closing on mitigating Covid-19 spread of infection in the community seemed to be not as effective and could make guidance for school re-opening less complex. Given predictions that physical distancing measures might need to be in place for the long run there is an urgent need for policy makers and researchers to look into effective physical distancing interventions that are much less disruptive

than full school closure on top of the readily available guidance by the public health authorities.

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COVID-19 PANDEMIC AND THE RACE FOR A VACCINE

Ammar K. Daoud*

Abstract

Although wearing masks and physical distancing are the current most effective strategies against the COVID-19 pandemic, hopes are high for a vaccine that can prevent it from spreading as a definite and long term solution. To be effective or successful, the vaccine has to be protective against the disease by inducing long term immunologic memory, harmless to healthy people when given and manageable in distribution and costs. Previous experiences with SARS-Cov-1 and MERS-CoV vaccine trials have helped to facilitate and provided some framework for an accelerated program for SARS-Cov2 vaccine. There are multiple strategies for vaccine development with advantages and disadvantages for each one of them. There are huge costs involved for the development and production of a vaccine for the whole world, but also a huge reward from a successful vaccine resulting in a fierce race worldwide with intense competitions and collaborations. The scientific world should participate in the development of a vaccine and collaborate in the establishment of its efficacy and safety, according to the capability of each country with transparency and rigorous scientific methodology. This review of the SARS-CoV-2 virus vaccine is challenging as new information unfolds continuously and various vaccine candidates are being experimented.

Keywords: SARS-Cov2, Covid-19, Vaccine, Immune Response.

Introduction

From an Islamic perspective, saving a single life is like saving the whole of humanity.

"مِنْ أَجْلِ ذَلِكَ كَتَبْنَا عَلَىٰ بَنِي إِسْرَائِيلَ أَنَّهُ مَنْ قَتَلَ نَفْسًا بِغَيْرِ نَفْسٍ أَوْ فَسَادٍ فِي الْأَرْضِ فَكَأَنَّمَا قَتَلَ النَّاسَ جَمِيعًا وَمَنْ أَحْيَاهَا فَكَأَنَّمَا أَحْيَا النَّاسَ جَمِيعًا وَلَقَدْ جَاءَتْهُمْ رُسُلُنَا بِالْبَيِّنَاتِ ثُمَّ إِنَّ كَثِيرًا مِّنْهُمْ بَعْدَ ذَلِكَ فِي الْأَرْضِ لَمُسْرِفُونَ"

"Because of that, We decreed upon the Children of Israel that whoever kills a soul unless for a soul or for corruption [done] in the land - it is as if he had slain mankind entirely. And whoever saves one - it is as if he had saved mankind entirely. And our messengers had certainly come to them with clear proofs. Then indeed many of them, [even] after that, throughout the land, were transgressors". Al Maidah Surah 5 Verse 32.

Saving live, health and wealth are among three of the key objectives of Islamic jurisprudence (*maqasid shari'ah*). If this can only be achieved through international cooperation and partnership, then this collaboration becomes obligatory (واجب). These principles have to guide our actions and responses to initially flatten and eventually neutralize the COVID-19 pandemic curve.

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Historical Background

Greek historians noted that those who survived small pox were not re-infected. Ar-Razi wrote the first monographs on small pox and measles. In 900 AD the Chinese discovered variolation which prevented small pox by exposing healthy people to small pox scabs. In the 1700s, Turkish physicians used variolation to immunize against small pox and this practice became more widely used. Lady Mary W. Montague brought this idea back to the United Kingdom. It was Edward Jenner's inoculation experiment with cowpox (vaccinia) in 1796 which successfully induced immunity against small pox. The word vaccine came from the Latin origin for the word cow as it was the cowpox virus that was used to protect against the smallpox virus. Vaccination had huge effects and success in saving lives and preserving health against many vaccine preventable diseases. The world has been able to eradicate and eliminate many diseases through the WHO Expanded Programme on Immunisation. Smallpox is more severe than COVID-19 in terms of morbidity and mortality and the WHO was able to eradicate it with a global vaccination campaign. And the global scientific community is very hopeful of a similar vaccine strategy to eliminate the COVID-19 pandemic.

It is estimated that for each 10 vaccines trials in development only 1 is successful till the end and that there is a high failure rate. Even with worldwide commitment and support, vaccines against the HIV or the malaria parasite have proved to be difficult and has thus far been unsuccessful. Previous work for vaccines has been reported to be successful for coronaviruses in birds, cats and dogs¹.

Vaccine Principles and Considerations:

The classical consideration for vaccine states that **“The fundamental principle of vaccination is to administer a killed or attenuated form of an infectious agent, or a component of a microbe, which does not cause disease but elicits an immune response that provides protection against infection by the live, pathogenic microbe”².**

The success of any substance to work as a vaccine is measured by 3 factors: -

- a) Ability to induce protective long term cell mediated or antibody immunity against the pathogen (or toxin or antigen)
- b) Acceptable safety profile in not causing disease in the general population that needs to be protected
- c) Ability to manufacture, distribute and deliver the vaccine to large enough portions of the population to produce herd immunity

There are 8 main strategies to develop a vaccine, with live attenuated virus being the strongest in provoking an immune response. Figure 1 from the reference of Nature Reviews³ summarizes the current status, with 159 candidate vaccines from all strategies in different phases of development. Vaccines are usually either from killed or live attenuated, DNA or RNA components, native protein or recombinant proteins or replicating viral or bacterial vectors. The mere presence of an immune response after a vaccine is not enough to establish that it is protective until the recipient is exposed to the wild type pathogen and is conferred protection from disease and develops immunity for a long enough period. Vaccines with live attenuated viruses e.g measles, mumps, rubella and varicella have been shown to

confer long term immunity, maybe even lifelong⁴.

Since the vaccine is given to a healthy population, adverse effects should be kept to the bare minimum and only minor in nature to ensure safety of the vaccine. Current numbers of volunteers for the efficacy stage are not large or diverse enough to detect all potential side effects that might occur with the wide use of the vaccine. The world is in a race with notable collaboration between different countries to speed up the process of producing an efficacious and safe vaccine. In this respect, the United States of America have issued a liability preventive measure to speed up the process. On 4 February 2020, the U.S. Secretary of Health and Human Services Alex Azar published a notice of declaration under the Public Readiness and Emergency Preparedness Act for medical countermeasures against COVID-19, covering "any vaccine, used to treat, diagnose, cure, prevent, or mitigate COVID-19, or the transmission of SARS-CoV-2 or a virus mutating there from", and stating that the declaration precludes "liability claims alleging negligence by a manufacturer in creating a vaccine, or negligence by a health care provider in prescribing the wrong dose, absent willful misconduct". The declaration is effective in the United States through to 1 October 2024².

Conclusions

The only alternative to loosening the current practice of masking and physical distancing to mitigate the transmissibility of the COVID-19 is the roll out of an effective and safe vaccine which confers protection for a considerable period of time. And which can be distributed at an affordable cost to the world population to achieve herd immunity. All of these aspects can only be achieved by proper clinical trials and rigorous scientific methods, accelerated yet very closely monitored and regulated by both national and international regulatory authorities.

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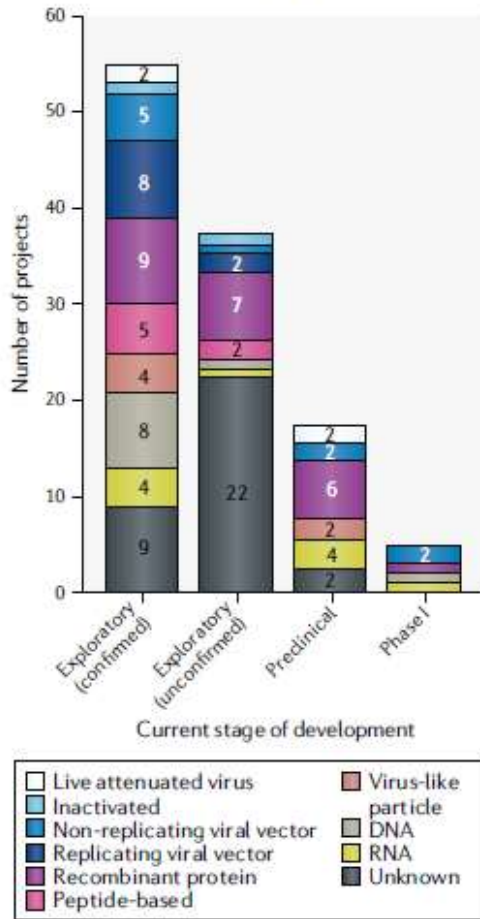


Fig.1: Pipeline of COVID-19 vaccine candidates by technology platform.

Exploratory projects (split into confirmed and unconfirmed) are in the early planning stage with no in-vivo testing, and preclinical projects are at the stage of in-vivo testing and/or manufacturing clinical trials material.

THE DEVELOPMENT OF VACCINES FOR COVID-19

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Abstract

SARS-CoV-2 is the name of the virus that causes corona virus disease 19 or known as COVID-19. The disease has spread rapidly from the first known cases in Wuhan, China in December 2019 to countries around the world and subsequently declared a pandemic on 11th March 2020 by the World Health Organisation (WHO). By the middle of July 2020, the statistics from Johns Hopkins University declared that there were close to 13.5 million confirmed cases of COVID-19 in all countries around the globe, with estimated deaths approaching nearly 600,000¹. In response to this global health crisis, many scientists are working on developing a corona virus vaccine in an attempt to stop the pandemic. At the time of writing this article, there are more than 163 candidate vaccines being tested at various stages of development².

Keywords: COVID-19, vaccine development, successful vaccination, challenges.

The importance of the corona virus vaccine

It is well known that SARS-CoV-2 spreads easily, hence the majority of the world's population is vulnerable to it and will get infected. With an estimated death rate at around 1%, the mortality numbers world-wide is potentially colossal. A suitable vaccine would be able to provide some protection by training the recipients' immune systems to fight the virus, thus preventing them from developing the disease and becoming unwell³.

Typically, vaccines harmlessly present the virus or even small parts of it to the recipient's immune system and the body's defences would treat it as an invader and learn how to fight it. If the body is ever exposed to SARS-CoV-2 for real, it has the advantage of a prior experience and is able to deal with it well to prevent an infection.

The conventional method of a vaccination is to make use of the original virus but in a weakened state hence the prospect of a full-blown infection is avoided. Examples include the measles, mumps, and rubella (MMR) vaccine which is manufactured using weakened viruses. This is also similar to our seasonal flu jab that incapacitates the main strains of the prevalent circulating flu virus to then be used as vaccines³.

The global work on a new corona virus vaccine has taken a somewhat different path. This is made possible by the knowledge of the genetic code of the new corona virus SARS-CoV-2. Since scientists have the complete genetic blueprint to build parts of the virus for the vaccines, they harness a new, but a less tested approach called "plug and play" vaccines.

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Medical treatment and vaccination in Islam

Seeking treatment for a disease is highly advocated in Islam because preservation of life is an objective of *Shari'ah* (*maqasid shari'ah*). The act of seeking treatment implies the effort made to preserve life, and this is supported by many sayings of the Prophet (PBUH). One such *hadith* is from *Usamah bin Syarik* in which he narrated an account of a *Bedouin* who once asked the Prophet (PBUH):

قَالُوا: يَا رَسُولَ اللَّهِ، أَنْتَدَاوَى؟ قَالَ: «نَعَمْ يَا عِبَادَ اللَّهِ تَدَاوُوا، فَإِنَّ اللَّهَ عَزَّ وَجَلَّ لَمْ يَضَعْ دَاءً إِلَّا وَضَعَ لَهُ شِفَاءً، غَيْرَ دَاءٍ وَاجِدٍ»، قَالُوا: وَمَا هِيَ يَا رَسُولَ اللَّهِ؟ قَالَ: «الْهَرَمُ».

"O Rasulallah, should we seek treatment? And Rasulallah said, Seek treatment, for Allah will not send an illness, except that He has also sent with it a cure, save for one illness. Then they asked again: And what is that illness? The Prophet (PBUH) answered: Old age.⁴

The act of taking a vaccination is a pre-emptive action of preventing an individual from the infection by the virus or bacteria, hence eliminating the chances of the disease occurrence. The end result is to achieve a similar objective of *Shariah* that is the preservation of life, ensuring that the body is free of the disease. As with seeking treatment for a disease, adoption of early preventive measures are also highly recommended in Islam and had been practiced in the time of the Prophet (PBUH) among his companions. The Prophet(PBUH) once said:

قال رسول الله -صلى الله عليه وسلم- : "من تصبّح بسبع تمرات عجوة لم يضره ذلك اليوم سم ولا سحر"
"Whoever consumes seven pieces of Ajwah dates every morning, he would be protected from poison and black magic on that day"⁵.

Approaches to create the vaccines

Scientists working to develop a corona virus vaccine are pursuing a number of different approaches to reach the target: live vaccines, inactivated vaccines, protein subunit vaccines, and gene-based vaccines^{6,7,8}.

Live vaccines

This approach starts with the virus itself but is harmless and therefore able to rapidly multiply in the recipient's body to trigger the appropriate immune responses but will not cause the disease.

Scientists make this work by employing genetic engineering to camouflage these viruses as SARS-CoV-2 by inserting a corresponding surface protein to them, this is a particularly good approach to fight new types of pathogen. When an individual is given the vaccine, their body builds up immunity. This protection enables it to ward off actual infection by the disease. A vector vaccine of this kind was used against smallpox, and the first approved Ebola vaccine is also based on a vector virus.

Inactivated vaccine

This approach employs vaccines that contain selected viral proteins or inactivated viruses. They are essentially dead pathogens and these dead viruses can no longer multiply, but the body still recognizes them as intruders. As a result, a spectrum of immune responses to the vaccine are triggered to ensure that antibodies are produced, but the vaccinated individual does not develop the disease. This method is well known and has been proven to be successful in combating diseases such as influenza, polio, whooping cough, hepatitis B, and tetanus.

Gene-based vaccines

The gene-based vaccines basically contain pure genetic information in the form of coronavirus DNA or mRNA. These individual parts of genetic information from the pathogen are packed into nanoparticles and introduced into cells and once the vaccine is given, it should form harmless viral proteins in the recipient that build up immune protection.

There is a clear advantage of this technique to the pharmaceutical industry in that compared to inactivated vaccines with viral proteins, the gene-based vaccines can be produced quickly. This is crucial as once a successfully tested and effective vaccine to COVID-19 is produced, billions of doses are needed to protect the people in the planet to achieve herd immunity and done in the shortest possible time. The downside is that there has never been such a vaccine on the market to attest to its success.

Protein subunit vaccines

Instead of presenting to the recipient’s B-cells the entire pathogen, protein subunit vaccines only present the body parts of the virus. For Covid-19, most scientists concentrate on the spike protein that SARS-CoV-2 virus uses to enter our cells. The idea is that by showing B-cells that characteristic protein, they will be able to recognize it on the pathogen itself. Protein subunits vaccines are incapable of a full-blown infection but the immune responses they produce get weaker over time, which means that a person may require boosters throughout their life. Some annual flu vaccines take the form of protein subunits, as does the HPV vaccine. The downside thus far, none of the protein subunit vaccines have made it to testing in humans.

Summary of the pros and cons of the approaches^{5, 6, 7}

APPROACH	PROS	CONS
GENE-BASED VACCINES	Easy to make the vaccine target once genetic sequence is known. Easy for companies to manufacture	Still largely experimental for human use
INACTIVATED VACCINE	Proven approach Vaccines around for decades	Hard to make. Slow process Difficult scale up Immunity may fade, requiring boosters
LIVE VACCINES	A living virus should mount strong immune response against SARS-CoV-2. Longer, robust, and durable One vaccine is enough	Still experimental. Recipients immune to adenoviruses may not mount adequate response.
PROTEIN SUBUNIT VACCINES	Familiar approach Tested before Side effects less likely as only a piece of the virus is used.	Since only a piece of a virus is used immune response may be low May multiple shots to build up enough immunity

How many people need to be vaccinated?

This is a very important question because a successful vaccination programme must be effective at stopping the spread of the virus

(known as $R_0 < 1$ where R_0 is the reproductive number) or when the world population has achieved a stage called the herd immunity. The simple truth is that it is difficult to answer the question without

knowing how effective the vaccine is going to be for the purposes of vaccination. It is likely however that billions of people in the world would have to be vaccinated to stop the virus from spreading, or about 70% of the world population.

It is expected that the vaccine would be less successful in the elderly population simply because their immune systems would be less responsive to the vaccines to help the body from the actual infection by SARS-CoV-2. This phenomenon may sometimes be circumvented by giving multiple doses to allow time for the body to be trained for the infection or supplemented by another agent to give the immune system a boost.

Once the vaccine is available, there is also the question of who should get the vaccine first. Healthcare workers should get the vaccination in the first instance as they are directly involved in the front line to care for COVID 19 patients. The next consideration should be directed at the most vulnerable to this infection that is the elderly population and included in that are their immediate carers because if they become infected, they will be spreading the virus to the vulnerable people they are looking after.

Time required for the creation of a vaccine

The time required for the creation of a vaccine tends to vary depending on the person who makes the prediction. A minimum duration of 12 to 18 months required would usually be the estimation coming from scientists pursuing this effort, but politicians or businessmen however wish the vaccines would arrive within months. The truth unfortunately does not lie in the middle but with the scientists. The chair of the World Health Organization's Global Outbreak Alert and Response Network, Dale Fisher for example predicted that the vaccine would only arrive at the end of 2021⁹.

The reason for this is quite simple, foremost the vaccine must be safe because it is to be given to healthy individuals and second it must be effective to stop COVID 19 infection. The timeline for the production of a corona virus vaccine must go through these many steps in place to ensure that it is safe and effective. A vaccine must successfully complete the following series of clinical trials:

Phase I: This evaluates the vaccine's safety and ability to generate an immune system response in a small group of people.

Phase II: This tests many people, possibly hundreds, to determine the right dosage levels.

Phase III: This tests thousands of people to analyse the safety and effectiveness of the drug.

Lockdowns could make this process slower as successful lockdowns mean fewer people are infected, consequently it will take longer to know whether a vaccine actually works. There is the idea of giving people the vaccine and then deliberately infecting them (known as a human challenge study) which would give quicker answers, but that may be seen as dangerous when COVID 19 has no known treatment and much of the disease is still vague.

What progress is being made?

The search for a vaccine is taking place at breakneck speed. As of May 2020, there are 125 groups around the world working on a potential vaccine with eight candidates now in either Phase I or II clinical trials, and 114 in preclinical evaluation.¹⁰

The table below summarises the leading vaccines and their stages of developments (*adopted from WHO*)¹⁰.

PLATFORM	CANDIDATE VACCINE	DEVELOPER	CURRENT STAGE OF CLINICAL EVALUATION	OTHER CORONAVIRUS CANDIDATES
Non-Replicating Viral Vector	Adenovirus Type 5 Vector	CanSino Biological Inc./Beijing Institute of Biotechnology	Phase 2 Phase 1	Ebola
RNA	LNP encapsulated mRNA	Moderna/NIAD	Phase 2 Phase 1	multiple candidates
Inactivated	Inactivated	Wuhan Institute of Biological Products/Sinopharm	Phase ½	
Inactivated	Inactivated	Beijing Institute of Biological Products/Sinopharm	Phase 1/2	
Inactivated	Inactivated + alum	Sinovac	Phase 1/2	SARS
Inactivated	Inactivated	Institute of Medical Biology, Chinese Academy of Medical Sciences	Phase 1	
Non-Replicating Viral Vector	ChAdOx1-S	University of Oxford /AstraZeneca /Serum Institute of India	Phase 1/2	MERS, influenza, TB, Chikungunya, Zika, MenB, plague
Protein Subunit	Full length recombinant SARS CoV-2 glycoprotein nanoparticle vaccine adjuvanted with Matrix M Novavax	Novavax	Phase 1/2	RSV; CCHF, HPV, VZV, EBOV
RNA	3 LNP-mRNAs	BioNTech/Fosun Pharma/Pfizer	Phase 1/2	
DNA	DNA plasmid vaccine with electroporation	Inovio Pharmaceuticals	Phase 1	multiple candidates

Prerequisites of a successful vaccination programme

Once a vaccine is clinically shown to be safe and the trials have demonstrated that the vaccine provokes an immune response which would protect people from getting the disease, the vaccine must then be submitted to the appropriate regulatory authority to be given the green light before it can be used. This process is usually complex and lengthy but under current extraordinary circumstances it is envisaged that this phase of vaccine development will be expedited.

The next phase is the building of a massive infrastructure required to produce the vaccine on a scale that the world has never

seen before, billions of doses at the shortest possible time, a feat never done before. Finally, there will be the huge logistical challenge of actually inoculating most of the world's population.

Global vaccine access for a successful vaccination in a pandemic

The issue of global access to the vaccine is crucial because the effort to stop COVID 19 will only be successful if everyone in the world has access to the vaccine. This can only be achieved through serious international cooperation to work out details of the joint effort. One such example was a conference on 4th of May 2020, an online international donor conference held in Brussels¹¹. It received pledges from

many world leaders of over \$8.07 billion for the development of vaccines, including drugs and tests administration. The conference was led by Ursula von der Leyen, the president of the European Commission who invited countries around the world to join the cooperation and donate to the fund.

Another example, in 2016 World Economic Forum (WEF) in Davos, Coalition for Epidemic Preparedness Innovation (CEPI) Foundation was established to help countries around the world develop vaccines¹². CEPI is one of the key institutions supporting many of the ongoing research projects toward this end and effort to combat many other emerging new infectious diseases. It is imperative that poor defenceless countries are protected against epidemics especially after the experience with Ebola. Governments such as Norway and India have joined forces with the Bill and Melinda Gates Foundation, the WEF, and the British Welcome Trust to further this cause. More and more countries are now joining the bandwagon by supporting the foundation with public funds, including Germany, Australia, Belgium, Canada, Denmark, Ethiopia, Japan, Saudi Arabia, the Netherlands, and Switzerland. Donations are also received from other public institutions, private, philanthropic, and civil society organisations, to finance their projects. CEPI is currently partly funding the development of at least eight vaccines by various companies around the world.

Facing a pandemic

Muslims view any form of affliction, including a disease pandemic, as a test from Allah that promises great rewards to those who face them with patience and submission. The Holy Quran says:

"الَّذِي خَلَقَ الْمَوْتَ وَالْحَيَاةَ لِيَبْلُوَكُمْ أَيُّكُمْ أَحْسَنُ عَمَلًا وَهُوَ الْعَزِيزُ الْعَفُوفُ"

"Who has created death and life that He may test you which of you is best in deeds"¹³

This verse reminds us that Allah who had created life and death, and whatever is in it from the afflictions, in order to test us, which one of us is better in deeds than others. For a believer, the acknowledgment of God's total control over everything in this world turns them to God for assistance and solace. Muslims are therefore reminded in the following verse in the face of any calamity:

"الَّذِينَ إِذَا أَصَابَتْهُمْ مُصِيبَةٌ قَالُوا إِنَّا لِلَّهِ وَإِنَّا إِلَيْهِ رَاجِعُونَ"

"Who, when disaster strikes them, say, 'Indeed we belong to Allah, and indeed to Him will return,'"¹⁴

As Muslims believe that life and death are determined by the will of God, similarly the current pandemic of Covid-19 should be regarded as an integral part of God's plan. Muslims accept the suffering or even death as a form of test. Instead of complaining, he chooses to sincerely seek Allah's forgiveness and turns to Allah in all of his affairs as the calamity could also serve as a warning from Allah for wrongdoings as highlighted in following verses:

"وَمَا أَصَابَكُمْ مِنْ مُصِيبَةٍ فِيمَا كَسَبْتُمْ أَنْبِئْكُمْ وَبِعُذُو عَنْ كَثِيرٍ"

"And whatever of misfortune befalls you, it is because of what your hands have earned. And He pardons much."¹⁵

Muslims should maintain good thoughts about Allah and spread positivity in times of calamity. Despite the trial, Muslims should always be looking forward to His blessings and forgiveness.

"None of you should die without having good expectations in Allah"¹⁶.

What matters to Muslims in times of hardship is how to deal with the test from God. With the correct attitude and action, the ultimate outcome is to gain blessings and forgiveness from The Almighty.

Allah (SWT) mentions in the Glorious Quran:

"وَقَطَعْنَا لَهُمْ فِي الْأَرْضِ أُمَّمًا قَنَهُمُ الصَّالِحُونَ وَمِنْهُمْ دُونَ ذَلِكَ وَبَلَوْنَاهُمْ بِالْحَسَنَاتِ وَالسَّيِّئَاتِ لَعَلَّهُمْ يَرْجِعُونَ"

"And We divided them throughout the earth into nations. Of them some were righteous, and of them some were otherwise. And We

tested them with good [times] and bad that perhaps they would return [to obedience]”¹⁷

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POST COVID-19: THE NEW NORMAL

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There is a saying that sometimes a thousand years go by and only one or two weeks worth of newsworthy activity takes place, but other times in the space of a few days it feels like a thousand years worth of events have taken place.

I am writing this two months after the beginning of the Covid-19 pandemic. These past two months have felt a little like the latter. The pandemic has changed so much in a world that was increasingly globalized, hyper-capitalistic and felt like the only limits on us were those we imposed on our selves.

No more.

It is clear that every single industry, every country and every strategy will have to change to take into account COVID-19. Even with massive changes, this will not be enough to save many lives and many fields.

So what will this less-brave new world look like? Well, nobody knows for certain, but it is being built right now by those with the vision to dream it and the will to see it into fruition.

For us, as Muslim healthcare professionals, the post-COVID-19 world must be the following:

1. More united. In a globalized world, working almost exclusively within national borders is nonsensical. Viruses do not respect borders, so our response should not either.
2. Grassroots not top down. The gap between healthcare professionals and the general public cannot be as wide as it was and is. We need to speak to the grassroots in plain language and make them understand key health messages as well as or better than any entertainer or politician.
3. Embrace social media. Healthcare workers may individually be on social media, but as a field we have treated the social media revolution with disdain. Hardly any medical school in the world teaches it despite it being far more relevant to people's lives than many of the rarer diseases we learn in great detail. If we are not on board with the revolution, we will be crushed by it as can be seen by how poorly we have dealt with the anti-vaccine movement and the conspiracy theories popping up regarding the pandemic.

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4. Be relevant not arrogant. The pandemic has exposed the research and academic sections of the medical community for what they are. This may be a gross generalization, but anyone involved in research knows that it's less about scientific breakthroughs and more about chasing the funding or degree. Hundreds of thousands of medical students and junior doctors are employed in research that dares not push the envelope because the system is not built for innovation and rewards those that slavishly chase the funding. That is why we are so woefully underprepared in any way for a virus that we knew was on the cards for over a century.

5. Learn from history. We have known that this pandemic was going to happen. I have been teaching this to medical students for more than 8 years. However, despite having 102 years to prepare - we did nothing. This is because current medicine is divorced from our history. We do not learn it in our medical schools, nor do we discuss it post-graduation. As the saying goes,

if you fail to learn from history then you will be condemned to repeat it. Never again.

6. It is time to lead; Healthcare workers are natural born leaders. We make literal life or death decisions daily, have excellent communication skills and have the analytical abilities of Sherlock Holmes who was, after all, based on a Doctor. Yet, we leave the leadership of our nations and the world to lawyers, soldiers, businessmen and politicians. No more. In a post-COVID-19 world, we must take our place as leaders too so we can build a more balanced, healthier and safer world.

The new normal will be different for everyone. However, the medical profession needs to ensure that in our zeal to set the parameters for everyone else, we do not forget that the new normal applies to us too. It will be a new world we step into. The only question is whether it is a better one or not.

The choice is ours.

RETHINKING BEYOND REPRODUCTIVE NUMBER (RO) AND LOCKDOWNS

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Abstract

There is growing evidence that super spreading persons and events are part of the features of COVID-19 transmission. Multiple studies have suggested as few as 10 to 20 percent of infected people may be responsible for as much as 80 to 90 percent of transmissions, and that many people barely transmit it. Understanding this better, considerations in applying lockdowns and various permutations of movement restrictions may change, recognising that over-dispersion, super-spreading and clustering are key modes of transmission of COVID-19. With Covid-19 cases continuing to surge throughout much of the world, we also need to shift our attention from a narrow focus on the analytic sensitivity of a test to the more relevant measure of a testing regimen's sensitivity to detect infections in order to allow prompt isolation of cases and containment of the virus within the community.

Keywords: Covid-19, pandemic, coronavirus, lockdown, super spreading, dispersion, cluster.

Introduction

The lay public is now much familiar with the Reproduction Number (Ro). More recently, with the explosive COVID-19 cases, the Malaysian Ministry of Health did a modelling based on the Ro to predict the possible future outcomes of the outbreak. (see Diagram I).

The irony being, the coronavirus does not have a track record of behaving as an average pathogen in terms of its transmissibility. In other words, the Ro being an average measure of the bug's contagiousness does not quite explain the phenomenon of clustering and super-spreading.

Reported super-spreader clusters globally

The index patient of the Hong Kong SARS-CoV-1 outbreak in the 2003 epidemic was associated with at least 125 secondary cases, yet the Ro of SARS-Cov-1 is 3. The MERS-CoV outbreak in South Korea, the second largest outside the Middle east, can be traced to three infected individuals who caused 75% of the total 166 cases, yet the Ro of MERS-Cov is less than 1¹.

A better explanation of this phenomenon is the dispersion factor k . Simply put, the SARS-CoV-2 like its predecessors, does not behave in a steady manner, instead infects in big bursts, where an infected person may spread to many persons all at once. It has been described as an over-dispersed virus which spreads in clusters ².

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Many reports in Asia testify to this fashion of COVID-19 transmission. In Indonesia, 80% of transmissions were due to 10-15% of infected persons³. Hong Kong with its meticulous testing and contact tracing, reported that 19% of cases were responsible for 80% of transmissions, while 69% of cases did not infect another person⁴. In South Korea, index patient number 31, generated 5,000 cases in a church cluster⁵. A massive study from India, which looked at 85,000 cases and 600,000 contacts concluded that 5% of cases was responsible for 80% of transmissions⁶. This jives very well with the 20/80 Pareto Principle whereby 20% of actions is responsible for 80% of the outcomes.

The Malaysian Experience

We need to think beyond Ro and recognize that the majority of infected people barely spread it, but a few super-spreading persons and events caused most of the COVID-19 clusters. And Malaysia similarly had a wealth of painful COVID-19 experiences in this respect. *Early in the pandemic, the Jemaah Tabligh had their 'Ijtima'* (gathering) in Malaysia from 28 Feb – 1 March 2020. It triggered the second wave of COVID-19 in Malaysia. It became the South East Asia hotspot spreading to Brunei (50 cases), Cambodia (13 cases), Singapore (5 cases) and Thailand (2 cases). And 700 participants from Vietnam, the Philippines and Indonesia were investigated. The Tabligh cluster of 3,375 cases made up a quarter of the total COVID-19 cases in Malaysia. It contributed to 23% of deaths and it spawned 2 sub-clusters causing 121 cases. It has spread deep into the community with five generations of spread⁷.

During the second wave, index patient number 26 spread the infection to 114 cases and the transmission has passed to 4 generations⁸.

The 'Sivagangga' Cluster originated from an index case that returned from India who super spread to 45 persons in Kedah, Perlis

and Penang and spawned 3 generations⁹. The 'Tembok Cluster' of prison inmates in Alor Setar, has now chalked 1,047 cases and has overtaken another clusters of prison inmates 'Benteng Cluster' in Lahad Datu in the east of Malaysia.

Recognising over-dispersion, super-spreading and clustering as a key mode of transmission of COVID-19 would make us rethink a generic lockdown or Movement Control Order (MCO) as the panacea to our present upsurge of cases. Unfortunately, this MCO-centric mindset has pervaded our thought processes and a point in case is the approach to the prison outbreaks and the imposition of Targeted Enforced MCO (TEMCO). Experts have called for the decongestion of the prison and offered ingenious ideas on decarceration. The prison ambience is the ideal environment for the interplay of the 3Cs of super-spreading namely close, crowded and confined evidence by the rapid increment of cases within a short span of time. Within a space of 24 hours the 'Tembok Cluster' in Alor Setar prison added another 394 cases (6 October 2020)¹⁰.

Apart from prisons, hospitals, nursing homes, mosques, churches, mass transportation, enclosed offices, squatter housing and migrant worker dormitories are documented sites of super-spreader events¹.

We were doing very well and our numbers were in single digits until our recently staged coup in Sabah and the inevitable re-elections that messed up our COVID-19 success story. Politicians, their entourage, and the election campaigns are both super-spreader persons and events. Poor pandemic leadership, both civil and political, failed to proactively neutralize the potential hazards of this COVID-19 time-bomb which has now tipped the nation into a seemingly uncontrolled situation and a near-disaster.

No quarantine, no retesting, no tagging, and no tracking of returnees from the recent elections or travel to Sabah, has imbued a false sense of security and has unleashed

the third wave of COVID-19 with widespread community spread throughout the country¹¹.

The 'Menteri' Cluster has virtually confined the cabinet members to their homes not unlike the situation in the White House. It is utterly frustrating when the citizens had been repeatedly told to follow the recommendations of the Ministry of Health and who in the main complied, but the leaders who were not walking the talk were let off scot-free.

New Testing Strategy

We should also be thinking differently on testing in our efforts to control and contain the outbreaks. There is a major reliance on rt-PCR as the assay of choice. And undoubtedly, rt-PCR is the gold standard for clinical diagnosis, and prior to instituting anti-viral and therapeutics. It therefore has High Analytic Sensitivity (HAS) to detect low viral load as found during the pre-infectious (early) and convalescence period (see Diagram II). But it is expensive, limited to big laboratories and the turnaround time slow (TAT between 1-4 days). This High Analytic Sensitivity rt-PCR test cannot be frequently done because it is expensive and labour intensive and therefore it is a Low-Frequency Testing (LFT)¹².

The Rapid Test Kit-Antigen (RTK-Ag) has a relatively lower analytic sensitivity (85% versus 95% sensitivity of rt-PCR) but it has an accurate infection sensitivity. Therefore, RTK-Ag is an accurate assay for contagiousness which is key to stopping the transmission of infection with accurate diagnosis and immediate quarantine. For the purposes of surveillance, we need a paradigm shift from High Analytical Sensitivity and Low frequency Testing (eg rt-PCR) to Low Analytic Sensitivity and High-Frequency Testing (eg RTK-Ag). RTK-Ag is probably 10 times cheaper than rt-PCR, it is much simpler and can be done at the Point Of Care. The turnaround time is rapid between 30-60 minutes. It can be

repeatedly done and is a very powerful assay to utilize in mass and universal testing.

Conclusions

The SARS-CoV-2 is an over-dispersed virus and spreads in outbursts causing clusters of infections. Efforts to identify super-spreader persons and events, isolating them or preventing the events from taking place would be a more effective strategy than a generic lockdown. Shifting the testing strategy from High Analytic Sensitivity and Low frequency Testing (eg rt-PCR) to Low Analytic Sensitivity and High-Frequency Testing (eg RTK-Ag) is far cost-effective, it would pick up asymptomatic cases, enhance tracking, ensure early isolation and quarantine, which would contribute towards a better and smarter strategy of cluster busting and the containment of COVID-19 whilst avoiding MCOs which hurts livelihoods and depresses the national economy.

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Diagram I: Daily reports of COVID-19 cases and projections of future cases based on Reproduction Number (R0)

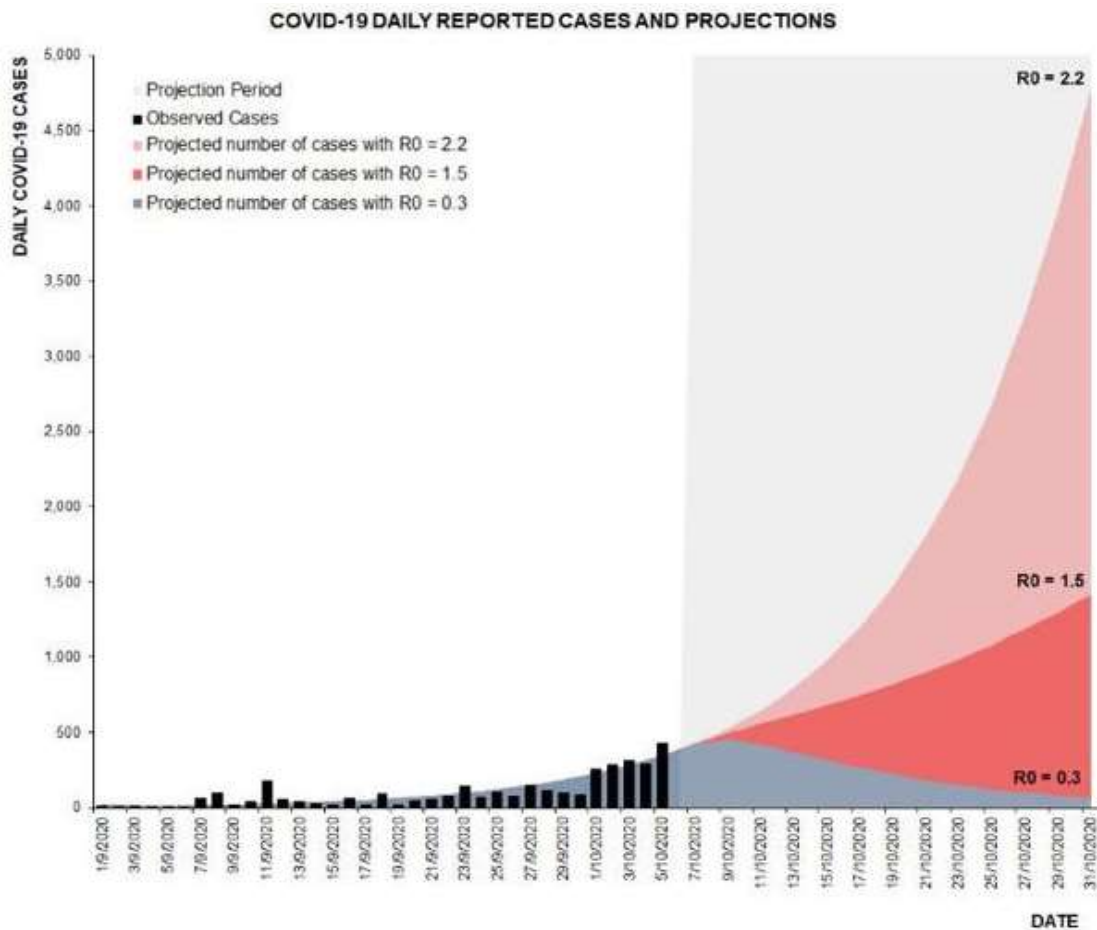
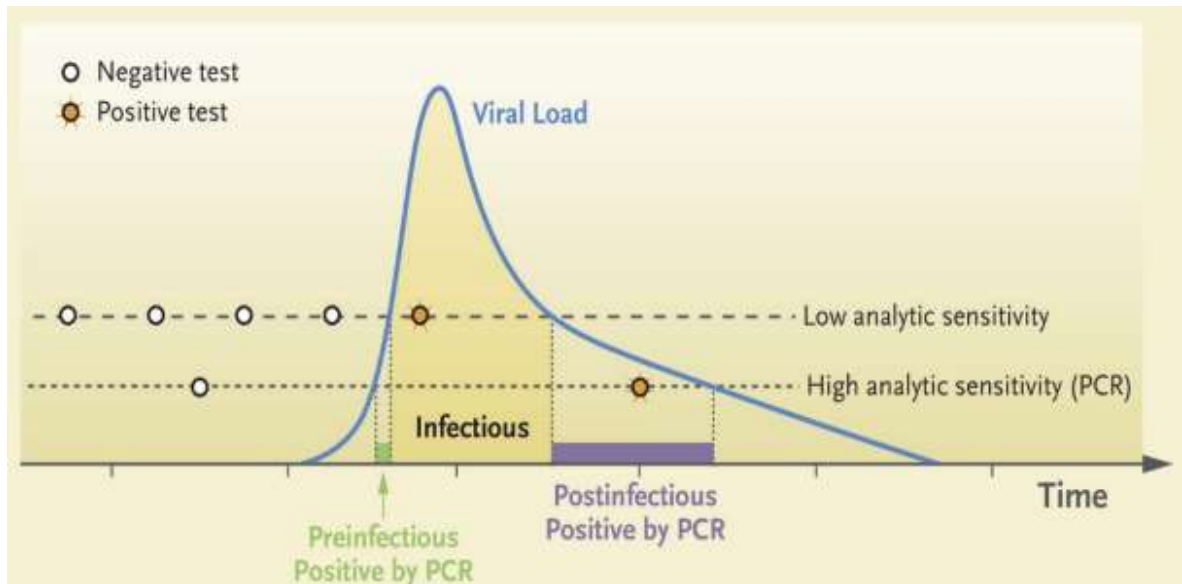


Diagram II: The RTK-Ag test has good infection sensitivity and is a good assay for contagiousness but less analytical sensitivity when compared to PCR



MAKE USE OF ALL TOOLS AVAILABLE – NOT JUST LOCKDOWNS

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Abstract

The science of COVID-19 is evolving very rapidly, with new information share by scientists, virtually by the day. It is very crucial that the health leadership of every nation is informed of these new knowledge to ensure that their policies are the best practices at hand. In particular, public health physicians whose training is to care for the good health of the population in collaboration with their infectious diseases colleagues should inform and update, their civil and political leaders in the health ministries of the best medical interventions to control, contain and eventually eliminate the threats of SARS-CoV-2.

Keywords: COVID-19, best practices, public health, control, contain, eliminate

Malaysia is currently faced with the third wave of COVID-19 cases and hence it is crucial that containment policies are informed by the latest scientific tools and innovations available to ensure that their policies are the best practices at hand, not just blunt and damaging tools such as lockdowns, but complementary tools, which are friendly to both lives and livelihoods, such as large-scale and frequent population-level testing strategy.

The recent upsurge of COVID-19 cases is much higher compared to the second wave in March 2020. The magnitude of this third wave is so large that it would eclipse the total number of cases of the first wave in just hours. (see Diagram I). The rise in mortalities parallels the surge in COVID-19 cases (see Diagram II). Even more worrying is the increasing numbers of sporadic community cases not linked to a cluster. This makes contact tracing, quarantine and isolation much more challenging and efforts towards flattening the epidemic curve even more arduous compared to the second wave (see Diagram III).

Challenges in containing COVID-19 will persist until we achieve herd immunity preferably through vaccination, the chances of which are higher as the Minister of Science and Technology has announced Malaysia's participation, together with 172 countries, in the global COVAX initiative¹.

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RT-PCR is the gold standard for testing *individuals* for COVID-19 as it has very high analytical sensitivity and specificity. In simple terms, a high sensitivity means that almost all cases of COVID-19 will test positive and a high specificity means that almost all who test positive have COVID-19 (and not, for example, different coronavirus). However, as a public health tool applied *at the population level*, it has three critical drawbacks which preclude its large-scale use.

Firstly, it is costly and cumbersome. RT-PCR analysis requires a large laboratory, large investment costs of at least USD 125,000, and substantial operating expenses. In the private sector, RT-PCR tests cost about USD 100. In Malaysia, the central laboratories are able to analyze 41,354 RT-PCR specimens per day². Laboratories in Sabah are already overwhelmed, prompting the Defence Minister to announce that RMAF will ferry test specimens from Sabah to laboratories in Peninsular Malaysia³.

Secondly, it takes a long time for test results to be available. Excluding the time required to transport specimens and notify patients, which would be substantial especially in the case of Sabah, an urgent RT-PCR specimen can be analyzed in 6 hours but due to the backlog of tests, routine specimens take up to 3-4 days to be analyzed. These few days are not just a source of anxiety for the individual tested, but represent lost livelihoods, delays in treatment, and delays in contact tracing.

Thirdly, as even minuscule amounts of viral genetic material can be detected, it does not differentiate highly infectious individuals (higher viral loads) from less infectious individuals with lower viral loads⁴.

Enter antigen-based COVID-19 Rapid Test Kits (RTK-Ag). As part of a *population-level* strategy to ‘sweep’

and isolate infective individuals, RTKs have several appealing features.

Firstly, due to advances in technology, the tests are now exceedingly convenient. They can be performed at a longhouse *ruai* (*halls*) without equipment or electricity. RTKs can be stored at room temperature. Testing even in remote areas throughout the country would be as easy as in a central hospital.

Secondly, the tests are rapid. In the 15 minutes taken for a tested person to scroll through their WhatsApp messages, the tiny red line or lines that denote the test result will become available ala the consumer urine pregnancy tests that couples are familiar with.

Thirdly, it is cheap. Global institutions such as WHO, with financial commitments from the Global Fund, are making 120 million affordable, quality RTKs available to the governments of countries without the need for middlemen. Malaysia is among the beneficiary countries⁵. Each RTK-Ag is priced at a maximum of US\$ 5 – a typical household’s daily spend on food and perhaps not much different to the cost of food ratios supplied to those under EMCO. As this is point-of-care diagnostics, public health officials will also not need to spend time calling back the patient.

Fourthly, RTKs pick out infectious cases. In the context of a population-level strategy, the test can be better described as a test for COVID-19 *infectivity* rather than a test for COVID-19⁶. This makes this a useful public health tool, different tool from RT-PCR. RT-PCR will remain a critical tool for the management of individual COVID-19 cases. Different tools for different purposes.

How could RTKs be used as part of a population-level strategy? In simple

terms, to reduce COVID-19 infections we need to reduce four variables.

Firstly, the number of daily encounters between individuals – this is why lockdowns help, albeit at a cost to mental health and livelihoods.

Secondly, the chance that an encounter between individuals results in a spread of COVID-19 – this is why wearing masks, physical distancing, and washing hands help a lot.

Thirdly, the proportion of individuals who are susceptible to the disease – i.e., those who are not immune. This is why we await a COVID-19 vaccine with bated breath as there is no ‘exit’ until herd immunity is reached, either by infection or preferably by vaccination.

Fourthly, the duration that individuals spend in an infective state within a community. This fourth variable can be reduced by a large-scale ‘sweep’ and isolate strategy – by testing *many* people for infectivity *often*. Infective individuals can hence be *quickly* isolated from the rest of the community, limiting spread to others.

All these four variables work in tandem. Hence, to obtain a similar containment effect, if we do not wear face masks, a stronger lockdown would be needed, *ceteris paribus*. Similarly, if most infective individuals can be quickly

isolated from the community with *large-scale* and *frequent* testing with RTKs, we reduce our reliance on lockdowns, which harm mental health, prevent many from seeking healthcare for non-COVID-19 conditions, and devastate the economy.

In this critical 3rd wave, Malaysia must use all the tools available at our disposal, not just lockdowns.

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3. <https://malaysia.news.yahoo.com/sabah-covid-19-labs-too-084412093.html>
4. <https://www.nejm.org/doi/full/10.1056/NEJMp2025631>
5. <https://www.who.int/news-room/detail/28-09-2020-global-partnership-to-make-available-120-million-affordable-quality-covid-19-rapid-tests-for-low--and-middle-income-countries>
6. Mina MJ, Parker R, Larremore DB. Rethinking Covid-19 Test Sensitivity: A Strategy for Containment. 2020.

Diagram I: Daily new confirmed COVID-19 cases in Malaysia from 31 Dec 2019 to 9 Oct 2020

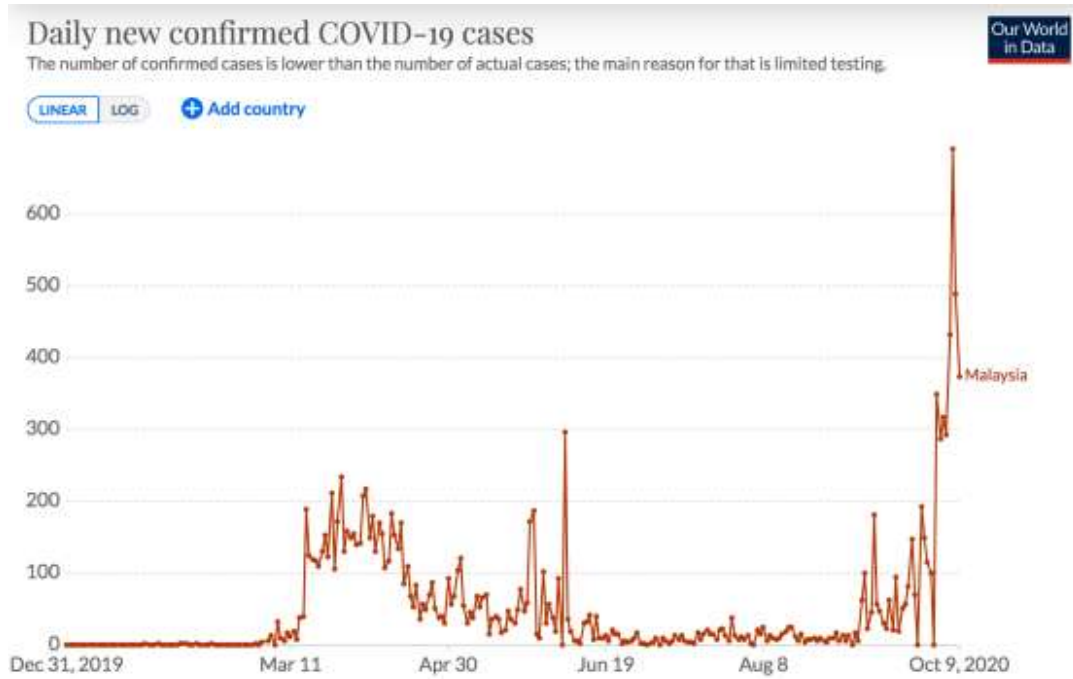
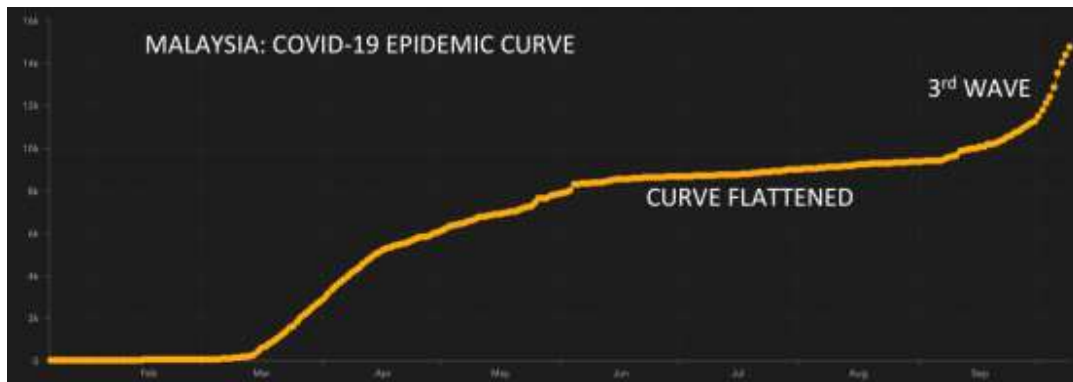


Diagram II: Daily new confirmed deaths in Malaysia from 31 Dec 2019 to 9 Oct 2020



Diagram III: Malaysia's COVID-19 epidemic curve from 31 Dec 2019 to 9 Oct 2020



RISK COMMUNICATION MESSAGING IN THE MIDST OF THE COVID-19 PANDEMIC

Musa Mohd Nordin, Sharif Kaf Al-Ghazal**, and Muhammad Wajid Akhter****

The following has been extracted and summarized from the consensus statement prepared by the Scientific Pandemic Influenza Group on Behaviors (SPI-B) for the Scientific Advisory Group for Emergencies (SAGE) (1).

The risk of dying from COVID-19 is much higher among Black, Asian and Minority Ethnic (BAME) groups. Their lower socioeconomic status, large family members living under one roof and lack of health-seeking behavior are some of the contributory factors.

COVID-19 health messaging to BAME communities needs to be culturally sensitive to trigger behavior modification and improve their health outcomes. This is because their beliefs and attitudes is influenced by socio-cultural factors different from their Caucasian countrymen.

Behavior changes occurs as a consequence of the interplay of 3 factors namely; baseline knowledge and skills, the available resources and opportunities and the motivation to change old ways and habits.

A successful communication strategy will target all these 3 situations to enhance knowledge and skills, increase resources and drive motivation.

A community leader or NGO known to the BAME communities will more likely earn their respect and trust and would be more receptive to their health messages. In this respect the British Islamic Medical Association (BIMA) and their partners (eg Muslim Council of Britain MCB) have been very smart and savvy in their health messaging on various health, ethical and religious issues related to COVID-19 and this was acknowledged by SAGE (see Example 6).

Here are some examples of BIMA's key health messages, infographics and a template sermon (*khutbah*) which has been shared with 50 other affiliates in the Federation of Islamic Medical Associations (FIMA) fraternity.

References

(1).<https://www.gov.uk/government/publications/spi-b-consensus-on-bame-communication-22-july-2020>

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Example 6: information shared via faith organisation that is more trusted by some BAME groups

3 Hadith/Aya to protect against CORONAVIRUS (COVID-19)

1 *Chawidha in half of faith*
 The virus is spread by saliva from infected people sneezing, coughing and touching on your eyes, nose or mouth.
 Wash your hands with soap for 20 seconds frequently.
 Avoid shaking cups and drinks.
 Avoid touching your face - sneezing or blinking without washing hands.
 Avoid hugging and shaking hands for the time being.
 Avoid touching communal items like armrests on public transport.

2 *If you hear of a plague in a land, do not enter therein. If it befalls a land and you are in it, there is no sin on you of it.*
 If you have come back from an area where it is prevalent, self-isolate.
 If you have even mild cold or flu like symptoms, stay away from the public including mosques (especially) until there may be a difference of opinion amongst scholars.
 Avoid visiting those areas until they are better.

3 *There are those who possess the expertise (and skills) if you do not know.*
 There is much information about Covid-19 online.
 Make sure it's from a credible source.
 Please do not spread unverified information.
 If you get worried you may have it, call 111.
 For general information visit the public health communication centre 111.
 For more info, contact: covid19@mcba.org.uk
 or visit: www.muslim.org.uk/information

THE VIRUS IS RARELY FATAL, SO LET US TAKE PRECAUTIONS AND MAKE DUAA

MCB

Information that draws on aspects of personal identity which increases likelihood of following guidance

Faith based credible source more trusted than HM Government for some Muslim communities

The following are graphs which summarize the COVID-19 situation in FIMA affiliate countries as at 13 October 2020. It was not possible nor smart to capture all the data on one graph due to overcrowding. So we divided them into 4 regions, namely Asia Pacific, Middle East, Europe with the US and Africa. There was no online data from Jordan, Khmer and Tanzania.

The first set of graphs looked at new daily confirmed COVID-19 cases. It is on a log scale (not linear), so we are able to compare large populations with smaller populations with smaller case numbers. More important is the trending of the curve for each country- flattening or bending the curve or a rise after an initial plateau/decline (new wave). The colour of the curve tells the positive rate of testing. Best countries doing appropriate testing are <3% (blue and blacklines) while grey means no testing data.

The second set of graph examines the new daily confirmed COVID-19 deaths. The WHO COVID-19 dashboard (1) reports 38.0 million cases and 1.08 million deaths as of 10:00am EDT on 14 October 2020.

(1). <https://covid19.who.int/>

FIMA

#SmartLockdown FOR MUSLIM INDIVIDUALS

PHYSICAL DISTANCING
2metres or 6 feet apart at all times

AVOID TOUCHING
Door handles, trolleys etc..

CLEAN PHONE
Keys & other objects we touch regularly

NO HANDSHAKE
Say salaam verbally with hand on heart

WASH HANDS
Regularly for 20 seconds

WEAR MASKS
When going out or cover with cloth or scarf

AVOID VISITING
Sick people unless allowed by Doctors

HIGH RISK
If you are >65 years old or have illnesses that make you high risk, continue to self-isolate

All information here is general advice and should be applied in context and with the input of local medical experts and scholars
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Designed by the Muslim Council of Britain and British Islamic Medical Association

8th May 2020



#SmartLockdown

3 HADITHS TO REFLECT

1

The Prophet ﷺ said, **“A believer should not be stung twice from the same hole.”** [Bukhari]

Between the lockdown being eased and a COVID-19 vaccine, we are at increased risk of a 2nd wave. We must protect ourselves and learn to live the “new normal” life until a vaccine is developed.



2

The Prophet ﷺ said, **“There is no wisdom equal to good planning.”** [Mishkat]

Certain ethnic or socio-economic groups may be more impacted. We must plan at all levels to protect the high risk groups.



3

The Prophet ﷺ was walking around the Kaaba and said, **“The sanctity of a believer’s blood and property in the sight of Allah is greater than your (the Kaaba) sanctity.”** [Ibn Majah]

Post-lockdown & pre-vaccine, we must ensure our Lifestyle and choices we make do not endanger the safety & lives of others. Stick to activities that would prevent a 2nd wave.



All information here is general advice and should be applied in context and with the input of local medical experts and scholars

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 **#SmartLockdown**
WHY DO MUSLIMS NEED THIS?

2nd wave

- Often **more deadly** than the 1st because of complacency & risk taking

More affected

- Lower socio-economic & vulnerable group **disproportionately impacted**. We must protect them

Unique features

- We have a few unique features e.g. multi-generational households, mosques and **socio-economic disadvantages**

All information here is general advice and should be applied in context and with the input of local medical experts and scholars
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8th May 2020



#SmartLockdown

FOR MOSQUES & MADRASAHs

The authorities decide when a Mosque or Madrasah re-opens.
Here are 8 steps to improve safety in post-lockdown, pre-vaccine period if it is re-opened



COVID SAFETY OFFICER
A volunteer entrusted to ensure compliance with safety rules

MOSQUE TIMES
Very restricted opening hours

DOORS OPEN
Separate entrance & exit + open doors

ONLINE MADRASAH
and Quran classes to remain if possible

OWN PRAYER MAT
To avoid touching Mosque carpet

MARK SPACES
2 meter apart in ALL directions with tape

WUDHU AT HOME
To avoid touching the taps

DO NOT COME!
If you are high risk, sick, live with a high risk person or a frontline healthcare worker seeing patients

All information here is general advice and should be applied in context and with the input of local medical experts and scholars
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#SmartLockdown

10 STEPS FOR MOSQUES

The authorities decide when a Mosque or Madrasah re-opens.
Here are 10 steps to improve safety in post-lockdown, pre-vaccine period if it is re-opened

 <p>DO YOU FEEL IT IS SAFE? If your committee does not feel it is safe, then you are under no obligation to open.</p>	 <p>WUDHU AT HOME To avoid touching the taps please do wudhu at home</p>
↓	↓
 <p>COVID SAFETY OFFICER Ideally each Mosque should have volunteer who ensures compliance with safety advice</p>	 <p>MARK SPACES Mark 2 meter gaps clearly in all directions using tape or other means, not just between rows</p>
↓	↓
 <p>DO NOT COME! If you are high risk or live with someone who is, if you are sick or see patients</p>	 <p>OWN PRAYER MAT From home to avoid touching Mosque carpet. Also bring own Quran/ use App</p>
↓	↓
 <p>LIMITED TIMES Please shorten opening times considerably</p>	 <p>ONLINE MADRASAH If possible, we advise Madrasah & Quran classes to remain online</p>
↓	↓
 <p>DOORS OPEN Use door stop so no touching door handles. Try different entrance/ exits</p>	 <p>FINANCIAL STABILITY Consider starting campaign to donate money to Mosque for financial stability</p>
↓	↓

All information here is general advice and should be applied in context and with the input of local medical experts and scholars
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8th May 2020



#SmartLockdown

SHOULD I GO TO THE MOSQUE?

The authorities decide when a Mosque or Madrasah re-opens.
Here's how you decide whether you go to Mosque in post-Lockdown, pre-vaccine period.



If your Mosque is not taking precautions to prevent infections

If you are bringing kids too young to keep physical distancing

If at risk group or live with a high risk person

If any symptoms of COVID-19 e.g. Fever, Cough or flu

If you are frontline health care worker exposed to COVID-19



If your Mosque is putting in place measures to protect public

> 10 years old able to understand importance of physical distancing

If neither you or anyone in your household are in a high risk group

If feeling well with no symptoms

If you are not exposed to patients regularly



All information here is general advice and should be applied in context and with the input of local medical experts and scholars

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8th May 2020

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FIMA

#SmartLockdown FOR MUSLIM COMMUNITIES

SAFE BURIALS
Continue with COVID protocol ghusl, limited to immediate non-isolating family members

ONLINE MEETINGS
Avoid physical meetings

RESTAURANTS
Takeaway service rather than dine in

AVOID TRAVEL
Unless absolutely necessary

NO CASH
Use card payments if possible

SMALL CELEBRATIONS
Weddings etc... limited to immediate family only

SHOPPING
Once a week max
Try online shopping

CHOOSE YOUR BUBBLE
Decide on which small group of people (ideally family) will interact with each other

All information here is general advice and should be applied in context and with the input of local medical experts and scholars
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8th May 2020


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MUSLIMS & COVID-19


WHAT EXPLAINS THE SPIKES?


Some are saying that BAME or Muslim communities (which make up at least 1 in 3 BAME) have increased rates of COVID-19 because they are "not taking it seriously." **Here are some facts:**

- 

20% healthcare staff are BAME/ Muslim
33% of all medical staff are BAME/ Muslim
These are on frontline and most exposed.
- 

53% of all taxi drivers and 53% of London bus drivers are BAME/ Muslim. Along with delivery drivers they are more vulnerable.
- 

30% of Bangladeshi & 15% of Pakistani households are overcrowded. Also more risk in Multigenerational households.
- 

Discrepancies in testing make figures difficult to interpret. There are reports that Blackburn testing 4x more than rest of UK.
- 

While there are some who do not adhere to guidance, there is no evidence that BAME / Muslim communities in general are not taking the pandemic seriously.



BRITISH ISLAMIC
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1st Aug 2020

MUSLIMS & COVID-19

WHAT ARE THE FACTS?

Unfortunately, there are people attributing the current spike in COVID-19 cases on BAME communities in general and Muslim communities in particular. **Here are some of the facts:**

FACT



We were the first to voluntarily close our places of worships – more than 1 week before the Government ordered it.

FACT



We proactively suspended many events during lockdown – daily prayers and Friday congregations, Ramadan, Eid Al-Fitr, and even cancelled our Hajj delegation.

FACT



BIMA along with the MCB had advised face coverings in mosques before officials mandated them. Many are still observing 2m distancing.

FACT



Many members of the Muslim community are key workers / on front line working in healthcare so are more exposed to COVID-19

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BRITISH ISLAMIC
MEDICAL ASSOCIATION

1st Aug 2020

MUSLIMS & COVID-19

ASSUMPTIONS ARE DANGEROUS

Making unsubstantiated assumptions about how COVID-19 is spread is not just wrong, it's irresponsible. **Here are examples:**

ASSUMPTION



There is a genetic susceptibility to COVID-19 in BAME populations. → There is no evidence of this.

ASSUMPTION



Cases of BAME individuals breaking COVID-19 guidance can be generalised to the entire community → You can't.

ASSUMPTION



BAME and Muslim communities are breaking social distancing by visiting each others homes → No evidence of this.

FACT



Discrepancies are due to many factors especially socio-economic. Making assumptions or oversimplifying is inaccurate & dangerous. It also gives a false sense of reassurance to other communities.



BRITISH ISLAMIC
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1st Aug 2020

HOW TO CELEBRATE EID AL-FITR IN LOCKDOWN

Do..

- Pay Zakat in advance
- Perform Salah at home, either Eid/Nafi prayer
- Call out Eid Takbiraat at home
- Wash, wear your best clothes and wear perfume
- Eat something sweet (dates) in the morning
- Connect virtually with others
- Exchange gift within households
- Enjoy home-cooked food

Do Not..

- Go to the mosque. Community gatherings are not permitted
- Visit non-family members in their homes
- Gather in a group of >20, or with those who are not from your household

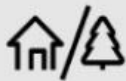
Persatuan Perubatan Islam Malaysia -IMAM | imamalaysiaofficial | imamalaysia.org

EID AL ADHA PRAYERS

ADVICE TO MUSLIM COMMUNITIES

OUTDOORS

Work with your Council to see if a suitable outdoor venue can be used



APPROVAL

Make sure outdoor space is approved by the local council and police



MULTIPLE

Hold multiple congregations if you cannot organise an outdoor space



TIME

Allow enough time between congregations and keep khutbahs short



EID TAKBEER

One person to recite takbeer loudly indoors, and only a few if outdoors. Others to recite quietly



NO HUGS

Give Salaam or Eid greetings without hugging or shaking hands



GATHERINGS

If you are meeting other families, keep the numbers to a minimum and meet outdoors



UDHIYA

Consider Udhiya to help those in need in the UK or abroad. If sharing locally, make contactless drop offs



MCB

The Muslim Council of Britain

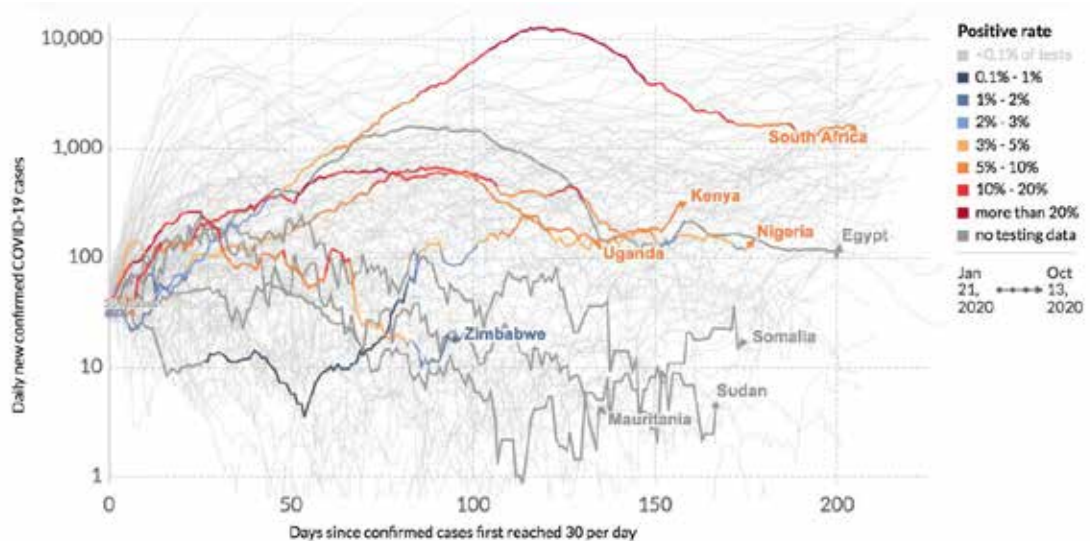
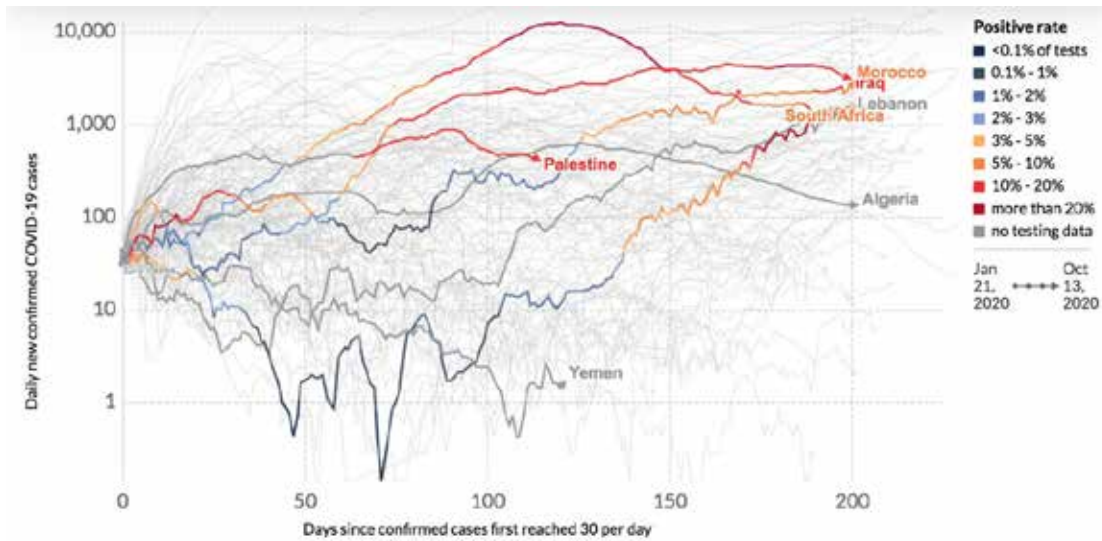
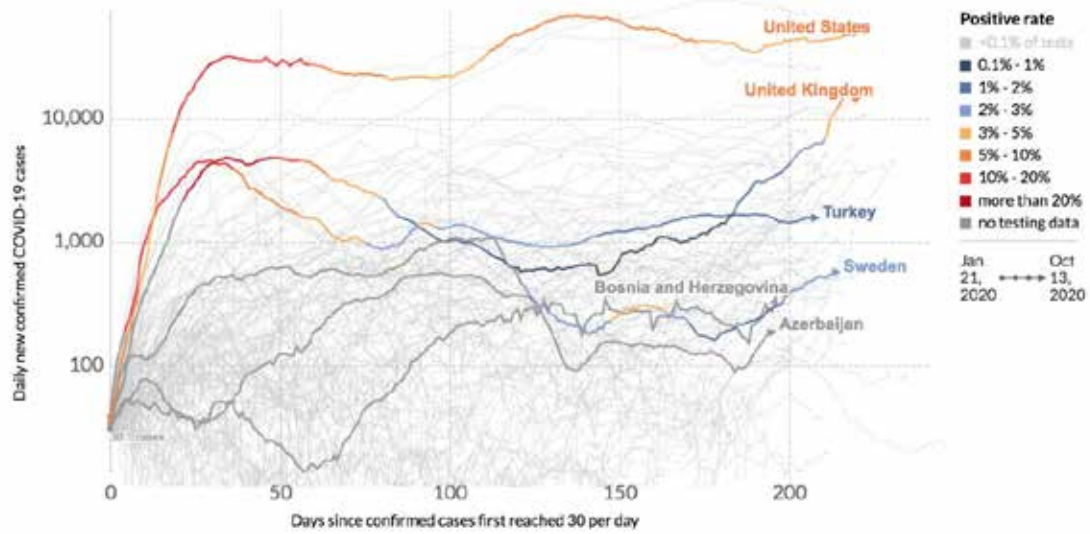
This is general advice based on public health and government guidance. It needs to be implemented according to local context with local scholars & medical input. Rules differ in Scotland & Wales so follow guidance from MCS or MCW respectively

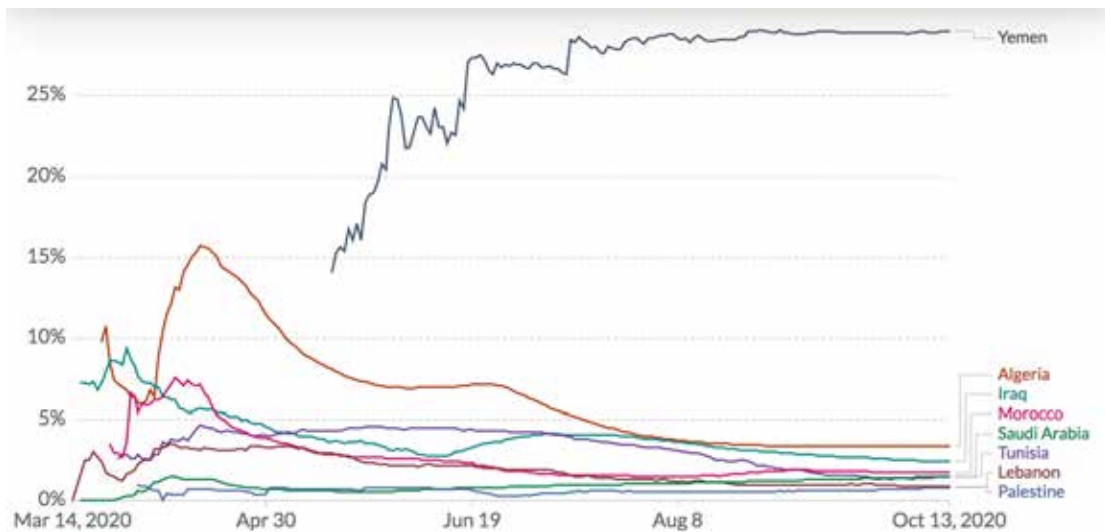
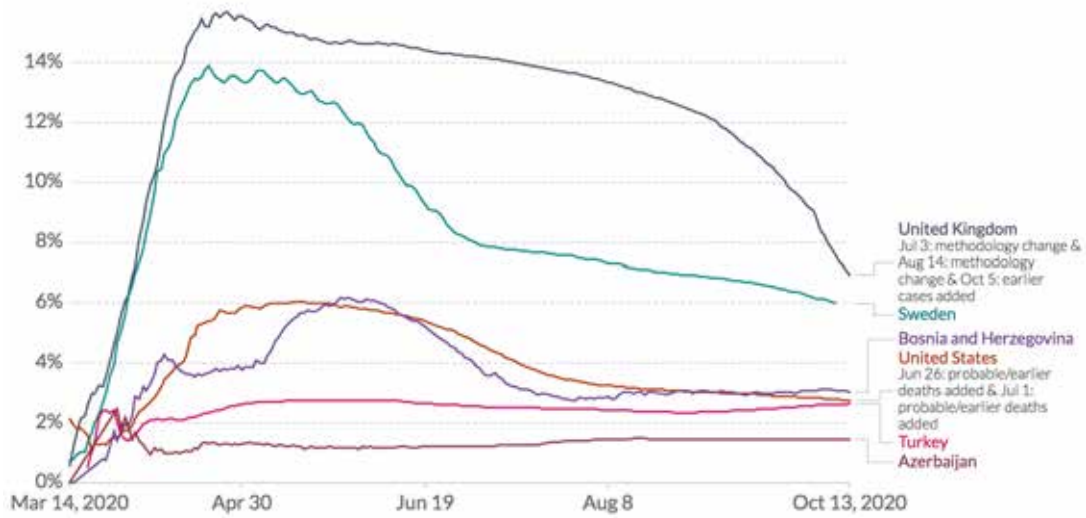
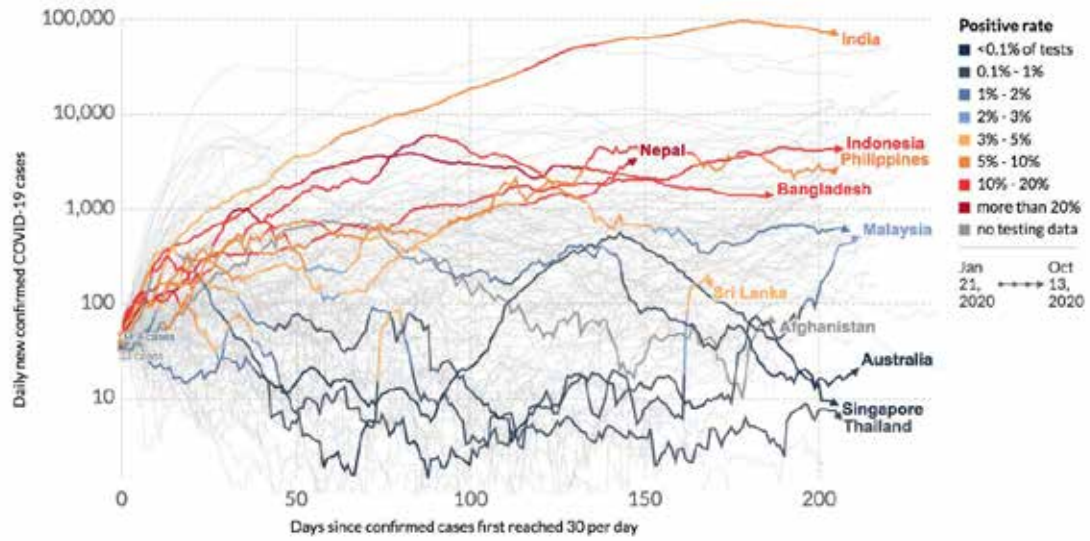
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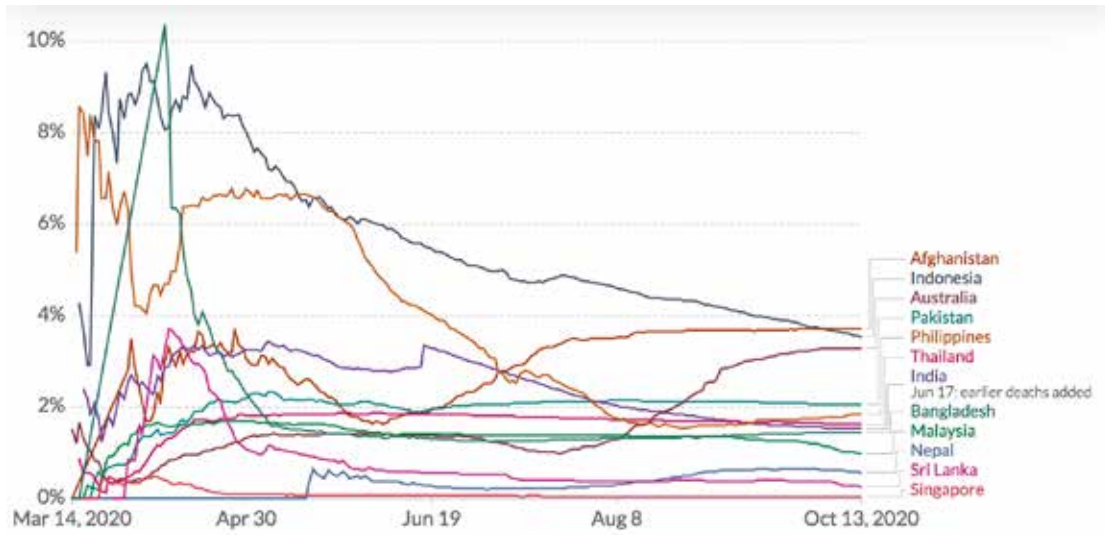
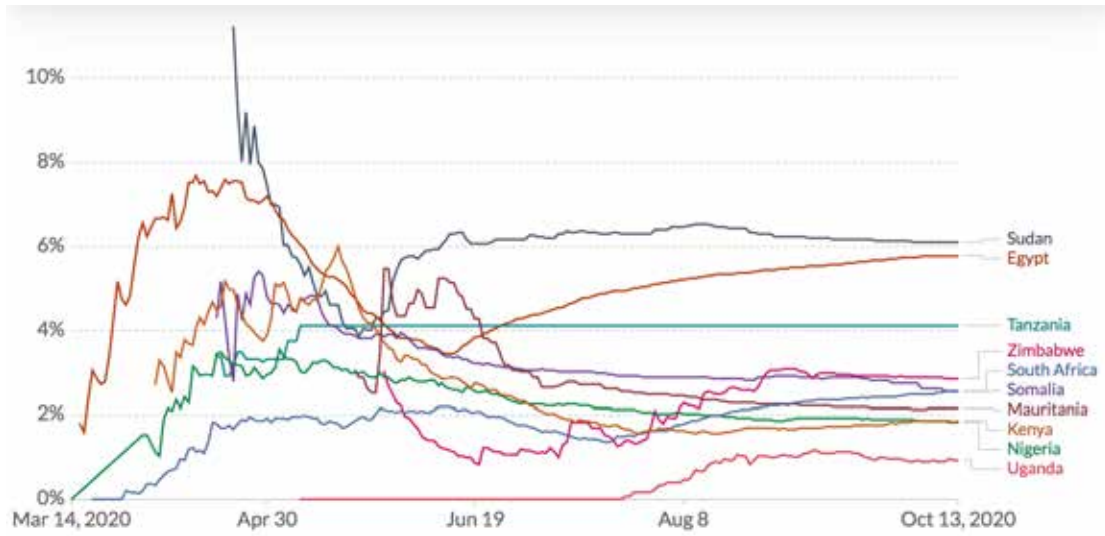


BRITISH ISLAMIC
MEDICAL ASSOCIATION

21st July 2020







بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

In the Name of Allah, Most Merciful, Ever Merciful

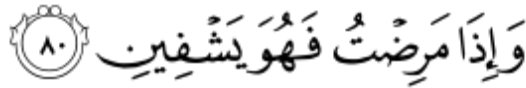
Template Friday Sermon (Khutbah):

Potential Second Wave and Protecting Our Families

إن الحمد لله نحمده ونستعينه ونستغفره ونعوذ بالله من شرور أنفسنا ومن سيئات أعمالنا ، من يهده الله فلا مضل له ومن يضلل فلا هادي له وأشهد أن لا إله إلا الله وحده لا شريك له وأشهد أن محمدا عبده ورسوله
يا أيها الذين ءامنوا اتقوا الله حق تقاته، ولا تموتن إلا وأنتم مسلمون.

Salamun-alaikum, Peace be with you,

The Qur'an tells us:



“And when I am ill, it is He (Allah) who cures me.” Qur'an 26:80

INTRODUCTION

- My dear brothers and sisters. As you know, the **world is going through the COVID-19 pandemic** and there is no person, no country, no field of human activity, that has not been impacted by this.
- It has caused some people to lose their freedom due to lockdown rules, lose their livelihoods due to the economic impacts, **caused over 40,000 deaths in Britain**, and nearly 1 million deaths globally.
- Many of our own Muslim communities have lost loved **mothers, fathers, brothers, sisters**, and to you I offer sincerest condolences.
- Now in recent days, evidence is showing there is a **real risk of a second wave** which may hit us harder than the first. How should we approach this?

1. LEARN LESSONS FROM FIRST WAVE

- The Prophet (peace be upon him) is narrated to have said, “**A believer should not be stung twice from the same hole.**” [Bukhari]
- The first wave, we did not know what to expect so we cannot be blamed. We had to use our best guess to work out what to do.
- But the second wave, **we now have experience**. To not learn lessons from the first wave would be heedlessness and rejecting the mercy of Allah upon us for having survived the first wave.
- For example:
 - We have learnt that **wearing face masks or coverings** reduce the risk of virus transmissions significantly
 - We have also evidence that keeping **2m social distancing can reduce transmission of the virus by up to 10 times**
 - And we know that **large indoor gatherings in non-COVID-19 secure venues** like houses, could spread the virus like wildfire
- But today, we still see too many people across society of all backgrounds and ages, are taking chances or making excuses to ignore the lessons that we learnt from the first wave.
- As Muslims, we should be at the forefront of **adhering to what was learnt from the first wave** because it is a sign of our *Iman* (faith) that we do not disregard the signs of Allah.

2. PROTECT THE LIVES OF OTHERS

- Allah (swt) tells us in the Holy Qur'an, "**and whoever saves one (life) - it is as if he had saved mankind entirely.**" (Qur'an, 5:32)
- At the beginning of the lockdown, in Britain our slogan was "**Stay at Home. Protect the NHS. Save Lives.**" The part about saving lives is still as true today, as it was in March.
- In fact, as Muslims in Britain, **the statistics show we have been disproportionately affected by this virus.** In our communities, we are more likely to live in multi-generational households, or work in higher-risk occupations such as nurses and doctors, or taxi drivers and shop-keepers. These are all risk factors that makes **our local communities and our families more at risk.**
- Thus, it is even more important that **we take every practical action** so that we can to preserve life.
- There are those who may argue about why we should have to wear masks or why are we being prevented from having large weddings or gatherings – but remember that these sacrifices we are making with great patience, are contributing towards saving lives and reducing deaths.
- On 14 September, the rules were tightened again and a "**Rule of 6**" was introduced, limiting our **social gatherings to 6 people or less.**
- The scientists and public health authorities would clearly not be recommending such strong measures, if the risk of a second wave was not serious. It is important that we listen and take heed of the seriousness.
- So, let us continue to be safe, wash our hands regularly, wear face coverings/masks where it is mandatory, abide by the guidelines and socially distance from those not in our household - **not only to protect ourselves, but also our families and wider local community.**
- And ultimately, as Muslims, we should try our utmost in such worldly affairs, but always have *tawakkul* (trust) that our affairs are ultimately in the hands of our Creator and Sustainer. As Allah (swt) tells us in the Qur'an, "**And when I am ill, it is He (Allah) who cures me.**" Qur'an 26:80

3. SUPPORTING THE MOST VULNERABLE

- One of the positive lessons from this pandemic is how **many communities came together** to identify and support the most vulnerable in society
- At the height of lockdown, many people rushed to volunteer for foodbanks, do shopping runs for elderly neighbors, organised rotas to phone vulnerable family members or friends and much more.
- Despite the physical restrictions, we found new ways to help each other and implement principles from hadiths of the Prophet (peace be upon him) such as: "**He is not a believer who eats his fill whilst his neighbour beside him goes hungry**" [Bukhari]
- Today - the lockdown may not be as severe - but **the needs of our neighbours and the most vulnerable in society are still many**, especially if a second wave hits us again.
- For example, can you take action by:
 - Phoning a relative or friend who has had a bereavement recently, and be a friendly and listening ear to them?
 - Volunteering to help in the masjid or madrasa, whether in person or online?
 - Register to donate blood? Or if you've had the COVID-19 virus and recovered, take part in the pilot plasma donation drive where NHS are seeking donors from South Asian backgrounds?
 - If you are in employment, offering work experience to a young person struggling to find a job, or help them with their CV and job application?
 - And there are so many more ways we can all help, however small it may be.
- Let us be thankful for each and every blessing that we have and ask Allah (swt) to **empower us to support those who are more in need than we are** in the coming days and weeks ahead.

End.

INSTRUCTIONS AND GUIDELINES TO AUTHORS

The manuscript should not have been previously published, nor should it be under consideration by other journals, or books unless prior permission was obtained from the editorial board.

Authors should submit a statement indicating that their opinions do not reflect the opinions or policies of the institutions with which they are affiliated, if required by those institutions. Authors are also expected to submit a statement informing the editor of any commercial association that might pose a conflict of interest.

Below are the guidelines for authors submitting chapters for publication in the FIMA yearbook. These generally conform to the “Uniform Requirements for Manuscripts Submitted to Biomedical Journals,” established by the International Committee of Medical Journal Editors (www.icmje.org).

Submission of Manuscripts:

Manuscripts must be submitted online at: fimainfo@islamic-hospital.org

Manuscripts are to be reviewed by members of the editorial board. Authors are usually notified within four (4) weeks about the review comments or questions. The authors should send their revisions/responses within four (4) weeks.

When a manuscript is submitted and accepted for publication, the author transfers copyright ownership rights to the editorial board of the FIMA Year Book.

Manuscript Preparation:

1. Manuscripts should be submitted in Microsoft Word format.
2. The body of the manuscript should contain its title, an abstract (see below) and key words, the text, acknowledgements, references, legends of tables and figures.
3. Each figure and table must be submitted separately as a supplementary file. Graphics must have resolution greater than or equal to 118 dots per centimeter/300 dots per inch (dpi). In addition, each table's data should be submitted as a supplementary file.
4. A title page should be submitted as a supplementary file. This page should contain: (a) the title of the article, (b) names of all authors (first name, middle initial, and then last name), (c) highest degrees of each of the author(s), (d) name(s) and address(s) of the institution(s) at which the study was conducted, (e) institutional affiliations of the author(s), if different from (c), (f) acknowledgement of source(s) of financial support, if any, and (g) the preferred method of reader contact with the corresponding author.
5. The abstract should be limited to 150 words and double-spaced, with the required margins and headed by the title of the article. Below the abstract, list three to five key words or short phrases for indexing purposes. Whenever possible, use the terms from the

Medical Subjects list of Index Medicus.

6. The text should be divided into appropriate headings:

Quoting Qur'anic verses and *Ahadith* are encouraged. If possible, cite the Arabic text first followed by the English translation. The quotation should be on a separate line in the text. It should be given a reference number in the text and listed in the reference section. See examples in the References section.

7. Use standard abbreviations only. Abbreviations should not be used in the title and should be avoided as much as possible in the abstract. In the text, abbreviations should be kept to a practical minimum. The full term for which a given abbreviation stands should precede its first use in the text, unless it is a standard unit of measurement. Consult Scientific Style and Format by the Council of Science Editors (www.councilscienceeditors.org) or the American Medical Association's Manual of Style (<http://www.amamanualofstyle.com>).

8. Use generic names of medications and use the metric or international System of Units (S.I. for Systeme Internationale).

9. In the acknowledgments section, acknowledge only persons who have made substantial contributions to the study.

10. References should be numbered consecutively as they appear in the text. Use the format of the Uniform Requirements for Manuscripts Submitted to Biomedical Journal (<http://www.icmje.org>). Journal titles should conform to abbreviations used in Cumulated Index Medicus.

a. Standard journal article: List all authors if three or fewer. If more than three, list the first three authors followed by et al.

Example: Halpern SD, Ubel PA, Caplan AL. Solid-organ transplantation in HIV-infected patients. *N Engl J Med*. 2002 Jul 25;347(4):284-7.

b. Organization as author:

Example: Diabetes Prevention Program Research Group. Hypertension, insulin, and proinsulin in participants with impaired glucose tolerance. *Hypertension*. 2002; 40(5):679-86.

c. No author given:

Example: 21st century heart solution may have a sting in the tail. *BMJ*. 2002; 325(7357):184.

d. Personal author(s) of books and monographs:

Example: Murray PR, Rosenthal KS, Kobayashi GS, Pfaller MA. *Medical microbiology*. 4th ed. St. Louis: Mosby; 2002.

e. Editor(s), compiler(s) as author:

Example: Gilstrap LC 3rd, Cunningham FG, Van Dorsten JP, editors. Operative obstetrics. 2nd ed. New York: McGraw-Hill; 2002.

f. Author(s) and editor(s):

Example: Breedlove GK, Schorfheide AM. Adolescent pregnancy. 2nd ed. Wiczorek RR, editor. White Plains (NY): March of Dimes Education Services; 2001.

g. Chapter in a book:

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

h. Conference proceedings:

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

i. Newspaper article:

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

j. Audiovisual material:

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

k. In press:

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

l. Homepage/web site:

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

m. Qur'anic Verse:

Example: The Glorious Qur'an: Mariam: 19: 54.

n. *Hadith* from printed volume:

Example: Ibn Hajar al-'Asqalani. Fath al-Bari bi-Sharh Sahih al-Bukhari (The Creator's Inspiration in Interpreting the Verified Collection of al-Bukhari). Cairo, Egypt: Al-Bahiyah Egyptian Press; 1930. Vol 11, p. 405.

o. *Hadith* from database:

Example: Sahih Al-Bukhari, Book 79, Kitaab al-Tibb, Chapter 1, Hadith 5354. [on-line] Available from: <http://www.muhammad.org>.

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

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

13. Direct quotations, tables, or figures that have appeared in copyrighted material must be accompanied by written permission for their use from the copyright owner and original author along with complete reference information.

14. Author(s) is/are responsible for all the statements made in his/their work, including changes made by the copy editor.

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