

Chapter 13

Organ Transplantation

Organ transplantation is one of the major medical achievements of the twentieth century. Nowadays, many diseased organs are being replaced by healthy organs from living donors, cadavers, and from animal source. Successful bone marrow, kidney, liver, cornea, pancreas, heart, and nerve cell transplantations have taken place. The incidence is limited only by cost and availability of the organs. The discovery of effective immunosuppressive drugs in the late 1970s was an important step toward increasing the success rate of organ transplants and thus paved the way for organ transplantation to become a medical routine affair in the twenty-first century [1].

Definition

Organ donation is the donation of biological tissue or an organ of the human body, from a living or dead person to a living recipient in need of a transplantation.

The Encyclopedia Britannica (2013) defines organ donation, as the act of giving one or more organs (or parts thereof), without compensation, for transplantation into someone else. Organ donation is a very personal yet complex decision, intertwined with medical, legal, religious, cultural, and ethical issues. Today organ donation, strictly defined, encompasses the donation and transplantation of the heart, intestines, kidneys, liver, lungs, and pancreas (e.g., the islets of Langerhans) [2]. It also involves corneas, bones, skin, joint, blood, etc.

Types of Transplant

Autograft: Autotransplantation is the transplantation of organs, tissues from one part of the body to another in the same individual. Tissue transplanted by such “autologous” procedure is referred to as an autograft or autotransplant.

Allograft: An allograft is a transplant of an organ or tissue between two genetically non-identical members of the same species. Most human tissue and organ transplants are allografts.

Xenograft: A transplant of organs or tissue from one species to another. An example is porcine heart valve transplant, which is quite common and successful.

Historical Background

Organ transplantation is not a twentieth century novelty. Indeed, it was known in one form or another even in prehistoric times. Ancient Hindu surgeons described methods for repairing defects of the nose and ears using auto grafts from the neighboring skin, a technique that remains to the present day. Susruta Sanhita, an old Indian medical document written in 700 BC, described the procedure, later emulated by the Italian Tagliacozzi in the sixteenth century, and by British surgeons working in India in the seventeenth and eighteenth centuries [3]. Tooth transplantation was practiced in ancient Egypt, Greece, Rome, and pre-Columbian North and South America. Arab surgeons were adept at this technique one thousand year's ago [4].

At the time of Prophet Muhammad (PBUH)—AD 570–632—one of his companions, Qatada ibn Nu'man, lost his eye during the battle of Uhud. The Prophet replanted it and it became the better of his two eyes [5]. In the battle of Badr, the Prophet (PBUH) replaced the arm of Muawath bin Afra and the hand of Habib bin Yasaf [6]. Muslim jurists sanctioned transplantation of teeth and bones, which had been practiced by Muslim surgeons for over a thousand years. Imam Nawawi (631-671H/AD1233-1272) fully discussed the subject of bone and teeth transplantation in his voluminous reference textbook *AL Majmu*, [7] and his concise text book *Minhaj Attalibin* [8]. Al Imam Asshirbini commented on the same subject in his book *Muqni Al Muhtaj* [9]. The bone to be implanted could be from the same person (autograft) or from the corpse of another person (allograft) or from an animal (xenograft). The latter could be from a slaughtered (Halal) animal or from a Najas, i.e., a dead corpse (Carcass) or of porcine origin, both of which will not be allowed unless there is no other alternative and is deemed necessary. However, Zakaria Al Qazwini, a grand Qhadi (judge) in Iraq (600-682H/1203-1283AD), noticed that porcine bone grafts function more efficiently than other xenografts, and reported this fact in his book “Wonders of Creatures” [10].

Ibn Sina (Avicenna (607-687H/1210-1288AD) (the greatest Muslim physician), in his voluminous textbook “Canon” [11] regarded bone transplantation as a hazardous operation that he would never attempt to perform.

Timeline of Successful Transplants

- 1905 First successful cornea transplant by Eduard Zirm [Czech Republic]
- 1954 First successful kidney transplant by J. Hartwell Harrison and Joseph Murray (Boston, U.S.A.)

- 1966 First successful pancreas transplant by Richard Lillehei and William Kelly (Minnesota, U.S.A.)
- 1967 First successful liver transplant by Thomas Starzl (Denver, U.S.A.)
- 1967 First successful heart transplant by Christian Barnard (Cape Town, South Africa)
- 1981 First successful heart/lung transplant by Bruce Reitz (Stanford, U.S.A.)
- 1983 First successful lung lobe transplant by Joel Cooper (Toronto, Canada)
- 1984 First successful double organ transplant by Thomas Starzl and Henry T. Bahnson (Pittsburgh, U.S.A.)
- 1986 First successful double-lung transplant (Ann Harrison) by Joel Cooper (Toronto, Canada)
- 1995 First successful laparoscopic live-donor nephrectomy by Lloyd Ratner and Louis Kavoussi (Baltimore, U.S.A.)
- 1997 First successful allogeneic vascularized transplantation of a fresh and perfused human knee joint by Gunther O. Hofmann
- 1998 First successful live-donor partial pancreas transplant by David Sutherland (Minnesota, U.S.A.)
- 1998 First successful hand transplant by Dr. Jean-Michel Dubernard (Lyon, France)
- 1999 First successful Tissue Engineered Bladder transplanted by Anthony Atala (Boston Children's Hospital, U.S.A.)
- 2005 First successful ovarian transplant by Dr P N Mhatre (wadia hospital Mumbai, India)
- 2005 First successful partial face transplant (France)
- 2006 First jaw transplant to combine donor jaw with bone marrow from the patient, by Eric M. Genden Mount Sinai Hospital, New York
- 2006 First successful human penis transplant [reversed after 15 days due to 44 year old recipient's wife's physiological rejection] (Guangzhou, China)
- 2008 First successful complete full double arm transplant by Edgar Biemer, ChristophHöhnke and Manfred Stangl (Technical University of Munich, Germany)
- 2008 First baby born from transplanted ovary by James Randerson
- 2008 First transplant of a Vertebrate trachea|human windpipe using a patient's own stem cells, by Paolo Macchiarini (Barcelona, Spain)
- 2008 First successful transplantation of near total area (80 %) of face, (including palate, nose, cheeks, and eyelid) by Maria Siemionow (Cleveland, USA)
- 2010 First full facial transplant, by Dr Joan Pere Barret and team (Hospital Universitari Vall d'Hebron on July 26, 2010 in Barcelona, Spain.)
- 2011 First double leg transplant, by Dr Cavadas and team (Valencia's Hospital La Fe, Spain)
- 2013 First successful entire face transplantation as an urgent life-saving surgery at Maria Skłodowska-Curie Institute of Oncology branch in Gliwice, Poland.
- 2014: First successful uterine transplant resulting in live birth (Sweden)
- 2014: First successful penis transplant (South Africa)
- 2014: First neonatal organ transplant (U.K) [12]

World Activity in Transplantation

The greatest numbers of living donor kidney transplants, on a yearly basis, were performed in the United States (6435), Brazil (1768), Iran (1615), Mexico (1459), and Japan (939). In the Arab world, Saudi Arabia had the highest reported living kidney donor transplant rate [13].

The scarcity of organs has dire consequences. An average of 19 people dies each day waiting for a transplant that never comes. The World Health Organization WHO global observatory showed that in 2009 about 100,900 people received a lifesaving organ transplant, representing only less than 10 % of the global needs. The entire issue has raised serious ethical concerns and the debate over them rages unabated.

The increasing incidence of vital organ failure and the inadequate supply of organs, especially from cadavers, have created a wide gap between organ supply and organ demand, which has resulted in very long waiting times to receive an organ as well as an increasing number of deaths while waiting [14]. These events have raised many ethical, moral and societal issues regarding supply, the methods of organ allocation, and the use of living donors including minors. It has also led to the practice of organ sale by entrepreneurs for financial gains in some parts of the world through exploitation of the poor, for the benefit of the wealthy.

Renal Transplantation in the Arab World

The first successful renal transplantation in the Arab world took place in Jordan in 1972. Surprisingly, the kidney transplanted was from a non-heart beating deceased donor. Many Arab countries followed suit, starting their transplantation programs in the 1970s and 1980s, but all were from living related donors. Very few Arab countries managed to start deceased donor programs, notable among which is the Kingdom of Saudi Arabia [15]. Religion has an important part in personal life and government legislation in the Arab world; thus, organ procurement and transplantation had to wait for religious edicts (fatwas) to be passed about the permissibility of organ donation and brain death diagnosis before starting transplantation activities. In Saudi Arabia, the renal transplantation service went through several developmental phases, culminating in the establishment of the Saudi Center for Organ Transplantation, which has become the prototype of a successful multiorgan procurement center. Many patients from the Arab countries, especially from the Gulf countries, traveled abroad to get “commercial” transplants. These were usually done in poor countries where there was much abuse of the donors and poor results for the recipients [16].

All Arab countries that have deceased organ programs follow the opt-in (required consent) system. The only exception is Tunisia, which has had an opt-out (presumed consent) system since 1991 [16].

Types of Organ Donors

The sources of organs for transplantation, i.e., living donor (related and nonrelated), cadaveric donor, and brain-dead patients. In countries where transplantation is well established, organs are sourced from living and deceased (cadaveric) donors using different strategies, i.e., an opt-in (explicit consent), opt-out (presumed consent), and donation after brain death

What Is “Opt-in” and “Opt-Out” Systems?

The United States and many other countries all use what is commonly referred to as the “opt-in” organ donation system, in which individuals have to sign up to become a donor before their death, and then the final decision to use the organs from a given individual’s body rests with the potential donor’s family after their death.

Some European countries (including France Belgium, Finland, Denmark, Italy, Spain, Norway, and Sweden) have shed the restrictions of the opt-in system in favor of an opt-out system. The opt-out system presumes that all individuals would presumably consent to have their organs used for transplant. In Belgium, for example, only 3–4 % opt out, leaving 96–97 % of the population still in the pool of potential donors, as compared with the roughly 30 % of Americans who are organ donors in the opt-in system. The opt-in systems give a higher respect for the requirement of consent than the opt-out systems [17].

In practice many countries, have legislation allowing for implied consent [18] which pays little regard for informed consent and autonomy.

Islamic Principles and Rules Related to Organ Transplantation

Islam differs from many other religions in providing a complete code of life. It encompasses the secular with the spiritual and the mundane with the celestial. Man is the viceregent of god (Allah) on earth. “Behold the lord said to Angels: I will create viceregent on earth” [19]. He fashioned man in due proportion and breathed into him something of his spirit [20] and not only Adam was honored by Allah, but his progeny also, provided they followed the right path. “We honored the progeny of Adam, provided them with transport on land and sea; given them for sustenance things good and pure; and conferred on them special favors above a great part of our creation” [21]. Human life begins at the time of ensoulment, which is stated in the sayings of the prophet (PBUH) to be the 120th day from the time of conception [21]. Prior to that moment, the embryo has sanctity, but not reaching that of a full human being. Life ends with departure of the soul (or spirit); a process that cannot

be identified by mortals except by the accompanying signs—the most important of which is the cessation of respiration and circulation. Some jurists described weakening of vision, limpness of the feet, bending of the nose, whitening of the temples and the stretching of the face and loss of the ability to wrinkle as the signs of death [23].

The sanctity of the human body is not lessened by the departure of the soul and declaration of death. The human body, whether living or dead, should be venerated likewise. The prophet Muhammad (PBUH) rebuked a man who broke a bone of a corpse that he found in a cemetery. The prophet said, “the sin of breaking the bones of a dead man is equal to the sin of breaking the bones of a living man” [24].

The dead body should be prepared for burial as soon as possible in order to avoid putrefaction (which occurs rapidly in hot climates). Cremation is not allowed. Due respect and reverence should be given to the funeral, as exemplified by the prophet Muhammad (PBUH) who stood in veneration for the passing funeral of a Jew, at a time when Jews were waging war against him. One of his companions exclaimed: “It is the funeral of a Jew”—the prophet answered, “Is it not a human soul”? [25] Islam considers disease as a natural phenomenon. It is not caused by demons, stars or evil spirit. Indeed, disease is not even caused by the wrath of God or any other celestial creature. Diseases and ailments are a type of tribulation by God and expiate sin. Those stoics who forbear and endure in dignity are rewarded in this world and on the Day of Judgment. However, man should seek remedy for his ailments. The Prophet Muhammad (PBUH) told Muslims to seek remedy and treatment [26]. He ordered his cousin Saad ibn Abi Waqqas to seek the medical advice of Al Harith ibn Kaledah, a renowned physician of the time [27]. He also declared that there is a cure for every illness, although we may not know it at the time [28]. New methods of treatment should be searched for and applied if proven successful.

The prophet ordered Muslims to be compassionate to every human being. He also said, “All mankind is the family of Allah. Those who best serve his family are best loved by God” [29].

The human being should always maintain his dignity even in disease and misfortune. The human body, living or dead, should be venerated likewise. Mutilation of humans or animals is not allowed [30]. However, performing post-mortems or donating organs from a cadaver are not tantamount to mutilation of the corpse or an act of disrespect [31]. The harm done, if any, by removing any organ from a corpse should be weighed against the benefit obtained, and the new life given to the recipient. The principle of saving human life takes precedence over whatever assumed harm would befall the corpse [32]. Nevertheless, Sheikh Shaarawi, a renowned commentator on the Holy Qur’an, but not a Mufti (Jurisconsult), rejected all types of organ donation.

In the case of living donor, the principle of doing no harm—*premium non nocere*—is invoked. The donor cannot give one of his vital organs, which would end his life. It is an act of homicide or suicide, both of which are considered among the most detestable crimes in Islam. The donation of an organ whose loss would usually cause no harm, or a minimal increased risk to the health or life of the donor, is acceptable if the benefit to the recipient is greater than the harm. It invokes the

principle of accepting the lesser harm when faced with two evils. The harm done by the disease, which can kill a human life, is not to be compared with the harm incurred by donation [33].

Organ transplantation is a new method of treatment that can save many human lives and improve the quality of life for many others. Islam encourages a search for a cure and in-vokes Muslims not to despair, for there is certainly a cure for every ailment, although we may not know of it at the present time. The donation of organs is an act of charity, benevolence, altruism and love for mankind. God loves those who love fellow humans and try to mitigate the agony and sorrow of others and relieve their misfortunes. Any action carried out with good intentions and which aims at helping others is respected and indeed encouraged, provided no harm is inflicted. The human body is the property of God; however, man is entrusted with the body as well as other things. He should use it in the way prescribed by God as revealed by His messengers. Any misuse will be judged by God on the Day of Judgment, and transgressors will be punished. Suicide is equated, in Islam, with homicide. Even cremation of the corpse is not allowed. The only accepted and dignified way is burial of the corpse—which should be performed as soon as possible, but not immediately for medical certainty. Donation of organs should not be considered as acts of transgression against the body. On the contrary, they are acts of charity and benevolence to other fellow humans, which God loves and encourages. Human organs are not a commodity. They should be donated freely in response to an altruistic feeling of brotherhood and love for one's fellow beings [34]. Encouraging donation by the government (by any means) is allowed by Islamic Jurists, and is practiced in Saudi Arabia, Gulf Countries, and Iran.

Islamic Jurists Fatwas (Juridical Resolutions) Regarding Organ Transplantation

Muslim surgeons practiced autograft transplantation, which they learned from other nations, especially the Indians. They also practiced teeth and bone grafting from both animal and human sources (i.e., xenograft and homografts) as far back as a thousand years ago, having first obtained the consent of the jurists. Table 1 illustrates some of the recent Fatwas on organ transplantation. In the 20th century, Muslim jurists sanctioned blood transfusion, although blood is considered as Najas—i.e., unclean. The Fatwa of the Grand Mufti of Egypt, No. 1065 dated June 9, 1959, is an example of Islamic jurists' attitude toward new methods of treatment [35].

A Fatwa by Grand Mufti is almost a decree and not a mere juridical opinion; so is a Fatwa by a Conference of Jurists. However, each country legislative parliament should endorse it to become a law.

The majority of the Muslim scholars and jurists belonging to various schools of Islamic law invoked the principle of priority of saving human life and hence gave it precedence over any other argument. Sheikh Hassan Mamoon (the Grand Mufti of

Table 1 Fatwas relating to organ transplantation

Source	Date	Fatwa
Sheikh Maamoon (Grand Mufti, Egypt)	1959	Sanctioned blood transfusion
Sheikh Maamoon (Grand Mufti, Egypt)	1959	Sanctioned corneal transplants
Sheikh Hureidi (Grand Mufti, Egypt)	1966	Sanctioned organ transplants
Islamic Int. Conference (Malaysia)	1969	Sanctioned organ transplants
Algiers Supreme Islamic Council	1972	Sanctioned organ transplants
Sheikh Khater (Grand Mufti, Egypt)	1973	Allowed harvesting skin from unidentified corpses
Saudi Grand Ulama	1978	Sanctioned corneal transplants
Sheikh Gad Al Haq (Grand Mufti, Egypt)	1979	Sanctioned live and cadaveric donation
Kuwaiti Fatwa of Ministry of Endowment	1980	Sanctioned organ transplants
Saudi Grand Ulama	1982	Sanctioned organ transplants
3rd Int. Conference Islamic Jurists (OIC)	1986	Equated brain death with cardiac death
4th Int. Conference Islamic Jurists (OIC)	1988	Sanctioned organ transplants and trafficking
6th Conference Islamic Jurists (OIC)	1990	Discussed transplantation from embryos, IVF projects, CNS and auencephalics

Egypt) also sanctioned corneal transplants from cadavers of unidentified persons and from those who agree to donate upon their death (Fatwa No. 1084 dated 14 April 1959) [36]. His successor, Sheikh Hureidi, extended the Fatwa to other organs in 1966 (Fatwa No. 993) [37]. In 1973, the Grand Mufti, Sheikh Khater, issued a Fatwa allowing harvesting of skin from an unidentified corpse [38].

Grand Mufti Gad Al Haq sanctioned donation of organs from the living provided no harm was done and provided it was donated freely in good faith and for the love of God and the human fraternity. He also sanctioned cadaveric donors provided there was a will, testament or the consent of the relatives of the deceased. In the case of unidentified corpses, an order from the magistrate should be obtained prior to harvesting organs (Fatwa No. 1323 dated 3 December 1979) [39]. The Saudi Department of Research Fatwa studied corneal transplantation in H1376 (1976) and H1397 (1977). The Saudi Grand Ulama sanctioned corneal transplant the following year (Decree No. 66 H1398/1978) [40].

In Algiers, the supreme Islamic Council sanctioned organ transplantation in 1972, while in Malaysia, the International Islamic Conference sanctioned organ transplantation in April 1969 [41].

The Saudi Grand Ulama Fatwa No. 99, 1982, addressed the subject of autografts, which was unanimously sanctioned. It also sanctioned (by a majority) the donation of organs both by the living and by the dead, who made a will or testament, or by the consent of the relatives (who constitute the Islamic next of kin) [42]. The Kuwaiti Fatwa of the Ministry of Charitable Endowments No. 132/79, 1980 sanctioned live and cadaveric organ donation [43]. The Kuwaiti law No. 7, 1983, reiterated the previous Fatwa and pointed out that living donors should be over the age of 21 years in order to give their own consent.

The subject of the brain death was not addressed in any of these Fatwas. It was discussed for the first time in the Second International Conference of Islamic Jurists held in Jeddah in 1985. No decree was passed at that time, until further studies and consultations were obtained. In the Third International Conference of Islamic Jurists (Amman 1986), the historic resolution (No. 5) was passed with a majority of votes, which equated brain death to cardiac and respiratory death [44]. Death in the true Islamic teaching is the departure of the soul, but, as this cannot be identified, the signs of death are accepted. This decree paved the way for an extension of organ transplantation projects, which were limited to living donors. Campaigns for organ donation from brain-dead persons were launched both in Saudi Arabia and in Kuwait.

The unfortunate high incidence of road accidents in the Gulf area provides many cases of brain death. The tragedy should be averted by issuing and pursuing stricter traffic laws, and by other means. Meanwhile, it is a pity to waste such candidate cadavers without trying to save the life of many others who need their organs.

The Islamic Fiqh council of Islamic World League held in Makkah Al Mukaramah (December 1987), which passed Decree No. 2 (10th session), did not equate cardiac death with brain death. Although it did not recognize brain death as death, it did sanction all the previous Fatwas on organ transplantation. This decree received little publicity in the media, and cardiac and kidney transplants from brain dead individuals continued without any hindrance from the jurists.

The most detailed Fatwa on organ transplantation was that of the Fourth International Conference of Islamic Jurists, held in Jeddah in February 1988 (Resolution No. 1). It endorsed all previous Fatwas on organ transplantation, clearly rejected any trading or trafficking of organs and stressed the principle of altruism [45].

Later, the Islamic jurists started to discuss new subjects related to organ transplantation, viz. (A) Transplantation of the nerve tissue as a method for treating Parkinsonism or other ailments

- Transplantation from anencephalics;
- Transplantation of tissues from embryos aborted spontaneously, medically or electively;
- Leftover pre-embryos in vitro fertilization (IVF) projects [46].

The Sixth International Conference of Islamic Jurists, held in Jeddah in March 1990, addressed all these issues fully [47]. It sanctioned transplantation of nerve tissues to treat ailments such as Parkinsonism, if this method of treatment proved

superior to other well-established methods of treatment. The source of the nerve tissues could be:

1. The suprarenal medulla of the patient himself (autograft);
2. The nerve tissues from an animal embryo (xenograft);
3. Cultured human nerve cells obtained from spontaneous abortion or medically indicated abortions.

However, the conference deplored the performance of abortion for the sake of procuring organs. It reiterated the Islamic views against elective abortion, which is only allowed to save the life or health of the expectant mother. If, however, the fetus is not viable, organs can be procured if the parents donate and only when the fetus is declared dead. The aborted fetus is not a commodity and commercialism is not allowed.

Anencephalics cannot be used as organ donors until declared brain or cardiac dead. The fully informed consent of the parents should be obtained in every case.

Regarding leftover pre-embryos from IVF projects, the jurists recommended that only the needed ova should be fertilized by the husband's sperms. However, if excess fertilized ova were found, they should be left to die spontaneously. Cryopreservation or donation of these fertilized ova was not allowed.

The jurists also discussed transplantation of genital organs. They did not allow the transplantation of gonads, as they carry all the genetics inheritance from the donor. However, they sanctioned the transplantation of the other internal sex organs.

In 2003, the Islamic Fiqh council of Islamic World League, Makkah Al Mukaramah in its 17th session passed a Fatwa No. 3, which allowed using leftover pre-embryos for stem cell research and treatment of serious ailments.

Organ Donation Among Muslims in Europe

In his article, "Religio-ethical discussions on organ donation among Muslims in Europe," Dr Ghaly sheds light on the discussions among Muslim religious scholars on organ donation particularly related to Muslims living in Europe. The article examines three main religious guidelines (fatwas) issued respectively by the UK Muslim Law (Shari'ah) Council in 1995 in the UK, the European Council for Fatwa and Research (ECFR) in 2000 in Ireland and the Moroccan religious scholar Mustafa Ben Hamza during a conference on "Islam and Organ Donation" held in March 2006 in the Netherlands.

The three fatwas studied in this article show that by the end of the twentieth century Muslim religious scholars started to specifically address Muslims in Europe.

The three fatwas examined in this article shared one main purport; organ donation is in principle permitted in Islam [48].

The fatwa issued by the ECFR in 2000 quoted the pro-organ donation fatwas issued earlier in the Muslim world but further added some points of specific

relevance to Muslims in Europe. For instance, the fatwa stated that there are no ethical objections to directed organ donation and that donor's wishes should be respected in this regard as much as possible. As for the role of the deceased's family, the fatwa opined that if the deceased did not make up his/her mind before death about organ donation, then the deceased's family has the right to decide. The ECFR went even further by giving the same right to "the authority concerned with the Muslims' interests in non-Muslim countries" if the deceased's family was missing. The ECFR fatwa also indicated that there are no objections, from an Islamic perspective, to the opt-out system [49].

The second fatwa analyzed in this article was issued by the UK Muslim Law (Shari'ah) Council in 1995. Different to the ECFR fatwa, this fatwa was much less dependent on the religio-ethical discourse in the Muslim world. The UK fatwa also dedicated much more space to the concept of brain death and argued that this death-criterion is accepted from an Islamic perspective. The fatwa also clearly stated that Muslims may carry donor cards. Like the ECFR fatwa, the UK fatwa expressed no objection to the idea that the deceased's family can decide if the deceased did not have a donor card nor expressed his/her wish before death. Finally, the fatwa stressed that organ donation should be done freely without reward and that trading in organs is prohibited [50].

The third fatwa studied in this article was issued by a Moroccan scholar, Mustafa Ben Hamza, during a conference on "Islam and organ donation" held in 2006 in the Netherlands. This fatwa approved for a Muslim to donate his/her organs to a non-Muslim. A similar Fatwa was issued by Mufti of Singapore Sheikh Bin Sumait in early 1990s.

Contemporary English Sunni E-Fatwas on Organ Donation

Van den Branden and Broeckeaert analyzed 70 English Sunni e-fatwas and subjected them to an in-depth text analysis in order to reveal the key concepts in the Islamic ethical framework regarding organ donation and blood transfusion [51].

They found all 70 fatwas allow for organ donation and blood transfusion. Autotransplantation is no problem at all if done for medical reasons. Allotransplantation, both from a living and a dead donor, appears to be possible though only in quite restricted ways. Xenotransplantation is less often mentioned but can be allowed in case of necessity. Transplantation in general is seen as an ongoing form of charity.

They state that their findings are very much in line with the international literature on the subject. They also found two new elements: debates on the definition of the moment of death are hardly mentioned in the English Sunni fatwas and organ donation and blood transfusion are presented as an ongoing form of charity.

The impact of globalization and migration on Muslim minorities living in non-Islamic countries during the past 20 years has been very strong [52].

In view of the positive evaluation these fatwas give; and in view of the worldwide shortage of organs for donation, the importance of these English Sunni e-fatwas must not be underestimated [53].

Fatwas in Malaysia

The issue of organ transplantation has been discussed since the 1960s. As a result, a fatwa regarding organ transplantation was issued in 1970 by the National Fatwa Council. The fatwa is used as reference for matters pertaining to organ transplantation and donation in Malaysia, and is adopted by states which do not have a specific fatwa regarding the issue.

The latest one is the Penang Fatwa Committee which sat on December 30, 2009 issued a comprehensive fatwa regarding organ transplantation and donation. The fatwa was gazetted on 9th December 2010, stating that the organ and tissue transplantations are permissible under certain conditions [54].

For Living Donor, the Conditions Are as Follows

- a. Careful and professional medical examinations must be conducted by medical specialists to guarantee the safety of the donor to continue his or her life, the benefits, the advantages and disadvantages, as well as the success and failure of the transplantation.
- b. The transplantation is performed with the willingness and consent from the donor without any kind of coercion from any parties [55].
- c. Organ transplantation is the final resort in a critical and crucial situation, and there is an urgent need to save the life of other people especially those with family relationship.
- d. Written consent is obtained from the donor, and the donor is free to withdraw the consent at any time.
- e. The organ and tissue taken are from paired organs or a small part of an organ that can be taken without endangering the life of the donor.
- f. Medical practitioners should observe medical ethics.
- g. The transplanted organ and tissue are not for the purpose of trade.

For Cadaveric Donor, the Conditions Are as Follows

1. The death is not part of a pact or a plan to gain profit.
2. The death of the donor should be carefully ascertained.
3. It is performed under the donor's consent through a will or through his/her guardian and it must be witnessed by two witnesses.
4. There should not be any humiliation to the deceased.
5. Medical experts have verified that the organ and tissue from the donor can be used for donation.
6. The transplantation has a high degree of success.

7. The transplantation is performed with full discipline, knowledge, faith and piety, and respect should be accorded to the deceased following Islamic law, and humiliation should not take place.
8. The cadaver should be managed for burial.
9. If the donor is under aged or mentally-incompetent, consent from his or her legal guardian should be obtained [56].
10. Organ transplantation is the final resort in a critical and crucial situation, and there is an urgent need to save the life of other people especially those with family relationship.
11. Prayers (du‘a) should be offered to the deceased (for Muslims).
12. The transplanted organ and tissue are not for the purpose of trade.

Penang’s fatwa also stresses the following matters:

- The recipient of the organ and tissue must use the organ and tissue responsibly.
- It is permissible to transplant organs and tissues from a Muslim donor to a non-Muslim recipient, and vice versa.
- It is not permissible to donate organs and tissues from a Muslim donor to a kafirharbi (non-Muslim who wages war on Muslims) [57].

Organ Sale

Paying people to donate their kidneys is one of the most contentious ethical issues being debated at the moment. The most common arguments against this practice include:

- Donor safety;
- Unfair appeal of financial incentives to the economically disadvantaged;
- Turning the body into a money-making tool “commodity”;
- Wealthy people would be able to access more readily.

The idea of nonfinancial incentives may be rising in popularity as a way to entice people to donate their organs. Financial incentives aimed at encouraging living donation have received much attention from bioethicists lately. Most experts argue that buying and selling human organs is an immoral and disrespectful practice [58]. The moral objection raised most, is that selling organs will appeal to the socio-economically disadvantaged (poor, uneducated people) and these groups will be unfairly pressured to sell their organs by the promise of money. International trade in human organs, occur particularly in the developing countries of the world where cadaveric organs are not easily available and where there is marked disparity in wealth. As a consequence, a deplorable type of medical practice has emerged, where human kidneys are bought from the poor for transplantation into the wealthy clientele with soaring profits for brokers, private hospitals and physician [59]. It is estimated that since 1980, over 2,000 kidneys are sold annually in India, Iraq, Philippines, Iran and elsewhere, to wealthy recipients from the Middle East, the Far

East and Europe. Human organ (“Kidneys”) trade has shifted from India to Pakistan [60]. Media had gone to the extent of labeling it as shifting of “Kidney Bazar,” “Bombay Bazar” from India to Karachi, Lahore and Islamabad [61].

In Saudi Arabia, the government controls the organ transplantation through SCOT (Saudi Center for Organ Transplantation). It gives incentives to the living donors and the families of the deceased donors.

In Iran, the government control and distributes the incentives for the living donors.

The World Health Organization argues that transplantation promote health, but the notion of “transplantation tourism” has the potential to violate human rights or exploit the poor, to have unintended health consequences, and to provide unequal access to services, all of which ultimately may cause harm. Thus WHO called to ban compensated organ transplanting and asked member states to protect the most vulnerable from transplant tourism and organ trade [62]. However, as disincentives becomes a must, adding incentives back, such as improving life condition for organ donors after donation, becomes difficult [63].

The Role of the Relatives in Postmortal Organ Procurement

Respecting the decision of the deceased person, whether in favor of or against organ donation, is a common starting point for the different legal systems which regulate the procurement of postmortal organs for transplantation.

However, opt-in systems claim a higher respect for the requirement of consent than the opt-out systems. When no legally valid decision of the deceased was registered, the family of the deceased can donate the organs of their deceased relative.

The opt-out systems allow harvesting the organs because of the absence of actual rejection from the side of the deceased [64]. The family cannot reject the donation of the organs of their loved one.

Public Media Campaigns

Public media campaigns should “demand the highest standard of transparency and accuracy of information related to healthcare issues so as to enable the general public to make informed decisions about health and lifestyles.” In order to overcome these ethical concerns and rehabilitate the ethical image of these media campaigns, Rady et al. propose five practical guidelines: “(1) media campaigns should communicate accurate information to the general public and disclose factual materials with the least amount of bias; (2) conflicting interests in media campaigns should be managed with full public transparency; (3) media campaigns should disclose the practical implications of procurement as well as acknowledge the

medical, legal, and religious controversies of determining death in organ donation; (4) organ donor registration must satisfy the criteria of informed consent; (5) media campaigns should serve as a means of public education about organ donation and should not be a form of propaganda” [65].

In conclusion, Organ transplantation is a highly complicated issue from an ethical perspective and thus cannot be reduced to one single ethical value. The noble desire to help patients who are in need of organ transplantation by making more donated organs available does not justify overlooking other ethical values such as objectivity in communicating information, the requirement of informed consent, providing psychological care whenever needed and doing justice to the religious aspects of the issue. Overlooking such ethical values can be counterproductive on the long run because potential donors might lose their trust in the whole system and thus decline to donate their organs in the future [66, 67].

New frontiers have been opened and Islamic jurists are keeping pace with the tremendous advances in medicine and technology. This chapter has discussed the pragmatism that prevails in interpreting the Islamic heritage as applied to present-day science.

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