

Current Assisted Reproductive Technologies: An Islamic Perspective

Yahya Ibraheem Yero

(Department of Religious Studies, Federal University Kashere, Gombe State, Nigeria)

Abstract: Human organ implantation or transplantation is one of the topics of the moment in our world today. As such, the Muslim Ummah is in dire need of knowing the legal status of this and other related issues in the Shari'ah. Thus, is it lawful/permissible for a Muslim to donate his organ or any part of his body to another person while he is still alive so that the organ/part could be implanted/transplanted to someone? If the answer is in the affirmative, then is it absolute permissibility or limited with certain conditionalities? And what are these conditionalities? If it is permissible to donate, then to whom will it be donated? Only to close relatives, or Muslims? Or to anybody whether a relative or an alien? Muslim or non-Muslim? If it is permissible, can the organ or part be sold? If selling is not permissible, can it be donated freely? What are Current Assisted Reproductive Technologies (CART)? Or Artificial Reproduction (AR)? Or Medically Assisted Conception (MAC)? There are many types of AR. However, in this paper, our discussion will be limited only to IVF, Surrogacy and Cloning. Now, what are In Vitro Fertilization (IVF), or Artificial Insemination (AI), Surrogacy and Cloning? What is the Islamic or Shari'ah ruling on these Assisted Reproductive Technologies? Are they lawful or unlawful? Are they permitted or prohibited? If they are lawful and permitted, under which circumstances will they be resorted to? In their yearning for children, some childless or barren couples across the globe have resorted to ART, AR, MAC, and in particular IVF, AI, or "Test-tube baby" technique, Surrogacy or Cloning. This paper will attempt to provide the views of Muslim jurists on these issues with a view to knowing its permissibility or otherwise in the Shari'ah.

Key words: CART: IVF, AI, surrogacy, test-tube babies, cloning, urologist, gynecologist, Islamic perspective

1. Introduction

In vitro fertilization (IVF) is the joining of a woman's egg with a man's sperm in a laboratory dish. In vitro means "outside the body". Fertilization means a sperm has been attached to and has entered an egg. IVF is a form of assisted reproductive technology (ART). That is to say, special medical techniques are used to help a woman become pregnant. IVF has been in use since 1978. It is mostly resorted to when other less expensive fertility techniques have failed to give the desired result (Muhsin, 2013, p. 3).

IVF is, therefore, a process of fertilization by combining an egg and a sperm in a lab, after which the embryo will be transferred to a uterus. The process begins by monitoring a woman's ovulatory process and then separating the ovum from a woman's ovary, then facilitating a sperm to fertilize it in a fluid medium in the lab. This process which gave rise to Louise Brown (the first successful test-tube baby born in 1978) is called In Vitro Fertilization

Yahya Ibraheem Yero, Ph.D., Associate Professor, Department of Religious Studies, Federal University Kashere; research areas/interests: Islamic political thought, Islamic history, history of the Sokoto Caliphate, human rights, and gender issues. E-mail: yahyaibraheem.ibraheem7@googlemail.com.

(Wikipedia, IVF). More than 200 women go through IVF every year, even though fewer than a quarter of these fertilization attempts are successful, but thousands of babies are now alive through this technique (Muhsin, op.cit.).

Artificial Insemination (AI) is the introduction of the sperm/semen of a man into the vulva or uterus of a woman by using modern technology to produce a pregnancy whenever a couple wishes to have a child but they cannot apparently achieve their dream through normal/natural conjugal relationship. This method is widely resorted to around the globe as a solution to infertile couples who have no off-springs due to certain malfunctions in their reproductive organs or other medical defects (ibid.).

Surrogacy is the act of substituting for another, e.g., a substitute parent, hence surrogate mother. A surrogate mother is a woman into whose womb is implanted an embryo formed by the fusion of the sperm of an alien man with the ovum of another woman, i.e., a different woman other than the surrogate mother (Valli, 1993, p. 46).

There are two types of surrogacy. These are: traditional and gestational. The traditional type is where the baby is conceived through artificial insemination and is genetically related to the surrogate and the intended father. While the gestational type is where a baby is conceived through in vitro fertilization. A baby is created from a donor's sperm and a donor's egg in vitro and thereafter it is transferred into the gestational surrogate or carrier. The surrogate mother is not genetically related to the baby at all. She only carries it for nine months because the intended mother is barren and unable to conceive (Muhsin, 2013, p. 4).

It is clear from the foregoing that IVF and surrogacy are not natural ways of conception and reproduction. As far as IVF is concerned, the fusion of egg and sperm takes place outside the body and it is free — to a greater extent — from the introduction or inclusion of a third party. But in surrogacy, the introduction of a third party (i.e., someone other than the husband and or wife) is accepted as a major player in the conception, gestation and delivery of a new baby.

Test-tube Babies, the process of fertilization between the sperm and the egg by using test-tubes is a medical technique to allow the sperm to meet the egg outside a woman's womb. Through this, fertilization will happen, then the egg is placed in the woman's womb through a medical process so that pregnancy can naturally occur in the womb. Natural fertilization usually happens in the womb according to the way Allah has created people. In some cases however, fertilization cannot happen through this natural way. For instance, when the fallopian tube is closed/blocked or damaged and it is not possible to open it or correct the damage, or when the sperm is weak or cannot reach the egg, and it cannot be treated by strengthening the sperm or by getting it to reach the egg. Any of these scenarios will prevent a couple from giving birth to children (Zallum, 1999, p. 26).

Cloning is to make a duplicate copy of the original living thing such as a plant, animal or human. Human cloning is to make a duplicate copy of the human himself. A particular human being can be duplicated by taking a living cell from that human, taking out the nucleus of that cell, and implanting it in a woman's egg after removing the nucleus of that egg (Zallum, p. 6).

Impregnation in the process of human cloning takes place between the human body cells and not the aphrodisiac cells — the sexual cells — (Qasmi, 2009, p. 30). Every cell has 46 chromosomes, which is the genetic substance that carries all inherited characteristics of the person, besides the aphrodisiac cells, which come from the testicle of a man and the ovary of a woman. Each of the aphrodisiac cells in both man and woman has only 23 chromosomes, which is half of the total chromosomes in the body cell. In natural fertilization, the spermatozoa of the man which has 23 chromosomes joins with the ovum of the woman which also has 23 chromosomes. Thus, a total of 46 chromosomes are obtained, half from the man and the other half from the woman. The new baby will,

therefore, take from the characteristics of both the man and the woman (Zallum).

In cloning procedure, however, the cell which is taken from the body of a particular person, has 46 chromosomes which includes all the inherited characteristics of that person. The baby that is born through cloning inherits only the characteristics of the person whose cell's nucleus was used. He will be a genetic duplicate of that person just like making a copy using instant color photocopying, where you get an exact duplicate in terms of height, profile, color, mental and other congenital psychological characteristics. In contradistinction to the natural process of fertilization, there is no need for a male (or a female as the case may be) in cloning procedure (Zallum).

2. Juristic Ruling on Donating Sperm or Egg to Infertile Couple or Single Parent

Islam urges Muslims to, not only, have children but raise them righteously according to Islamic teachings and guidance. This requires searching for and selecting good and righteous spouses who are capable of playing positive and constructive roles in nesting and raising the children. It is in view of this that the Messenger of Allah says: "Make a (good) choice for your sperm (i.e., progeny): marry worthy (women), and marry (your daughters) to them (worthy men)." [Reported by IbnMajah, al-Hakim and others]. Thus, procreation is one of the main goals/purposes of marriage. But, in trying to procreate Allah has ordained for Muslims the right channel of marriage in order to correctly produce more people who will seek to obey Him and live by His commands (Qur'an, Chapter 2, Verse 187).

Children are, no doubt, among the boundless favors of Allah to His servants in this worldly life. They are our precious sprouts. They give beauty, adornment and delight to our hearts (Qur'an, Chapter 3, Verse 14; Chapter 18, Verse 46; Chapter 16, Verse 72; Chapter 13, Verse 38; etc). However, in spite of all these facts and realities, that does not mean that everybody must procreate or have children in life as that is diametrically opposed to Allah's divine plan in the scheme of things. There is wisdom behind whatever Allah does. He gives only female children to some of His servants. To others, He gives only males. He gives both males and females to whom He likes, while some others He renders them barren or infertile according to His pre-ordainment.

Allah the Exalted says in Qur'an, Chapter 42, Verses 49–50:

To Allah belongs the dominion of the heavens and the earth; He creates what He wills. He gives to whom He wills female (children), and He gives to whom He wills males. Or He makesthem (both) males and females, and He renders whom He wills barren. Indeed, He is knowing and competent.

Some parents may be crazy in their yearning for children even if Allah in His infinite mercy has not given them one. These types of parents at times resort to every means at their disposal to get children and in that they are assisted by the professional medics, the Urologists and the Gynecologists, through ART, to get some children. But, do they really know the reason or wisdom why Allah has not given them offspring? Must the children, when they get them, be a source of happiness and blessing for them? Or they will be a source of perpetual sorrow and perdition for them? Allah the Most High says in Qur'an, Chapter 18, Verses 74 & 80–81:

Then they (Khidhir and Prophet Musa –As--) Proceeded: Until, when they met a young man, He (Khidhir) slew him. Moses said: "Have you Slain an innocent person who had slain none? You have certainly done a deplorable thing..." (Then Khidir said to Musa –AS--) ''As for the young man, His parents were people of faith, and we feared that he would grieve by obstinate rebellion and ingratitude (to Allah and man). "So we desired that their Lord would give them in exchange (a son) better in purity (of conduct) and closer in affection."

From the above Qur'anic narration, we can see that Allah in His infinite knowledge knew that that child would only be a source of sorrow and perdition to his parents. But, the poor parents didn't know that if not for the divine providence that saved them from the agony and waywardness of their child.

Thus, as Muslims, our Imaan demands that we should not step beyond the confines of the method of reproduction created by Allah the Exalted. If conception does not occur through normal and natural means, Muslims should resign themselves to the will of Allah, the Exalted because if Allah has not decreed a life, it will never come into existence, no matter what method and technique are employed. On the other hand, if Allah decrees the creation of a life, there is nothing to prevent its coming into being. Thus as Muslims, resorting to this unnatural technique is uncalled for, except in very rare circumstances and even then stringent conditions must be observed/satisfied before this method of reproduction of humans could be resorted to.

3. The Role of Muslim Urologists and Gynecologists in CART

Urologists and Gynecologists are at the center-stage of ART. They are the major players in the field of IVF, ET (Embryo Transfer), AI, Surrogacy and Cloning. That is why their role is specifically singled out for mentioning in this paper. Science without Religion to guide, regulate and check its excesses will be a disaster not only for humanity but the entire universe. There is no denying the fact that science has greatly simplified and improved the performance and practice of many religious rites and obligations. But that does not suggest that Religion cannot do without it. It has been there and functioning for centuries without science. However, let me quickly say before I am misunderstood that I am not in any way saying that medical doctors are not important. They are, indeed, very much needed and important in human societies. In fact, their importance need not be over emphasized.

Unlike non-Muslim Urologists and Gynecologists who are free to do whatever they like, whenever they like and howsoever they like. Muslim Urologists and Gynecologists who are really obedient and committed to their Religion and their Lord, are not free to do whatever they like — even if it is solving or alleviating the problems, hardships, worries, agonies or ailments of their patients — in contravention of the laws of the Islamic Shari'ah. The fact that some patients may sometimes come to them with an ailment/problem upon which they have no knowledge of the provision of the Shari'ah; is not enough a reason to permit them to embark on treating or providing them with a solution until they contact Muslim Jurists with a view to knowing Islamic injunction on the matter. That is necessary because providing Islamic solutions to contemporary problems are also part of the responsibilities and obligations of Muslim Urologists and Gynecologists. There is no doubt that Allah's guidance is the only comprehensive way to solving people's problems at the individual and communal levels. Allah the Most High says in Qur'an, Chapter 49, Verse 1:

O you who believe! do not put yourselves forward before Allah and His Apostle; but fear Allah. Indeed Allah is He Who hears and knows all things. Allah says again in Qur'an, Chapter 17, Verse 36:

And do not pursue that of which you have no knowledge. Indeed, the hearing, the sight and the heart – about all those (one) will be questioned (on the Day of Reckoning).

As a follow up from the above verse, Al-Futiy (N.D., pp. 29–30) and Abubakar (N.D., pp. 222–226) have both said in their commentaries on *Mukhtasar al –Akhdariy fi al- 'Ibaadaat*, a book of Islamic jurisprudence written by one of the famous Maliki Jurists of North and West Africa, Ash-Sheikh 'Abdurrahman al-Akhdariy, that: "It is unlawful for him (a matured Muslim — male or female) to do or say anything be it obligatory, recommended, prohibited, undesirable, or permissible; until he/she knows the injunction of Allah on that particular thing. He/she should ask Muslim scholars if he/she doesn't know — the injunction of Allah on anything (Qur'an, Chapter 21, Verse 7), and emulate only those scholars who follow the Sunnah of the Prophet (PBUH) as they are the only ones who guide people to be obedient to Allah and warn them against following the footsteps of satan (Qur'an, Chapter 4, Verse 115). It is, therefore, important that Muslim Urologists and Gynecologists should endeavor to have an intellectual forum where they can rub minds, brain-storm, share and cross-fertilize ideas with Muslim Jurists on contemporary issues so that at the end of the day, the Muslim Ummah will have concrete, correct and proper Islamic rulings on any contemporary issue that comes up.

4. Donating A Testis/Sperm

According to Qardawi (2010, p. 58), there is consensus among Muslim Jurists or at least majority of them that implanting/transplanting or donating testis from one person to another is not permissible. Medical doctors and scholars who specialized in this field of study have established that the testis is the reservoir/store-house for sperm which carries genetic or hereditary characteristics of a man, his family and descendants; and that it continues to, not only carry but, secret these hereditary peculiarities of the donor even after transplanting it to a new recipient. The implication of this is that, transplanting someone's testis to another man means that the progeny of the beneficiary, i.e., the person to whom the testis is donated — whenever he begets children, they will carry the characteristics/ peculiarities of the man who donated the testis in terms of complexion, tallness, shortness, cleverness, stupidity and so on. In other words, all the genetic characteristics pertaining to the body, intellect and soul/mind of the benefactor/donor will remain as they were with the beneficiary who received the donated organ.

The above scenario leads to mixing and loss of kinship ties which is forbidden by the Shari'ah. That is why Shari'ah prohibits fornication/adultery, adoption and falsely affiliating oneself to someone other than one's father. Therefore, what some scholars — who are not professionals and not specialists in this field of study — are saying, that when a testis is transplanted/implanted to someone it becomes part and parcel of him, is simply unacceptable (Qardawi, 2010, p. 59).

5. Donating An Egg/Ovary

Similar functions performed by the testis/sperm in a man, are also performed by the egg/ovary in a woman. Thus, the ovary/egg is the twin-half of the testis as far as functions are concerned, in terms of carrying the ovum/egg-cells for the genetic/hereditary characteristics, storing and secreting them. Therefore, the same law that applies to the sperm also applies to the egg. It is not permissible to transplant or donate a woman's egg to another woman. It is Islamically prohibited (ibid.)

The same ruling would be applied, if it were possible to implant or transplant someone's brain to another person. It is impermissible even if it were possible because it leads to mixing of personalities and great mischief, as man's brain is not only the source of his entire intellectual activities: his thought, his memory, how he connects issues, his imagination etc; but also the basis of his being responsible and answerable before Allah. It is also the basis/foundation of his identity. So, how can someone shoulder the burden/ responsibility of another person? (ibid).

6. Discarding the Excess/Extra Fertilized Ovum/Egg

Under normal circumstances, there shouldn't be any excess/extra fertilized egg. Scholars can continue their researches with the aim of preserving the eggs that are not yet fertilized but at the same time devising a method of keeping or retaining their ability to be fertilized in a normal way at any given time. That scholars/researchers should only fertilize the required number of eggs at any given time in such a way that there will be no extra or excess. If that is observed, then there wouldn't be the need to discuss about the fate or destiny of the extra fertilized egg (ibid., p. 81).

But whenever extra fertilized egg is obtained, majority of jurists are of the view that the extra fertilized egg has no legal inviolability/sacredness of any kind. It has no sacredness before it is implanted into the womb/uterus. Thus, any means could be employed to get rid of it. But some jurists have a contrary view. To them, this fertilized egg is the first stages of the creation of man who has been honored by Allah. Therefore, between destroying it, or utilizing it for scientific research, or allowing it to die a natural death; it appears that the last option is lesser in terms of sacredness because there is no positive transgression on any life. Besides, it is prohibited to use the fertilized egg for another woman who is not the real owner of the egg. (ibid.)

7. Surrogacy

Muslim Jurists have, many centuries ago, explained the Shari'ah rulings pertaining to the introduction of sperm into the female's body through unnatural means, i.e., by means other than conjugal relationship. Some of these rulings (Valli, 1993, p. 47) are:

(1) The introduction into a woman of the sperm of any man other than her husband is prohibited and immoral.

(2) The introduction into a woman of her husband's sperm through unnatural means will be permissible, under certain stringent conditions, for valid reasons, e.g., the wife is unable to conceive naturally. There has to be certitude that the sperm is from her husband.

(3) Procurement of the husband's sperm must not be through a prohibited method such as self-pollution/onanism. Besides, Allah the Most High says in Qur'an, Chapter 23, Verses 5–7: "And the believers who guard their private parts. Except from their wives or (the captives) whom their right hands possess, for (in their case) they will not be blamed. But those whose desires exceed those limits, then those are the transgressors."

(4) The word of a non-Muslim physician in an Islamic (Deeni) issue is unacceptable in the Shari'ah regardless of his integrity because he does not measure up to the Islamic requirement of giving testimony (shahaadah) (Valli, 1993).

(5) It is unlawful to implant in a woman an embryo that is developed through a prohibited way.

(6) It is prohibited to introduce sperm or embryo into a single parent (unmarried woman).

(7) If a sperm, other than that of the husband, is introduced into a woman, if she is married, the resultant child will legally be that of her husband even if it is confirmed that the sperm used did not belong to her husband.

(8) The same ruling will apply if the child results from an unlawful embryo. The child legally belongs to her husband even if the embryo was formed by the fusion of the woman's ovum with the sperm of another man other than her husband.

(9) The "sperm donor" has no right whatsoever over the child even if a prior agreement or contract was entered into to give him ownership of the child.

(10) The surrogate mother will naturally, truly and legally be the mother of the child.

(11) Where the woman is unmarried (a single parent), the child will be an illegitimate one. His or her parenthood will be related only to the mother. (ibid.)

(12) Abu Hurairah has narrated that he heard the Messenger of Allah saying: "Any woman who introduced to some people an offspring that does not belong to them, then she has nothing to do with Allah and she will not enter Paradise; and any man who denies his son while looking at him, he will not see Allah and Allah will disgrace him in front of the first and the last generations." (Zallum, 1999, p. 27)

(13) Ibnu Abbas has reported that the Messenger of Allah has said: "Whoever claims relationship by birth to other than his father or belonged to other than those he belongs to, then the curse of Allah, the Angels and all the people be upon him." (ibid.)

8. Cloning

Cloning has already been done with plants and animals. It has not yet been done with humans.

The aim of cloning in plants and animals is to improve quality and increase productivity, as well as to find a natural cure for many common human diseases, particularly the acute ones, instead of using chemical drugs which have harmful side effects on man's health.

Improving the quality of plants and animals as well as increasing their productivity is not prohibited in Islamic Shari'ah. It is even recommended. Using plants and animals, in cloning, to cure human diseases, especially acute ones is also allowed in Islam because seeking a cure for illness is recommended.

On the other hand, cloning of human beings, males or females, if done, would be a disaster for the world. This would be the case whether the aim was to improve quality, select the progeny which is smarter, stronger, braver, healthier, or more beautiful, or if the aim was to increase the number in order to increase the population of a given country to make it stronger. This would be a cause of evil. It is prohibited because of the following reasons (Zallum):

• Producing children through this means is unnatural (Qur'an, Chapter 53, Verses 45–46).

• Children born out of cloning females have no fathers, those that are born out of cloning males have no mothers, if a surrogate mother is involved then the children will have neither fathers nor mothers. These children will be in a loss (Qur'an, Chapter 33, Verse 5)

• Cloning leads to loss of or mixing up of kinship.

• Many Shari'ah rulings will be negatively affected, e.g., rules of marriage, kinship, alimony, fartherhood, sonship, inheritance, custody, forbidden degrees of consanguinity, etc

9. Summary

From the above discussion, it is clear that human organ implantation or transplantation from one person to another is permissible provided certain stringent conditions are observed. These are:

(a) The donor of the organ is not a minor. In other words, he must be matured and sane, and that the donation is given out of his own volition, not under duress materially or morally.

(b) That the donated organ must not be the only organ in his body such as the heart and the liver because the donor cannot live without any of these two.

(c) That donating the organ will not greatly harm and disfigure the bodily appearance of the donor even if the organ is in twos/double such as the eyes, the hands and the legs, etc.

(d) That the organ must not be one of the carriers or transmitters of genetic/hereditary characteristics such as the testis (sperm) in man, and the egg in woman.

(e) That the organ must not be one of the main genitals of a person such as the sexual organ and the anus; the seeing or touching of which is forbidden when one is alive and even after his death.

(f) That the implantation or transplantation must not be for commercial or exchange purposes. It must be purely donative/philanthropic from a living being. There is no prohibition on rewarding or giving a gift to the donor but that should not be made a pre-condition for donating the organ.

(g) That there must be a will from the deceased or permission from the family of the deceased, or a law from the Leader/Authority affirming the donation of what is donatable from the body of the deceased who died as a result of accident or his brain is dead but his heart is still functioning. However, this can only happen if there is nothing from the owner of the organ to prevent donating it.

(h) That donating the organ should not cause any harm to the donor himself or any other person that has a right over the donor.

(i) That it became manifest that this implantation/transplantation will save the life of the patient, and that there are no other means that will be of use.

(j) To have a strong feeling that the implantation will benefit the patient who received the donated organ, and that that will assist in treating his ailment in accordance with the established laws of Allah in the universe (Qardawi, 2010, pp. 59–60)

10. Conclusion

Current Assisted Reproductive Technologies are a welcome development in human societies as far as the Islamic Law is concerned, provided that the procedures followed in alleviating or solving human problems, sorrows and agonies, as well as the results that are obtained as a by-product of CART, are all in consonance with the dictates of the Shar'ah. Islam strongly supports, encourages and even recommends assisting and finding solutions to human problems of whatever type. It encourages research and enquiry into every field of study including science and technology, most especially, Genetic Engineering. However, Islam cautions against those pursuits which cause evil in human societies. It also cautions scholars, scientists, researchers, urologists and gynecologists about the direction to be taken in trying to proffer solutions to human problems and sorrows.

References

Abubakar A. (No Date). SharhunwaTahlilun li Mukhtasar al - Akhdariy fi al - 'Ibaadaat, Kano: Dar al - Ummah for Islamic

Publishers Agency.

Al-Futiy S.U.S. (No Date). Hallu al – Masa'il fi SharhMukhtasar al – Akhdariy bi ad – Dala'il, Republic of Mali: N.P.

- Louise Brown: Wikipeddia available online at: https://www.google.com.ng/search?q=www.wikipedia.ivf&oq= www.wikipedia.ivf&aqs=chrome.69i57.34373jOj4&sourceid; see also en.wikipedia.org/wiki/Louise_Brown.
- (2013). "My Journey through surrogacy... Some facts about surrogacy", available Jenn online at: http://www.surromomsonline.com/articles/journals/jennz/index.htm; quoted by Muhsin S. M. (2013). "Children by IVF and surrogacy: A juristic study on their laws of inheritance", in: Proceedings of National Conference on Human Rights in Islam: Issues and Challenges [CHRI2013], Malaysia: International Islamic University, Gombak Campus, p. 4.

Muhsin S. M. (2013). "Medline plus medical encyclopedia", p. 3.

Nadvi M. F. A. (2009). "Human Photo-copy: Introduction and analysis", in: Mujtahidul Islam Q. (Ed.), *Cloning in the Light of the Shari'ah* (1st ed.), Lebanon: Dar al – Kotob al – 'Ilmiyyah, pp. 29–43.

Peter H. R. and George B. J. (1999). Biology (4th ed.), U.S.A.: Michael D.L. p.119.

Qardawi Y. (2010). Zira'at al - A'ada fi Dau ash - Shari'ah al - Islamiyyah (1st ed.), al - Qahirah: Dar ash - Shuruq.

- The Qur'an: Arabic Text with Corresponding English Meanings (1997). Riyadh: AbulQasim Publishing House, See also Ali A.Y. (No Date). The Holy Qur'an: Text, Translation and Commentary, Beirut: Dar al 'ArabiyyahLittiba'ati wan Nashrwat Tauzi'.
- Valli R. (1993). Islam's Solution To...Abortion, Contraception, Organ Transplants, Test –Tube Babies, Gestation, Surrogacy, Prosthetic Surgery, Shomolu: Al – Waseelat Publishers.
- Zallum A. Q. (1999). Islamic Verdict On... Cloning, Human Organ Transplantation, Abortion, Test tube Babies, Life Support Systems, Life and Death, London: De Luxe Printers.