

THE LEGALITY OF XENOTRANSPLANTATION OF ANIMAL ORGANS INTO HUMANS

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Abstract

This paper examines the legality of transferring animal organs to humans, particularly those deemed haram, such as pig hearts. Surgical transplantation, called xenotransplantation, involves transferring living cells, tissues, or organs from animals to humans. While the fatwa concerning the transfer of organs between humans is straightforward, the transfer of animal organs or tissues, especially from animals considered unclean and haram by Syarak, requires further clarification and discussion. If necessary, transplantation involving animals and humans is permissible under fundamental principles. However, the ruling may shift to haram if it involves unclean animals such as dogs and pigs. In specific medical emergencies, where no other alternatives exist, the transfer of pig organs to humans is permissible with the authorization of medical experts. Nevertheless, if a halal alternative is available, the necessity for such transfer is nullified. The methodology employed in this study utilizes a qualitative approach, highlighting and analysing secondary data. Findings are systematically examined using content analysis techniques. The results indicate that organ transplantation is viewed as a last resort to save the life of a patient suffering from terminal organ failure. The fiqh permits the transfer of animal organs or tissues, especially from animals regarded as unclean and haram, based on the understanding that it is conducted urgently, as a final option, and the patient's life heavily depends on the organ transplant.

Keyword: Animal; Human; Organ; Xenotransplantation



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INTRODUCTION

The medical procedure of organ xenotransplantation is a remarkable feat in healthcare. Patients grappling with end-stage organ failure often face the threat of a limited lifespan, coupled with high medical expenses. With the advent of organ donation, such patients have the prospect of a better and more secure life. However, the procurement of organs for transplantation poses a significant challenge. Besides the need for the organ to match the recipient's size and type, other biological factors must also be considered. Additionally, organ supply is often insufficient, adding to the complexity of the process.

The organ shortage issue remains a critical global problem, not exclusive to Malaysia alone, and has been prevalent since the mid-1980s (Ekser, B., Cooper, D.K.C., Tector, A. J., 2015). The need for adequate organ supply is attributed to the high volume of organ requests, which far exceeds the supply of available organs. Consequently, patients in need of organ transplants often must endure prolonged waiting periods before receiving the necessary organs.

Another challenge is the propensity of potential organ donors to renege on their pledges. Furthermore, some families may object to organ donations, mainly when the prospective donor is incapacitated or brain dead. In some instances, organ pledgers have passed away, and their organs are not retrievable due to the circumstances of their death, which typically occur at home, rendering their organs inaccessible (Yiswaree Palansamy, 2022). In the face of urgent circumstances where the supply of human organs is too challenging to obtain while the need for them is also very high, one solution considered appropriate is to receive the same organ supply but from an animal source. The transfer of organs from animals to humans for medical purposes is known as xenotransplantation. This process involves transferring and using living cells, tissues, or organs from animals to humans due to difficulty obtaining the required organs, especially when the demand is too high, exceeding the available supply (FDA. 2021, March 3). This xenotransplant concept is not new, as many attempts have been made in the last 300 years. From the 17th to the 20th century, there have been instances where patients were treated with blood transfusions from various animal species to combat a range of pathological conditions. Animal skins, particularly those of frogs, were also frequently utilized in medical treatments. Dr. Keith Reemtsma, while at Tulane University, performed 13 chimpanzee kidney transplants on patients, with one patient surviving for nine months following the procedure.

During a certain period, animal organs were often used as a source for organ transplantation due to their abundant and easily accessible supply. However, the lack of compatibility between donor animal organs and human recipients resulted in the failure and subsequent death of most transplant patients (Boulet, J., Cunningham, J.W., Mehra, M.R., 2022). 1964, a significant event occurred when Hardy transplanted a chimpanzee's heart into a human. However, the patient died only two hours later. Subsequently, Starzl continued the research by transplanting a baboon's heart into a patient in 1992, and the patient survived for

70 days after receiving the baboon's liver (Starzl, T.E., Fung, J., Tzaki, A., 1993). In 1993, Growth also began using organs from pigs, offering them in exchange for human organs (Ekser, B., Cooper, D.K.C., Tector, A. J., 2015). Commonly known as xenotransplant, it is a process in which the source of an organ is obtained from a species that is not the same as the species to which the organ is transferred (cross-species). Studies have also shown that animals such as pigs have a high potential to solve the problem of shortages of human organs and indispensable cells (Mou, L., Chen, F., Dai, Y., Cai, Z., Cooper, D. K. C., 2015).

The pig is widely known as a highly suitable animal for farming due to its innate ability to reproduce rapidly and with ease and its overall ease of care. Furthermore, anatomically speaking, pigs share many similarities with humans, such as having a similar heart size. This anatomical similarity allows the pig to provide an abundant supply of organs, tissues, and cells at an immediate and varied rate, as required (Boulet, J., Cunningham, J.W., Mehra, M.R., 2022). When farmed in a hygienic and uncontaminated environment, these organs, tissues, and cells can be harvested and utilized without the risk of contamination by harmful germs.

It has been noted that the internal organs of pigs share several similarities with those of humans, including the heart, loins, lungs, liver, skin, and pancreas (Cooper, D. K. C. et al., 2012). It is envisioned that the utilization of pigs as a source of organs, tissues, and cells may one day allow for the use of pig-derived human organs, tissues, and cells. This approach could potentially address the issue of illicit organ sales, reduce dependence on countries that rely on executed criminals as a source of organs, and provide an alternative to live organ donation (Ekser, B., Cooper, D.K.C., Tector, A. J., 2015)

The Human Tissue Act 1974 (Act 130) is a legislative act that exclusively manages and utilizes human tissue in organ donation activities. This Act was enacted on March 14, 1974, and officially implemented on January 1, 1975. The Act comprises five core sections, which are extensively utilized throughout Malaysia. However, the Act's limitation lies in its brevity and specialization in organ donation solely from cadavers or deceased individuals as the primary source of necessary organs.

Section 1 of the present Deed unambiguously articulates the title, application, and effective commencement of the Deed. Section 2(1) of the Act allows the transfer of human parts duly authorized by the Act for therapeutic, educational, or medical research purposes. However, this specific section exclusively pertains to transferring human body parts and does not extend to other sources, such as those originating from animal or plant sources. Consequently, the Act does not implicitly or explicitly cover the practice of harvesting or donating necessary organ sources from entities other than humans.

Sections 3, 4, and 5 of the Human Tissue Act 1974 outline the requirements for legally removing human body parts. Specifically, Section 3(2) stipulates that a registered medical practitioner must carry out this practice. If a human body is unclaimed by the estate, Section 4 grants the hospital the right to manage the body. It is important to note that the Act is exclusively concerned with the use and donation of human organs and does not extend to the removal of organs from alternative sources. In conclusion, the Human Tissue Act 1974 regulates the use and donation of human organs while remaining silent on removing organs from other sources. The Human Tissue Act 1974 has been established to regulate the donation of organs and tissues from cadaveric donors. However, another document called the National Organ, Tissue and Cell Transplantation Policy 2007 has been introduced to provide a comprehensive framework for

organ donation from living donors. Paragraph 6.1 of this policy clearly states that organs and tissues obtained from cadaveric donors are considered the best option. However, organs from living donors can also be considered if they are suitable and compatible. Nonetheless, the policy emphasizes that preference is given to the harvesting of organs from cadaveric donors over living donors. It is noteworthy that this policy does not explicitly mention the sources of organ harvesting other than cadaveric donors or living persons. Furthermore, the policy does not justify sourcing organs from non-human sources.

The Unrelated Living Organ Donation Policy and Procedures of 2011 was introduced to standardize organ donation activities among living donors. The policy seeks to streamline organ donation by ensuring all donors adhere to the same guidelines and procedures. Notably, the policy does not make any provisions for using non-human sources of organs. Its focus is solely on human organ donation.

In 2006, the Malaysian Medical Council released a set of guidelines on organ donation, referred to as the Guidelines on Organ Donation (MMC Guideline 006/2006). This document provides a comprehensive overview of the procedures and protocols involved in organ donation in Malaysia. However, it is notable that the guideline exclusively addresses organ donation activities and does not include any provisions related to sourcing organs from non-human sources. Hence, it can be inferred that the guideline is solely concerned with the ethical and legal considerations surrounding the donation of human organs in the country.

Letter 5 of the MMC Guideline briefly touches on the topic of organ donation from non-human and human clones, albeit with a note that these issues are too controversial to be explored further. Notably, the guideline does not delve into the matter of xenotransplantation at all.

In summary, the issue of xenotransplantation is not a recent development. Although it has been introduced for some time, a definitive solution has yet to be achieved. Numerous experiments and attempts have been made to make it work, but it has not been able to impact society significantly. Several challenges and issues must be clarified before it can be used as a primary source for obtaining the necessary organ supplies. As such, it is imperative to address legal aspects to mitigate potential problems with rights and liabilities that might arise in the future.

METHODOLOGY

This qualitative literature study employs a descriptive approach to comprehend and analyse the interpretation and acquisition of data replete with information. The literature method necessitates the aggregation of all data that may support this research, including books, papers, journals, fatwas, deeds, official documentation, expert perspectives, and standard operating procedures from royal authority bodies, particularly JAKIM and Majlis Fatwa Kebangsaan, both locally and internationally. This analysis will focus on the use of animal organs, particularly unclean and haram ones, with Sharia-compliant emergency parameters.

RESULT AND DISCUSSION

The transfer of animal organs categorized as haram (*muharramat*) to humans necessitates adherence to the parameters of an emergency sanctioned by Islamic law. According to Islamic

law, the transfer of haram animal organs to humans is only deemed permissible if there is no other immediate alternative or if it is the last resort in saving a patient's life. In essence, if the excision of the haram organ is not carried out, it may lead to the occurrence of fatality (*mafsadah*) to the *daruriyyat al-khams* (religion, soul, mind, offspring, and property) of the patient.

In the context of emergency medical care involving the transplant of a forbidden animal organ into a patient, it is imperative to assess the parameters of the situation in terms of the hardship, or *masyaqqah*, that the patient experiences, which justifies the concession, or *rukhsah*, of using the organ. In this regard, it is essential to note that hardship (*masyaqqah*) is the primary reason for concession (*rukhsah*), and that it refers to the hardship that the patient cannot bear any longer. Any hardship threatening life's safety, which is one of the *daruriyyat al-khams*, and burdens the incumbent (*mukalaf*) warrants legal relief.

Similarly, due to drought or other circumstances, individuals afflicted with illness or lacking necessities such as water, food, and clothing are granted the concession (*rukhsah*) to perform *tayammum*, consume *muharramat* food sources, and offer prayers while unclothed. Such humanitarian considerations are essential in ensuring that people facing challenging circumstances can access appropriate medical care and perform religious obligations without undue hardship or harm.

Islamic scholars have guided individuals or communities regarding the minimum level of hardship (*masyaqqah*) that justifies using *muharramat*, such as consuming carrion, pork, and blood, in situations of emergency (*darurah*). 'Izz al-Din Ibn 'Abd al-Salam (660 AH) and al-Qarafi (684 AH) have identified three categories of *masyaqqah*, as follows:

1. The category of maximum hardship (*'azimah fadihah*) poses a significant threat to life, limbs, and bodily functions. In such cases, using concession (*rukhsah*) becomes obligatory for the incumbent (*mukalaf*), as preserving life and limb takes precedence. It is imperative to note that this category warrants using concession (*rukhsah*), as it is paramount to safeguard the individual's physical well-being. Therefore, the incumbent (*mukalaf*) must take all necessary measures to ensure the concession (*rukhsah*) complies with the established guidelines and principles.
2. Minimum hardship (*adna*), such as ordinary pain in the finger. In the given context, it is suggested that carrying out the obligations of worship is more desirable than enduring hardship due to the elevated value of prayer in Allah's eyes.
3. Middle hardship (*mutawassitah*), i.e., between the maximum and minimum stages. Many Muslims face this category of hardship in various aspects of their lives. The deduction (*taqrib*) method can be used to determine whether allowing exceptions to the rule for this category is feasible. This involves comparing the levels of hardship to determine whether they are almost at the maximum (*azimah*) or minimum (*adna*) and then ruling based on the category.

Determining whether a hardship has passed the minimum or *adna* stage is essential for evaluating its worthiness for *rukhsah*. To this end, the hardship threshold must meet or exceed the minimum level, while those that fall below it must be disregarded (Mohd Hapiz et al., 2019). In the case of haram animal organ transplantation, the ascertainment of the patient's level of

masyaqqah constitutes a paramount consideration. Specifically, the patient's suffering must reach the highest level of intensity, known as '*azimah fadiah*', and the attending medical expert must confirm this. The transfer of animal organs considered *muharramat* to humans warrants examination from two primary perspectives, namely *haram li zatihi* and *haram li ghayrihi*, as posited by Mohd Hapiz Mahaiyadin and Roshaimizam Suhaime (2019).

Haram li zatihi refers to substances or forms that are inherently forbidden due to their nature, such as wine, blood, urine, pork, carrion, and other similar items. Additionally, these items are prohibited because they contain *mafsadah*, or harm to the *daruriyyat al-khams*, which are the five fundamental necessities of life. Unless, in the case of *darurah*, there is no acceptable reason to use such items.

Haram li ghayrihi refers to something forbidden due to external factors or because it may indirectly harm the five essential elements of life. It could be originally permissible but became forbidden due to unavoidable circumstances as follows:

1. Unauthorized use of stolen goods proceeds from robbery, or animals not slaughtered according to shari'a rules.
2. The inducement to *haram li zatihi* includes staring at a woman's awrah, being alone with non-mahram men and women, and praying in stolen clothes.
3. Indirect causes of harm to the elements of *daruriyyat al-khams*, such as the abuse of drugs, morphine, heroin, and horse pills (methamphetamine), which cause addiction and loss of self-control to users, and
4. Beware (*ihhtiyat*) of mixing halal and haram sources, which can cause users to be confused (*syubhah*).

The fuqaha have different views on the method of using *muharramat*. Ibn Hazm believes that when *Darurah Shari'a* is used, there is freedom to use various *muharramat*. Thus, health can be achieved without distinguishing between one type and another type of haram. The majority of Hanafiyyah, Malikiyyah, Shafi'iyah and Hanabilah fuqaha also stipulate that it must start with the lightest *muharramat* based on the principle of *irtikab akhaff al-dararayn* (choosing the lightest harm). The victim of *darurah* should choose the lesser harm to avoid the more significant damage for the sake of the safety of life, mind, and other *daruriyyat al-khams* (Mohd Hapiz Mahaiyadin, Muhammad Rahimi Osman, Amal Hayati Ishak, 2019).

ANIMALS THAT ARE HALAL TO EAT AND SLAUGHTERED

The transfer of animal organs, members, and tissues to patients that are halal to eat and have been slaughtered by Islamic rulings and conditions does not pose any concerns. These materials do not fall under the category of unclean substances (Zulkifli Mohamad al-Bakri, 2015). Cows, buffaloes, and goats are halal animals that are not considered unclean (Nazarli, E., 2010).

By Islamic law, Zulkifli Mohamad al-Bakri has proposed that the transfer of organs from animals to humans is permissible only if the animals belong to the category of clean. This implies that organs can be removed from halal animals that have been slaughtered or are otherwise acceptable for consumption to fulfil the emergency needs of humans requiring organ transplants.

An analysis by Mohammad Naqib bin Hamdani and Mohd Anuar Ramli in 2018 explored the resolutions and fatwas issued by eight fatwa bodies regarding organ transplants. The bodies included in the analysis were MFID, MFI, MUIB, DIM (Egypt), HKU, LDF (Saudi Arabia), HAF (Kuwait), DIF (Palestine), and MFIH (India). The study revealed that the law generally permits the performance of transplants involving living donors. However, the order of organ usage dictates that halal edible animal organs are to be used as a secondary option, following artificial organs. The use of organs from halal animals that were not appropriately slaughtered is placed as the third option, to be used only in cases of absolute necessity and to be combined with organs from haram animals.

ANIMALS THAT ARE HALAL TO EAT AND NOT SLAUGHTERED

Scholars hold varying viewpoints on using ingredients from a halal animal that is not slaughtered and considered carrion. These discussions cannot be dissociated from the context of the madhhab.

According to a study conducted by Zulkifli Muda and Nizaita Omar in 2003, the opinions of the scholars of the madhabs on the matter at hand are detailed, particularly when it comes to the extremities of animal carcasses in the form of solid objects. Such perspectives will likely interest academic and professional settings due to their potential implications in various fields. The Hanafi school believes that the members or parts of the body of deceased animals, such as bones, horns, teeth, hooves, and elephant tusks, complex objects with no blood flow, are not considered unclean. According to this perspective, the cause of the uncleanness of the members or parts of the carcass is the presence of liquid impurities, such as blood and mucus, on these members.

However, such impurities are not found in the parts of animals that are complex objects. According to the Shafi'i school of thought and most scholars, all carcass parts are unclean, including complex objects. In the context of the discussion from the point of view of the madhabs, another aspect that is also emphasized is related to emergencies. According to the Shafi'i school of thought, animal carcass members of complex objects should be limited to emergencies or desires only. This is because these members are unclean.

The Hanafi school of jurisprudence espouses a more expansive view concerning using animal carcasses and complex objects as substitutes for certain parts of the human body without any limitations on their use in emergencies. Hanafi scholars openly endorse this perspective, as evidenced by various expressions attributed to them. For instance, *al-Fatawa al-Hindiyyah* explicitly permits using bones from goats, oxen, camels, horses, or other animals to treat ailments.

The utilization of non-slaughtered animals' members, organs, and tissues that are not complex objects, such as the heart and liver, is deemed unnecessary, except in cases of dire necessity or emergency. This is because all madhabs consider these organs unclean. It is worth mentioning that the use of limbs, organs, and tissues taken from animals that are not lawful to eat is like that of dead animals that are lawful to consume. However, this does not apply to pigs and dogs, as they are prohibited in all cases. (Zulkifli Muda & Nizaita Omar, 2003).

Scholars have varying views on determining the law regarding the use of carcasses or related unclean items, as per Ihsan Nurmansyah's 2020 analysis. These differences stem from

their understanding and interpretation of the text found in the Qur'an. Additionally, discrepancies in the interpretation of the verse are linked to differences in hadith narrations, leading to divergent views among scholars. For instance, Ihsan Nurmansyah cites Imam Malik's perspective in this regard.

In the context of carrion utilization, Imam Malik is known to hold two opinions. The first is the permissibility of utilizing carrion. At the same time, the second is seen as contradictory, as it states that carrion and other unclean things are not allowed to be used in any form whatsoever. The justification for the permissibility of this practice is based on a narration from the hadith of the Prophet SAW, where it is stated that during a visit to Maymunah RA's house, the Prophet SAW came across a sheep carcass, which he noted was not being fully utilized by his companions. Indeed, the hadith indicates that a sheep's skin that has become a carcass can be used by tanning it first. This narration is mentioned in the works of Muslim (2004): He said: "Ibn 'Abbas reported that the Messenger of Allah (SAW) once passed through an area with a discarded goat. The servant gave it to Maimunah, who obtained it from charity. So, the Prophet said: Do you not want to take its skin? Then they tanned the skin and took advantage of it".

According to al-Qadi 'Iyad (2009), in his *Syarah Sahih Muslim*, various hadith narrations exist regarding the utilization of animal skins after their death, which has led to differing views on the subject. Specifically, Ahmad bin Hanbal believes it cannot be utilized, whereas Ibn Shihab requires it. Furthermore, the majority view is that it cannot be used without first undergoing tanning. This debate highlights the complexity of the issue and the importance of considering multiple perspectives.

The basis for prohibiting a particular item is derived from Surah Al-Maidah verse 3. However, the verse does not explicitly mention the prohibited item, and it cannot be concluded that the verse is global (*mujmal*), as a *mujmal* verse is not easily comprehended and requires further explanation to reveal its true meaning. In support of this, Ibn 'Abbas reported that the Messenger of Allah (SAW) once encountered a discarded goat, which had been obtained from charity and given to Maimunah. The Prophet suggested that they use the goat's skin, and they subsequently tanned it and utilized it.

According to Ihsan Nurmansyah, individuals proficient in the Arabic language must possess a direct understanding of the meaning of Allah's words. Furthermore, the Prophet Muhammad has prohibited Muslims from deriving any benefits from animal carcasses, including their skins and bones.

The prohibition of treating patients with unclean goods is primarily due to the availability of other halal alternatives that can be used for treatment. The ban can be lifted if the cause of the prohibition ceases to exist, such as a lack of halal options. In the context of circumcision, unclean items may be used in the process. However, some scholars prohibit the use of anything that is haram for treatment, citing a hadith of the Prophet SAW. Nevertheless, if an emergency arises, scholars tend to agree with certain conditions, such as when a person's life is at risk. In cases where an illness is not life-threatening, scholars have been known to hold divergent opinions.

According to the prevailing opinion among scholars, using unclean objects as medicine is considered haram or prohibited. Most scholars from the Malikiyah, Hanbaliyah, and Hanafiyyah schools of thought share this viewpoint. They base their stance on the hadith of the

Prophet (SAW), as narrated by Abu Darda, which asserts that Allah SWT provides remedies for diseases and forbids the use of unclean substances as medicine. Therefore, it is deemed inappropriate to use unclean objects as a means of treatment.

Scholars have offered two distinct views concerning using haram substances as medicine, particularly within the schools of al-Shafi'i and Hanafi. The first perspective asserts that using haram substances in non-compelling situations is unacceptable. This argument is predicated on the notion that permissible medicines can always be found as an alternative. The second view maintains that using haram substances as medicine is permissible in cases of necessity where no other permissible alternative can be procured. The debate highlights that using haram substances as medicine is acceptable in cases of necessity (*darurah*). This is consistent with the fiqh principle of *al-darurat tubih al-mahzurat*, which allows for prohibited practices in emergencies (Ihsan Nurmansyah, 2020).

The utilization of non-slaughtered animal organs for medical purposes, particularly in emergencies, has been discussed in the context of Islamic law. Ervin Nazarli (2010) addressed this topic in his study titled "Islamic Law Review of the Practice of Xenotransplantation of Pig Organs to Humans." Nazarli stipulated that animals that have not been slaughtered according to the *syarak* method are prohibited, except in rare instances of emergency and when no other options are available. In support of this claim, an *athar* is presented, which states, "Repent, O servants of Allah, but do not repent with the unlawful."

In principle, there is a hadith that argues that it is not allowed to repent for something that is forbidden, namely the hadith narrated by Abu Dawud (2009) as follows: Meaning: "Verily, Allah, the Exalted, has sent down a disease and a cure and has made for each disease a cure, so pray for all of you, and do not pray with haram things." (Rated as *sahih li ghairih* by al-Arna'ut).

In his commentary on the hadith, he states, "Allah does not send down sickness but sends down for it a cure." Ibn Hajar in Fath al-Bari presented another hadith narrated by Abu Dawud. According to Ibn Hajar, it is imperative to specialize in treating illnesses with halal methods and not necessarily resort to haram methods. This underscores the importance of adhering to ethical and lawful practices in medicine. In addition, there is a hadith narrated by Abu Dawud (2009) through Abu Hurairah RA, which argues for the prohibition of using unclean medicine as follows: Meaning: "The Prophet (SAW) forbade the use of filthy medicine (*al-khabith*) i.e. poison." (Sanad is *hasan* according to al-Arna'ut).

The term *al-khabith*, mentioned in Hadith literature, has been interpreted in various ways concerning its meaning. Mulla 'Ali al-Qari (2002) provides some insight by citing the perspectives presented in Syarah al-Sunnah, which suggests that it refers to what is considered impure and hence forbidden, including meat from animals that are prohibited for consumption. Interestingly, the Sunnah of the Prophet SAW also specifies the consumption of camel urine. Furthermore, an addition at the end of the same Hadith by Abu Dawud includes the phrase "*ya'ni al-sum*," which interprets "*al-khabith*" as something poisonous.

The 389th Irsyad al-Hadith series, authored by the Official Mufti of the Guild Region, clearly prohibits using unclean and haram objects for medicinal purposes. Both hadiths support this view. However, the prohibition is contextualized when pure medicine is still available. In such a scenario, using unclean and haram objects is strongly discouraged. The implication is that their use is strictly prohibited unless there is a pressing need.

THE REGULATION OF XENOTRANSPLANTATION OF HARAM ANIMAL ORGANS TO HUMANS

The consensus among scholars is that using unclean materials for medicinal purposes is prohibited. However, there are different opinions regarding the necessity of such materials in emergencies. The Shafie school maintains that using bones deemed unclean is only permissible in urgent circumstances when no pure alternative is available (siakapkel, 2021).

The Majma' al-Fiqh al-Islami Rabitah al-'Alam al-Islami convened on 28 Rabi' al-Akhir to 7 Jamadil Awwal 1405H and deliberated on the matter of transferring animal organs to humans. The council has determined that such transfers must only be executed using organs that are derived from animals that can be eaten and slaughtered in a manner that adheres to Sharia principles. In all other cases, such transfers are only allowed in the event of an emergency. This position is further supported by Sheikh 'Atiyyah Saqar, former Mufti of the Arab Republic of Egypt, who, in his fatwa dated May 1997, addressed the question of whether an unclean animal bone can be connected to a person's broken bone if no human bone is available. The same view was expressed by Sheikh Jad al-Haq 'Ali Jad al-Haq, former Mufti of Egypt, on December 5, 1979, in his fatwa (siakapkel, 2021).

The application of human-animal organ transplants is governed by a fundamental principle prohibiting using unclean material for reparative purposes in the presence of pure material. However, in cases of pressing urgency where pure material is unavailable, unclean material may be used. This principle aligns with the fiqh principle of "emergency permits the use of what is forbidden" or the principle of "eliminating harm." Moreover, concerning animals explicitly prohibited by Shari'ah, such as pigs, it is essential to note that this prohibition is restricted to their consumption and is considered *qat'i* (definite). This is a consensus amongst scholars, as noted by Nietzsche and Niswatin Mubarrirroh in 2021.

The basis for the prohibition of pigs is apparent in the eyes of the community, as Allah says in surah al-Baqarah:173: "Verily, Allah has only forbidden you to eat carrion, and blood, and pork, and animals slaughtered not for the sake of Allah, so whoever is compelled to eat it out of necessity and does not desire it, nor does he exceed the limit, then he has not sinned. Verily, Allah is Forgiving and Merciful."

Xenotransplantation of pig elements is a medical procedure employed when conventional medical alternatives fail to treat diseases resulting from damage to the internal aspects of the human body. This procedure involves transplanting pig tissue or organs into human recipients. The primary objective of xenotransplantation is to alleviate suffering and restore limb function in non-life-threatening conditions. For instance, transferring external insulin elements from pigs to humans has proven effective in mitigating pain and preventing damage to other body parts. Despite its success, the procedure remains controversial due to ethical, scientific, and technical considerations. Nevertheless, it remains a viable option for treating various medical conditions.

Xenotransplantation is considered the last option when a life-threatening situation arises, such as transferring a pig's heart valve into a human body. The first objective of xenotransplantation is categorized as necessity circumstances (*masalahah hajiyyah*), while the second objective is categorized as emergency circumstances (*masalahah dururiyyah*). Although only a few organs can currently be transplanted, the effectiveness of xenotransplantation has

encouraged scientists to work towards transplanting larger and more critical organs for human use. In Islam, the transfer of a genetically modified pig's heart into a human body is permissible only in urgent situations when there are no other alternatives. (Noor Naemah Abdul Rahman & Mohd Afifuddin Mohamad, 2016; Shakira Buang, 2022).

Patients' use of prosthetic limbs, organs, and tissues is contingent upon three conditions. Firstly, their application is mandated during emergencies, based on the generalization of the two verses above. In instances where unclean materials must be consumed, counterfeit devices made from such materials are more naturally required, as it does not render eating prohibited but only their usage. Counterfeit implements made from unclean materials are permissible if the member, organ, or tissue is necessary to complete the patient's daily life. Thirdly, using a counterfeit member organ or tissue made from unclean materials without any need or necessity for self and life is not required because it interferes with the prayer service, which must be performed in a state of cleanliness free of all impurities.

There exists an alternate fatwa from certain scholars of the Hanafi school of thought, which posits that if an unclean substance undergoes a transformation in its original appearance, shape, and properties, and thereby loses its defining unclean characteristics such as odour, flavour, and colour, it is no longer deemed unclean. Consequently, synthetic members, organs, or tissues that are fashioned from unclean materials, being denatured from their original appearance and properties, are no longer considered impure and may be employed without constraint, without necessitating an urgent need or exigency (Zulkifli et al., 2003).

CONCLUSION

Concerning the previously mentioned structure, a patient's use of haram animal organs must commence with the least severe *muharramat* of the haram effect. It is important to note that the patient is permitted to use haram organs, such as pork, alcohol, blood, and carrion, in their raw form solely when there are no other viable alternatives. This decree is explicitly articulated in the Qur'an and al-Sunnah.

Islamic law is a set of rules that are designed to ensure that Muslims lead a life that is free from undue hardships. When individuals are confronted with *darurah*, or situations of necessity, the sharia permits using some *muharramat*, or prohibited items, such as pork, blood, carrion, and wine, to save lives. The sharia recognizes that preserving the *daruriyyat al-khams*, or the five essential aspects of human existence, namely religion, life, reason, offspring, and human intellect, is a fundamental obligation. This leniency, or *rukhsah*, is consistent with the *maqasid* of the sharia, which seeks to protect and promote human welfare.

It is important to note that the haram status is not easily lifted to that of halal. While haram animal organs may be permissible during *darurah*, patients must exercise caution and not obtain such organs without due judgment. It is crucial to understand that the concession is only a temporary exemption from the original law, which deems such organs as haram. During regular circumstances, the use of animal organs with haram status, such as those of pigs, carcasses, and blood, as direct medicines and methods for healing is strictly forbidden. Thus, the use of such organs must be handled with care and subject to a rigorous filtering process under the guidance of medical experts.

Medical experts must consider the level of *mashallah* and the patient's emergency when using an organ with a haram status consensus, such as a pig's heart. They must also evaluate the versatility of halal animal organs. If halal animal organs are not suitable and, in a situation where medical experts confirm that the patient is in the highest *masyaqqah* and only haram animal organs can be used to save his life, an emergency procedure may be allowed.

Implementing a strict filter is necessary to prevent the misuse of sharia. Even in critical situations, Sharia instructs Muslims to prioritize the better *maslahah* and avoid the worse *mafsadah*. Ensuring the safety of a patient's life from any hazardous situation begins with assessing the patient's level of *masyaqqah* and utilizing the mildest *muharramat* first, as this serves to maintain the patient's *maslahah*.

In summary, while the use of animal organs for human transplantation raises complex ethical and religious issues, Islamic teachings guide how to approach such situations. The necessity and harm reduction principle are vital considerations, allowing for emergency use of forbidden materials in certain circumstances. The prohibition against consuming forbidden animals remains, but their use for medical purposes is permissible when no other alternatives exist.

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