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COVID-19 Vaccine Manufacturing in Islamic Perspectives

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Abstract

The current outbreak of the 2019 coronavirus (COVID-19) is a worldwide emergency due to its accelerated dissemination and high mortality rates. Recently, COVID-19 vaccines are available which were successfully developed. Although vaccination is considered as an important intervention, it correlates well with the priorities of Islamic jurisprudence (*Maqasid al-Shariah*). This study addresses the COVID-19 vaccine manufacturing from Islamic perspectives and to which extent that the vaccine used is halal, taking into account its *masalih* (benefits) and *mafasid* (harms). The research drew its results and conclusions using the related literatures were collected and analyzed in order to highlight its objectives, and Islamic perspectives on COVID-19 vaccination were extracted utilizing the primary sources (*al-Wahy*) as well as secondary sources (fatwa, Islamic jurisprudence, and made by Islamic scholars).

Keywords: Covid-19 Vaccine, Vaccine Manufacturing, Islamic perspectives, *Halal* vaccine.

Introduction

Coronavirus disease 2019 (COVID-19), a recently emerged respiratory disease caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), has lately developed pandemic. Most patients with COVID-19 have mild to moderate symptoms, but about 15 percent progress to extreme pneumonia, and about 5 percent ultimately develop acute respiratory distress syndrome (ARDS), septic shock and/or multiple organ failure. The mainstay of clinical treatment consists of symptomatic management and oxygen therapy, with mechanical ventilation for patients with respiratory failure. Although several antiviral drugs, including the nucleotide analogue remdesivir, are being actively tested, none has been specifically approved for COVID-19 (Cao, 2020). The production of vaccines has become one of the most central priorities.

A vaccine is a biological preparation that provides active acquired immunity to a specific disease. It normally involves an agent that resembles a disease-causing microorganism and is mostly made from weakened or killed forms of the microorganism (Melief et al., 2015). Active immunization utilizes vaccines to stimulate the immune system to develop protection against the diseases by producing a protective immune response.(Plotkin et al., 2017) Vaccination is known as one of the most successful preventive care interventions ever (Melief et al., 2015).

In Islam, there is a medical base from the Qur'an and Sunnah says: "The prevention is better than a cure."[1] For the time being, the vaccine is the most important tool for preventing and controlling infectious disease outbreaks, and it is considered as one of the most effective means to promote individuals and public health.(Andre et al., 2008) Therefore, in light of the Corona pandemic, many countries around the world have rushed to allocate huge budgets to trying to find the appropriate vaccine that will rid humanity of this epidemic (COVID-19). Some major countries such as Russia, China, and America have reached this point and various COVID-19 vaccines are successfully developed. However, the safety and efficacy of these vaccines are still investigated.

[1] http://njyiu.com/book/2/MUTUSTO/sihah3_7.htm

According to WHO, there are specific populations for whom vaccination is not recommended owing to contraindications, lack of supply, or limited data. These populations currently include pregnant women, children (<16 years of age), international travelers who are not part of a prioritized group, people having chronic diseases and allergies, or the people who have or had COVID-19 (WHO, 2021).

In Muslim countries, there is an important criterion, which is whether or not the origins of the vaccine itself comes from permissible sources (Maizirwan & Ja'afar, 2009). Therefore, recently, the refusal of vaccination has sadly been a troubling problem in the Muslim community in Malaysia and Arabic countries. Owing to accepting phony religious opinions about the status of vaccines by a few groups and individuals (Zainudin et al., 2016).

Problem Statement

Although various COVID-19 vaccines are available. Today, the Muslim world faces one of the most important challenges and questions that are not related to the quality, safety, and efficacy of the available COVID-19 vaccines. They are related to the composition of these vaccines, which may contain impure (*najs*) or prohibited (*haram*) substances. If Muslim communities can use it in the presence of *haram* substances or not. Therefore, the main purpose of this study is to try to answer these questions by highlighting some Islamic perspectives on COVID-19 vaccine manufacturing and its applications.

Objectives

The main purpose of this study is to discuss some issues related to which extent that the vaccine used is halal or not, knowing its reality and consequences side effects under in-depth studies, besides its equitable distributions and usage.

Methodology

The research drew its results and conclusions using the related literatures were collected and analyzed in order to highlight its objectives. The Islamic perspectives on vaccination were extracted utilizing the primary sources (*al-Wahy*) as well as secondary sources (fatwa, Islamic jurisprudence, and made by Islamic scholars).

Results and Discussion

Ethical Issues:

There are some ethical issues in COVID-19 vaccine manufacturing.

1. First is the law requirement for vaccinations:

Accepting the vaccine in terms of personal choice vs. the protection for the population. Many studies have shown that people exercising religious and/or philosophical exemptions are more likely to acquire diseases that are affecting themselves and their families.(*Ethical Issues and Vaccines*, 2018) For example, some individuals or comminutes do not accept to vaccinate their children because they protect them, and this is due to some of their ideological beliefs or they do not accept the exciting vaccine. So, should exemptions from vaccines constitutionally mandated on the grounds of religious and personal values be allowed?

For example, in Malaysia, vaccination refusal among parents has increased extremely.(Khoo et al., 2020) There are some cases that happened due to anti-vaccine people. In December 2019, a 3-month-old baby boy in Tuaran, Sabah, diagnosed with vaccine-derived poliovirus (cVDPV), the first reported case in the country in nearly three decades, medical experts have raised the alarm over the severity of "vaccine hesitancy", largely due to misinformation.(Arumugam & Solhi, 2019) In 2020, other fourth cases were recorded all from Sabah: a three-year-old child from Tuaran, an eight-year-old from Sandakan, an 11-year-old from Kinabatangan, and a three-year-old boy from Sandakan.(Pillai & Thanaraju, 2020) The Ministry of Health previously stated that cases of parents who refused vaccinations increased from 918 in 2014 to 1451 in 2015 and 1603 cases in 2016. However, in 2017, the cases number declined to 1404 (Arumugam & Solhi, 2019).

Parents oppose providing childhood vaccination for their babies as listed in the Program of Malaysian National Immunization (NIP). One of the core factors of rejection may be a religious conviction. Parents reluctant to vaccinate their offspring, considering the fact that ritually unclean materials (*najs*) are found in vaccines.

The community of Malaysia consists of 61.3% of Islamic society. Thus, the population needs to be informed about religious vaccine issues for health practitioners (Khoo et al., 2020).

2. Second is the development of vaccines:

Ethical discussions also surround the research and testing of vaccines, including discussions about vaccine development, and study design, population, and trial location.

The science and testing of vaccines, including debates on vaccine production and study nature, population and place, have centered on ethical discussions.

Who should be plan, produce and development of vaccines?

After several years of study, vaccines can be approved and licensed. Different professionals from many sciences and social backgrounds including public health, epidemiology, immunology, statistics, and the pharmaceutical industry are interested in vaccine production and development. These interests may have competing interests and motivations that lead to various ethical debates (*Ethical Issues and Vaccines*, 2018).

After producing the vaccine, who will be testing out the vaccine?

Researchers often argue with who to use in vaccination trials. Testing a vaccine in vulnerable individuals, such as infants, often poses researchers ethical issues. The safety and effectiveness of a vaccine in various people are crucial to consider, before testing out the trial in the persons (*Ethical Issues and Vaccines*, 2018).

3. Next it, informed Consent:

So, who is going to informed about the vaccine?

Certain countries have particular informed consent laws. Some legislators and other proponents for the needs of patients consider that it is ethical and acceptable to request specific consent in order that parents are properly informed and have more time to make any inquiries if possible. On the other hand, the opponents fear that causing undue concern or concerns about the vaccine process if the controlled written consent protocol adds (*Ethical Issues and Vaccines*, 2018).

4. The last ethical issue is the distribution of vaccines:

Does the vaccine equally distribute to the individuals or populations?

Who should decide which community should be vaccinated first when vaccines are in short supply? Usually, the distribution of the vaccine is not fair, which increase the ethical issues for vaccine manufacturing.

According to India news, the government and private-sector health care workers, including Integrated Child Development Services workers, will receive the vaccine during the first phase (Ani, 2021).

Islamic Perspective on Covid-19 Vaccine Manufacturing and Usage:

> Islam presents to Muslims with general guidance on medication and medical treatment. Islam commands that people who are ill to try finding a cure. This is according to the hadith from the Prophet Muhammad (s.a.w):
>
> " تَدَاوَوْا فَإِنَّ اللَّهَ عَزَّ وَجَلَّ لَمْ يَضَعْ دَاءً إِلاَّ وَضَعَ لَهُ دَوَاءً غَيْرَ دَاءٍ وَاحِدٍ الْهَرَمُ ".
>
> The Prophet (□) said: *"Make use of medical treatment, for Allah has not made a disease without appointing a remedy for it, with the exception of one disease, namely old age."* (Abu Dawud, hadith no. 3855)

Based on this hadith Muslims should be finding effective methods against covid-19 for preventive and protect themselves and others from this pandemic. Therefore, this study will state some critical points in order to produce the most effective vaccine according to the Islamic perspectives.

1. In-depth research needed

There is an important principle in Usul Al-Fiqh, which is: الحكم على الشيء فرع عن تصوره – *Al-hukm 'ala al'Sha'l Far'an 'an Tassawwurihi*– "The correct judgment on a subject is simply a branch of understanding its reality." That means knowing the truth and reality of the matter before giving solutions and answers.

Therefore, it should be made an in-depth study and research on SARS-CoV-2 that causes COVID-19 before making up any vaccine or treatment. Many scientists and researchers around the world have begun to search for the genetic sequence of the virus. Dr. Aneela Javed and Dr. Ali Zohaib from the faculty of NUST Atta-ur-Rahman School of Applied Biosciences (ASAB) have been able to determine the complete genetic sequence of the SARS-CoV2 (Javed & Zohaib, 2020). The genetic pattern identified could facilitate the diagnostic assays of the virus and monitoring its development (that is, by comparing it if mutations occur) as well as it may also help find the treatment. Some researchers such as V'kovski et al., (2020) have also focused on understanding the viral infection process by studying the interactions of the virus with the host at the molecular level to define the goals of the antiviral intervention and to clarify the critical viral and host determinants that are significant to the development of the severe disease.

Other researchers are exerting to discover medicines and vaccines for the treatment. Some reports say that a medication (Chloroquine) utilized to treat malaria, has been shown to be effective for inhibiting infection at a minute concentration (micromolar). It is prescribed for its treatment as a safe and low-cost medication (Gao et al., 2020). As for vaccinations, people around the world are moving towards two options that have no third, and this is either through allowing the spread of infection among people without limiting it until reaching community immunity or vaccinating people against SARS-CoV2. The first option does not comply with Islamic law (*Shari'a*), because it exposes the weak people to the risk of death, which clearly contradicts the intention of the legislator to preserve the human soul in which everyone is equal, and because it is harmful beyond health to matters of worship, economics and other aspects of life (Committee, 2020).

> The Messenger of Allah, may Allah bless him and grant him peace, said, "*There is no injury nor return of injury*."(Malik, *Hadith* no. 1435).

As for the second option to achieve immunity by giving vaccinations, that is what is correct in *Shari'a* and reason. The legitimacy of treatment to ward off or prevent sickness is the subject of scholarly consensus, whether the disease is actual or expected,

There is no dispute about the legality of treatment from it. Taking medicine is obligatory is when the disease may harm others (Committee, 2020).

There are data limited regarding the available COVID-19 vaccines. For example, in Brazil, some researchers have declared that the Chinese Sinovac COVID-19 vaccine is 100% safe and effective in preventing severe symptoms and 78% effective in prevention based on the outcome of phase III clinical trial. This was through an announcement with very little detail, which raised many questions. The trial involved 13,000 volunteers, 218 of whom were infected with COVID-19. More than 160 of these cases occurred in the placebo group.[2] After just one-week, other results were announced that this Sinovac COVID-19 vaccine found only to be 50.4% effective.[3] Concerning that Dr. Keiji Fukuda, director and professor, University of Hong Kong School of Public Health, said: "The availability of more data is essential to understand any vaccine — for example, age groups of those tested, did this group have any unusual characteristics, how were they selected,

how were the clinical and laboratory endpoints defined, what were the rates of individual side effects, what was used for the placebo, how were the statistics done, where did the vaccine come from, doses and so on."[4]

According to Peter Openshaw, a professor of experimental medicine at Imperial College London said: "We have to wait for the full data and to see how the regulators view the results."(Mahase, 2020) Therefore, the manufacturers must provide more necessary information that enables scientists to look at the COVID-19 vaccines and the results of its applications, which in turn helps to ask more questions about the product in order to develop it. Therefore, these companies must adhere to:

- No monopoly on vaccine information and clinical trials.

[2] https://www.devex.com/news/southeast-asia-eyes-china-s-sinovac-covid-19-vaccine-98853
[3] https://www.sciencemediacentre.org/expert-reaction-to-reported-results-of-the-sinovac-covid-19-vaccine-from-a-trial-by-the-butantan-institute-in-brazil/
[4] https://www.devex.com/news/southeast-asia-eyes-china-s-sinovac-covid-19-vaccine-98853.

- Presenting and transmitting information with transparency and credibility, especially with regard to the components of the vaccine and the extent of effectiveness.
- Share information by publishing research or reports.

Given the rapid pace of vaccines development, many people are fear potential side effects from vaccination. Despite the limited data on the efficacy and safety of vaccines, many countries are hoping to finalize deals with the manufacturer of vaccines. As a result, for spreading and promoting the confidence among people about COVID-19 vaccines, more information must be provided.

2. Treatment and its compositions

The vaccination fulfils all *Maqasid Al-Shari'a* aims, when connecting vaccination with the religion preservation (*hifz addin*) and life preservation (*hifz Al-nafs*), this is according to Ebrahim, (2014). He also stated that this can be accomplished due to the vaccination acting as a preventive measure that promotes the wellbeing of a Muslim. Moreover,

most Muslim scholars would agree that vaccination is an act to reform (*islah*) the Islamic community for the improvement of well-being that associates with *al maqasid shari'a* (Zainudin et al., 2016).

The manufacture of vaccines is a complicated and expensive process. Hence, the exact content of the substances utilized in vaccine manufacturing is difficult to identify. However, according to some references, certain substances that include in the manufacture of vaccines, are listed as *haram* in Islam, such as (Rosman et al., 2020):

a) Aborted fetus cells and chick embryo cancer cells.
b) The gelatin derived from pigs is used as a stabilizer in vaccines, such as Rabies, Influenza, Japanese Encephalitis, MMR, Varicella, DTaP, Varicella-Zoster vaccines.
c) Stocks of virus or bacteria seeds grown utilizing enzymes derived pigs.
d) Pus from scabies of diseased animals, feces, and urine.
e) Serum of horses, calves, pigs, rabbits and human.

f) Antibiotics, bacteria, virus from monkeys, retroviruses (viruses that have been contaminated in polio vaccine).

If one or more of these *harams* are used as vaccine components, whether the *istihalah* and *istihlak* process have existed as such may be considered the vaccine as clean or *halal* for usage. *Istihlak* means mixing of a substance with another substance that causes loss of properties and characteristics of the substance, until it is considered dissolved even though in fact it still exists (Rosman et al., 2020). While *Istihalah* can be defined as the conversion or transformation of the initial material that involves changes in its composition and properties. *Istihalah* indicates the transformation of name, parameters (smell, goat, and color), and essence of filth (*najs*) or *haram* material into another shape that is distinct from that of the original material (Jamaludin et al., 2012). This is what the school of thought that uses the *Hanafiyah* methodology believes, and they are considered the vaccine is clean and *halal* to be used with/without emergency purposes. The Fatwa and Research Council of the European Union and the Islamic Organization of Medical Sciences, Kuwait,

are among the institutions which follow this methodology. This opinion correlates to *istihlak* and *istihalah* concept (Rosman et al., 2020):

- A *haram* material adding to that which shifts the legal status from *haram* to *halal* because the vaccine has been carried out through the *istihalah* method since the ban does not apply. The terminal product is the vaccine which does not contain unclean ingredients anymore.
- Even if *haram* content is mingled with the vaccine producer's deliberate purpose, the cleanliness of the finished product is not compromised because of the incidence of *istihalah* already.
- While the unclean substance used to manufacture the vaccine can still be detected in lab tests, but *istihlak* has already been used for these materials. Therefore, unclean compounds have now lost their properties and characteristics and are dominated by the properties and characteristics of the clean material.

Through a Facebook post after attending the *Muzakarah* committee meeting Perlis mufti Mohd Asri Zainul Abidin said: "Even if there is an ingredient which is not permissible, the chemical transformation process will make it clean and *halal*." (Hassan, 2020).

Despite approvals by governments, which includes those of Muslim majority countries, the authorized COVID-19 vaccines were faced with a mixed response of the Islamic theological community, *halal* associations, and *halal* pharmaceutical experts to see if the vaccine was *halal* (Cochran, 2020). Many claims have been made widely regarding the available vaccines manufacture. Some said it could be achieved by the culture of fetal or porcine cell viruses (or producing their proteins therefrom). However, AMJA Resident Fatwa Committee (2020) denied it, and said: "COVID-19 vaccines manufactured by Pfizer and Moderna do not rely upon these technologies and thus there is no cause to suspect to doubt their permissibility because of this concern." (Committee, 2020).

Nevertheless, the stance of the majority of Muslim scholars and *Fiqh* councils is allowed to use human organs and cells under some conditions. Certainly,

aborting fetuses is prohibited for this purpose, and parental permission must, of course, be sought before any section of an aborted fetus is utilized (Committee, 2020).

On the other hand, some scholars believe that the use of prohibited substances in the manufacture of vaccines is only in one case, which is necessary, under legal maxim of *Fiqh* "*Al-dharurah tubih al-Mahdzurat"* الضرورة تبيح المحضورات. So, this kind of vaccines are *Haram* and is only allowed during emergency. There are views of modern scholars who insist on the methodology of *Syafi'iyah* that it is *haram* that the vaccine is made from a combination of *haram* substances. The view and the methodology are based on a fatwa given in relation to vaccinations in the Malaysian National Fatwa Committee Discussion. The relationships of this opinion with the concept of *istihala* and *istihlak* are the following (Rosman et al., 2020):

- In the vaccine production process, *Istihalah* and *istihlak* do not take place because the unclean and clean substances are mixed. It cannot be analogized to cases such as wine into vinegar or food and blood into milk because in these cases does not include foreign

haram substances. Whereas external *haram* compounds have been added to the *halal* substances during the manufacture of vaccines.

- The manufacturer's deliberate is to add *haram* substances in vaccines. Thus, even though *istihalah* is likely to exist, however, it is an *istihalah* that does not change unclean materials (*haram*) into clean ones (*halal*).
- *'Ain* (visibility) of the unclean can still be identified through laboratory experiments, then *'llah* of proscription still exists because visibility of the unclean still exists. Therefore, *istihalah* and *istihlak* that happen are still incomplete and do not transform the *haram* property of the added unclean. In contrast to the wine that turns into vinegar, substances that are associated with *'illah* of the *haram* of wine which is ethanol turned into acid. Consequently, *istihalah* has completely taken place.

The Pfizer-BioNTech vaccine, which is being provided to the public of the United Kingdom (UK), was approved by the British Islamic Medical Association (BIMA) and other scholars, saying that the vaccine is *halal*: "founded on available information." According to the United Kingdom government, there are no animal components in the vaccine that concern is of Muslims such as porcine which are *haram*, or non-*halal* slaughtered beef. However, the Standards and Metrology Institute for Islamic Countries (SMIIC), (includes 57 countries) which is a technical committee on *halal* pharmaceuticals (TC 16) formed in 2019 that has not officially declared this vaccine to be *halal* or *non-halal* (Cochran, 2020).

In the matter of preserving lives, which is considered one of the most important purposes of *Shari'a*, it is better to use the vaccine for necessity until found a vaccine that has a *halal* certificate, under the legal maxim of fiqh *Al-dharurah Tuqaddar bi Qadariha* الضرورة تقدر بقدرها-Exemption based on limitation. As the Mufti of the Islamic Religious Council of Singapore office addressed on its website: "The religious view of the COVID-19 vaccine must therefore take a more holistic stance that transcends the issue of *halal*-ness or permissibility of its ingredients" (Cochran, 2020) and The Health Ministry director-general Noor Hisham Abdullah said: "If they can get the *halal* certification that would be better, but we do not register a medicine based on *halal* status or not. We do register non-*halal* medicine too" (Hassan, 2020).

3. Vaccine Approvement

Approval of vaccines is not a decision left to a specific person or company, but rather a decision made by competent international administrations or agencies that differ from one country to another, but they may participate in following certain criteria that take into account. For example, such agencies in Islamic countries rely on what is in accordance with *Al-Shari'a*.

Concerning COVID-19 and regarding this issue, Dr. Mohammed Ali al Sheik, who works at SMIIC, said: "They cannot claim the product is *halal*. Self-declaration is not acceptable unless a third party does the certification process. If Pfizer or any other company claims the vaccine is free from animal materials, it still should not be accepted unless it is *halal*-certified". This view is supported by the *halal* certifier the World *Halal* Authority (WHA). Al Sheikh also said: "There are only a handful of qualified pharmacists with a knowledgeable background in a *halal* certification who are able to actually certify such a vaccine" (Cochran, 2020).

For instance, in Malaysia, the evaluation of COVID-19 vaccines would be performed by National Pharmaceutical Regulatory Agency (NPRA) for approval, and the Drug Control Authority (DCA) in order to register the COVID-19 vaccine before using it.(Prime Minister's Office of Malaysia Official Website, 2021)

At the moment, although it is difficult to make a *halal* vaccine, however, Malaysia is currently pursuing *halal* certification, under Malaysian DSM standards, where Malaysia's MYEG has signed a deal with a Chinese company (Anhui Zhifei Longcom Biopharmaceutical) to obtain *halal* certification (Cochran, 2020).

4. Vaccine Usage and Distribution

Once a vaccine is approved, it does not mean that anyone will have it instantly because there will not be enough for everyone. Some people are going to get it first so who is going to get the priority? Who makes the decision?

Decision-makers are political leaders, which must determine who will first receive the COVID-19 vaccine.

The Islamic countries should be followed this jurisprudential rule: *Al-Tassarruf ala al-ra'yah manut bil al maslahah* التصرف على الرعية منوط بالمصلحة, disposing of the subjects depends on the interest, meaning the government must make decisions that depend on the interest.

The plan of most countries around the world is to provide the vaccine first for those in frontlines and who are most vulnerable, and the essential workers. Malaysia seems will be following also the same approach base on Premier Tan Sri Muhyiddin Yassin's remarks and He said: "The government has no plan to make the vaccination compulsory and the vaccine will be administered only to those who agree to take it voluntarily, particularly people at risk and prone to disease." (Prime Minister's Office of Malaysia Official Website, 2020)

Due to the unfair distribution of the COVID-19 vaccine, which increases the ethical issues for manufacturing the vaccine. It should produce the vaccine on a large scale. Regarding COVID-19, manufacturers aim to fabricate billions of doses before the end of 2021, and logistics professionals must ensure that the vaccine is adequately distributed. For its part, the World Health Organization has called for a fair distribution of the vaccine (WHO, 2020).

The Director-General of the World Health Organization (WHO), Tedros Adhanom Ghebreyesus, also warns that the world is facing a "catastrophic ethical failure" due to unequable coronavirus vaccine policies. He said: "it was not fair for younger, healthy people in richer nations to get injections before vulnerable people in poorer states." and "over 39 million vaccine doses had been given in 49 richer states - but one poor nation had only 25 doses."[5] In order to ensure rapid and equitable access to COVID-19 vaccines for all countries, CEPI, GAVI, and WHO have been convened the global initiative collaboration COVAX.[6]

[5] https://www.bbc.com/news/world-55709428.
[6] https://www.who.int/initiatives/act-accelerator/covax.

CONCLUSION

It is expected that the religious and government permissibility provided to the COVID-19 vaccines will outweigh the reservations and fears of Muslims about whether the vaccine is halal or not, but governments may face many challenges to convince people to vaccinate, especially in light of the spread of the phenomenon of anti-vaccination in many countries.

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