THE POSITION OF STEM CELL RESEARCH (AL-BUHTH AL-KHALAYA AL-JADARIYYAH) UNDER THE ISLAMIC LAW

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ABSTRACT

Therapeutic cloning is a newly emerging technology that promises a wide variety of benefits from humanity. The traditional notion of therapeutic cloning is to produce human *embryos* for use in research with the goal of harvesting *stem cell* that can be used to study human development and treat diseases. This newly emerging technology has caused a great deal of ethical, legal and theological discussion and debates. Therapeutic cloning has brought a lot of problems ranging from the strong belief that man is playing the role of God, risk of harm to the child/embryo and killing the value and Islamic moral in the society. The aim of writing this paper is to examine the problems associated with the practice of stem cell research in the society and further examine its validity under the Islamic law. This paper used doctrinal methodology to buttress issues at hand. The paper found that stem cell research is valid and permissible under Islamic law. The paper recommended that the process therapeutic cloning should be in accordance with teaching of Shari'ah and should not contradict its *maqasid* (objectives).The paper concluded that so many diseases could be healed through the use of stem cell research, neglecting in carrying out stem cell research would result in loss of lives, causes of diseases and injury to people.

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1.0 INTRODUCTION

Cloning is to make a duplicate copy of an original living thing such as a plant, animal or human. Human cloning is to make a duplicate copy of the human himself,[2] while therapeutic cloning involves the production of human embryos for use in research with the aim of harvesting stem cells that can be used to study human development and treat diseases.[3] This is bringing a lot of confusion ranging from the strong belief that man is playing the role of God, risk of harm to the child/embryo and killing the values and Islamic moral in the society.

There have been immense scientific developments in the fields of biology, foetal sciences, science of cells, medical biology, genetic engineering and last but not least animal cloning, as a preface for human cloning. These developments have exceeded all expectations and have been acknowledged with amazement.[4] Stem cell research is a newly emerging technology that promises a wide variety of benefits for humanity.[5] However, it has become a controversial issue. While it is in no way to be disputed that the ability to treat or heal suffering people is a great good, it must also be recognized that not all methods of achieving a desired good are necessarily morally justifiable. This newly emerging technology has caused a great deal of legal discussion and debate.[6]

Human cloning is an ambiguous term, even in science, and may refer to molecular cloning,[7] cecullar cloning,[8] embryo cloning (known as therapeutic cloning technology)[9] and nuclear somatic

[2] Al- khalifa, Islamic verdict on: cloning – Human organ transplantation – abortion – Test-tube Babies – Life support system – Life and death (Al- khalifa Publications, London, 1999) p.11.
[3] Kanchan, T., Mohan, T. S., et. el. Multifaceted Aspect of Human Cloning, Department of Forensic Medicine and Toxicology, K.M.C, Manglore and Manipal, Department of Microbiology and Forensic Medicine and Toxicology, HIMS, Dehradun India, (2006) 8 125, P.125.
[4] Al- khalifa (n 1).
[5] Askoy, S., Making regulation and drawing up legislation in Islamic Countries under conditions of uncertainty, with special reference to embryonic stem cell research, Journal of Harran University, (2005) 31, 399,p.399.
[6] ibid.
[7] Is a set of techniques used to insert recombinant DNA from a prokaryotic or eukaryotic source into a replacing vehicle such as plasmids or viral vectors.
[8] Unicellular organism, such as bacteria and yeast, naturally produce clones of themselves when they replicate asexually by binary fission. The nuclear DNA duplicates by the process of mitosis, which creates an exact replica of the genetic material.
[9] Is the production of human embryos for use in research with the goal of harvesting stem cells that can be used to study human development and treat diseases.

transfer (NST) (also known as reproductive cloning technology).[10] The nuclear somatic transfer is what occurred in Dolly[11] and this is what most people care about regarding cloning.[12] Human cloning has been subject of news in the United Kingdom (UK), the United State of America (USA), and South Korea, as well as in many other parts of the world. It has been also featured in Hollywood films, in television drama documentaries and in notable best-selling novels.[13] There is a broad, albeit loose, consensus among members of the lay public, various legislative bodies, and the scientific community that human reproductive cloning should be banned because there is something deeply immoral about it in principle (i.e, something above and beyond the fact that it would be wholly unacceptable to attempt it in humans until it appears reasonably safe). Precisely what this is, however, continues to elude even the most committed of critics.[14]

These immense scientific developments such as issue at hand and their applications, which were achieved through advanced technology, point to the greatness of Allah, His Might, His Wisdom, and the perfection of His creation. These things indicate that Allah is their Creator. They also indicate that they were not created by mere coincidence, because they follow a precise order and specific laws that control and regulate them.[15] Allah the Exalted says;

إِنَّا كُلَّ شَيْءٍ خَلَقْنَاهُ بِقَدَرٍ

And we created everything according to a precise measure.[16]

Although science is common and not particular to a view of life, its products and its applications are to be used according to the dictates of Islamic law. That which is allowed under the law can be taken and used, and that which is prohibited is to be left out. This is the way we should view and

[10] Is a process of nuclear transplantation and embryo splitting. The genetic material from the nucleus of a donor adult cell is transferred to an egg whose nucleus, and its genetic material has been removed. The reconstructed egg containing the DNA from a donor cell is treated with chemicals or electric current in order to stimulate cell division. Once the cloned embryo reaches a suitable stage, it is transferred to the uterus of a female host where it continues to develop until birth.

[11] Dolly was born in 1996 by the scientists Ian Wilmut and his team. This was the famous cloned animal because she was the first animal of any kind ever to be created from cultured, differentiated cells taken from an adult.

[12] Pence, G. E., Who is afraid of Human Cloning?, (Roman and Littlefield Publishers, New York, United State of America) p.1.

[13] Haran, J., & Kitzinger, J., et al. Human Cloning in the Media from Science Fiction to science practice, (Routledge Publishers, 2008, New York, United State America) P.1.

[14] Burley, J., & Harris, J., Human cloning and child welfare, Journal of Medical Ethics University of Manchester, (1999) 25, 108-113, p.108.

[15] Al-Khalifa (n 1).

[16] Q54:49.

deal with all things that are the products of science. Human reproductive cloning is not permitted in Islam because the religious dimensions of human cloning are determined by positive and negative aspects of this new technology. However, there is therapeutic cloning which because of its benefit is still surrounded by juristic controversies and this is the state of this research work. Therefore, it is based on this that the issue is covered by this paper. And the paper evaluates the issue based on the *Shari'ah* principles, to see what can be taken and what should be avoided.

1.1 **Definition and Concept of Cloning**

The word "clone" is derived from a Greek word for taking a cutting from a plant.[17] 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.[18] Therapeutic cloning refers to the removal of a nucleus, which contains the genetic material, from virtually any cell of the body (a somatic cell) and its transfer by injection into an unfertilised egg from which the nucleus has also been removed.[19] Researchers regard therapeutic cloning as an effective method for deriving human embryonic stem cells with specific characteristics, about which a great deal remains to be known and understood.[20] Thus, therapeutic cloning differs from reproductive cloning in two respects: first, in regard to the motive for which the cloning process is carried out and secondly, because of the destruction of the embryo.[21]

1.2 **Meaning ofStem Cells**

Stem cells are unspecialized cells that have the capacity for unlimited or prolonged self renewal, and, under the right conditions, for developing into one or several types of our body cells, such as liver cells or heart cells. These characteristics make them valuable means for research and

[17] Kanchan (n 2): Illmense, K., 'Mammalian Cloning and Its Discussion on Applications in Medicine, Journal of Reproductive Medicine and Endrocrinology' Andronology Institute of America, Lexington, Kentucky, U.S.A., (2007) 4 (1), 6-16, p.6, <www.kup.at> accessed 5 January 2015: See also Matsuura, K., Human Cloning Ethical Issues, United Nations Educational, Scientific and Cultural Organisetion, France, (2005), p.7.
[18] Al- khalifa (n 1) p.11.
[19] fact sheet 4, Therapuetic Cloning (Sometic Cell Nuclear Transfer), Australian Stem Cell Center, (2010), p.1, <www.stemcellcenter.edu.au> accessed on 28 December 2014.
[20] Fact sheet 4, (n 22) p.2.
[21] Staudacher, K., & Vossenkuhl, W., Ethical problems of therapeutic cloning an argument from the embryonic potential, Munich Research Center in Ethics (MKE), Ludwig-Maximilians University (LMU), Munich, Germany, (2009) 24, p.91.

therapy.[22] Some researchers believe that research cloning to create an embryo in order to derive genetically identical cellsfrom a patient, to cultivate and develop them to targeting cells or tissues, then to transplant them to the patient, will help avoid immune rejection.[23]

1.3. CLASSIFICATION OF STEM CELLS

There are three main types of stem cells: i) embryonic stem cells (ESCs), Cloned embryonic stem cells are the tools used for therapeutic cloning, which is designed to remedy disease, not as a means for reproduction;[24] ii) Adult stem cells (ASCs),are rare undifferentiated cellsfound among differentiated cells in a tissue or organ. The primary roles of adult stem cells in a living organism are to maintain and repair the tissue in which they are found.[25] iii) Induced pluripotent stem cells (IPSCs), are adult somatic cells (usually skin fibroblasts) reprogrammed to a pluripotent state by treating with specific transcription factors (or the genes encoding them).[26]

1.4 THE SIGNIFICANCE OF EMBRYONIC STEM CELL RESEARCH

Recent research involving cloning of human embryos is of enormous significance for humanity. These ES cells from patients with diseases have enormous significance for two reasons[27]:

1) Self-Transplantation

The first reason why this research is important is because it is a leap towards self-transplantation. The objective of what is often indicated as “therapeutic cloning” is to produce pluripotentstem cells that carry the nuclear genome of the patient and then induce them to differentiate into replacement cells, such as cardio myocytes to replace damaged heart tissue or insulin producing

[22]Devolder K. and Savulescu J., A Defense of Stem Cell and Cloning Research, Center for Environmental Philosopy and Bioethics, Philosophy Department, Ghent University, Belgium, p.3. See also Serephin R., History of Cloning, p.1., available at <www.cosmos.ucdavis.edu> visited on 16/12/2014.
[23] Mastuura (n 16) p.13-14.
[24] Boiani M., Cloning Human ES: a great leap forward, and still needed?, molecular human reproduction, Max-Plan-Institute for Molecular Biomedicine, Oxford Unversity Press, (2013), vol.0, 1-5, p.1.
[25]Mc Nally A., Scrivanich N., et el. Human Therapeutic Cloning was finally achieved this year: Does Anyone care? (unpublished), Faculty of Science, Worcester Polytecnic Institute, p.12, available at www.wpi.Educ/pubs/E.../IQP.pdf, visited on 5/1/2015.
[26] ibid.
[27] Devolder (n 21) p.4.

beta-cells for patients with diabetes, or virtually any cell type, including sex cells.[28] Therapeutic cloning is important for several reasons which includes:

a. There is a shortage of tissue for transplantation. As few as 5% of the organs needed ever becoming available, with the discrepancy between the number of potential recipients and donor organs increasing by approximately 10-15% each year in the US.[29]

b. There are problems with compatibility of transplanted tissue requiring immunosuppressive therapy with serious side effects. Moreover, cloned tissue would be compatible without the infectious risks of xenotransplants.[30]

c. The role of transplantation could be expanded to include common diseases like heart attack and stroke. After stroke, the dead part of the brain is replaced by scartissue. It may be possible in the future to use therapeutic cloning to give stroke victims new brain tissue.[31]

2) Cellular Models of Human Disease

The second reason why cloning research is important is because it opens up a whole new avenue of medicalresearch. It could be used to study in a radically new way any disease in a culture dish.[32] Other areas where cloning would be very useful is the study of genetic variation and its interaction with environmental factors and the study of interactions between genes and drugs; the study of early human development and the underlying mechanisms regulating cell growth and differentiation, which would provide better knowledge and control over the manipulation and reprogramming of cells within patients; and the investigation of how pathogens interact with specific cell types, which would help to understand how to use viruses as a vehicle for reintroducing healthy genes to a damaged body.[33]

The goal of therapeutic cloning is to harvest stem cells that can be used to potentially treat disease, rather than creating clonedhuman beings. However, the task of this paper is to examine the validity of the practice of therapeutic cloning under Islamic law. Therefore, some basic information about

[28] ibid.
[29] ibid.
[30] ibid. p.5.
[31] ibid.
[32] Devolder (n 21).
[33]ibid.

Islam to explain how Islamic law principles are drawn up, upon which the laws and regulations are based will be briefly discussed.

1.4 Islamic Perspective

Muslims in performing any act should ask themselves whether it is permissible or not. The permissible and prohibited actions are embodied in the *Islamic* law or *shari'ah*. The primary sources of *Islamic* law are the *Quran* and the *Hadith*.[34] New rulings about contemporary issues (such as issue at hand) that do not have specific reference in these two sources are to be derived by a process of *ijtihad*الإجتهاد (independent judgment). This is to be done by *Islamic* legal scholars فقهاء (*fuqaha*') or jurists. And there is a certain well specified methodology known as *usul al-fiqh*أصول الفقه that is use to reach an opinion or *alfatwa*الفتوى,[35]and corresponding secondary principles[36]. These include *ijma*الإجماع (consensus), *qiyas* القياس (analogy), *istihsan*الإستحسان[37] (juristic preference), *maslaha* المرسلةمصالح,[38] etc.[39]

1.5 A COMPARETIVE ANALYSIS ON THE STAGES OF EMBRYONIC DEVELOPMENT BETWEEN QUR'AN, HADITH (SUNNAH) AND SCIENCE.

We are going to discuss the fetal stages as explained by the Qur'an, Hadith and science in each of the stages.

Nutfah means a small drop (of fluid) but its composition is of mixed substance. This corresponds with the scientific observation that the combination of ovum and spermatozoon after their coming together has the shape of a drop of fluid. At the same time, it's a mixture of a man's and a woman's chromosomes. The interesting point is, that spermatozoa are formed in the testicles, and the testicles according to embryology, are formed from cells situated at the lower part of two kidneys

[34] Fadel, H. E., 'Developments in stem cell research and therapeutic cloning: Islamic Ethical Positions' a review, Blackwell Publishing Ltd., U.S.A, (2012) 26 128-135, p.128.
[35] However, these fatawas are not binding by law, and every country has its own legislation.
[36] Stokke, O. M. B, The Construction of Modern Islamic Authority, Analyzing the Medical Ethics of the Islamic Organization for Medical Sciences (Unpublished), department of Culture Studies and Oriental Languages, The Faculty of Humanities, University of Oslo, 2014, P.16, <http://www.duo.uio.no> accessed 23 April 2015.
[37] ''Istihsan'' literally means to deem something preferable. In its juristic sense, *istihsan* is a method of exercising personal opinion in order to avoid any rigidity and unfairness that might result from literal application of the law.
[38] Maslaha- literally means benefit or interest. In the opinion of Al- Ghazali maslaha consists of considerations which secure a benefit, or prevent harm. It includes also, protection of life, religion, intellect, lineage and property.
[39] Fadel (n 33) P.129-130.

in loins. During final stage of gestation, the lightening occurs.[40] This is confirm in Q7:7172. The verse is a clear indication that the very origin of man is the region of loins where the embryonic testicles form.

From the scientific fact it is mentioned that the fertilized ovum moves from the fallopian tube toward the uterus where it becomes implanted just as a seed is planted in the soil.[41] The Qur'an also mentions that human beings are created from a mixture of the male and female secretions and that after fertilization, the resulting organism settle in the mother's uterus like a seed. We mentioned that the uterus is regarded as the safest place for growth and development of the fetus, the Glorious Qur'an also clearly mentioned that. Allah the Almighty says:

فَجَعَلْنَاهُ فِي قَرَارٍ مَكِينٍ إِلَى قَدَرٍ مَعْلُومٍ فَقَدَرْنَا فَنِعْمَ الْقَادِرُونَ

Then We placed it in a place of safety (womb), for a known period (determined by gestation)? So We did measure; and We are the best to measure (the things)[42]

The process of transformation of the fetus from seminal drop to the clot takes more than ten days so that the drop mixture (fertilized ovum) can be attached to the placenta through a connecting cord that would later become known as the umbilical cord.[43] It is in the light of this that the Qur'an uses the conjunction 'ثم' in the noble verse:

ثُمَّ خَلَقْنَا النُّطْفَةَ عَلَقَةً

Then We made the Nutfah into a clot (a piece of thick coagulated boold)

The word "*Alaqah*" in *Arabic* has a number of meanings: Leech that lives in ponds and suck blood of other creatures, something that clings to another Static or frozen blood.

All these meanings apply to the situation of the human fetus after it settles down on the wall on the wall of the uterus. It looks like a leech; it clings on the wall of the uterus through the umbilical cord and blood vessels emerge from its interior like the shape of a network of network of closed

[40] ibid.
[40] Ahmad, Y. A., The Unchallengeable Miracles of The Qur'an, Maktaba Dar-us-Salam, Riyadh, 2010, p.179.
[41] ibid.
[42] Qur'an 77:21-23.
[43] Ahmad, Y. A., The Unchallengeable Miracles of The Qur'an, Maktaba Dar-us-Salam, Riyadh, 2010, p.179.

islands thereby giving it an appearance of a frozen clinging clot of blood. If we take the issue of the first streak that is the first thing created in a fetus and from which major cells, part of the body and different tissue are formed.[44]

At the end of the third week of pregnancy, the first streak become hidden and whatever is left of it settles in the coccyx region at the end of the spinal cord surviving on the remnants of the major cells in this region. This attests to the saying of the prophet, peace be upon him, according to what *Imam* Ahmad recorded in his *musnad* on the authority of Abu Huraira, may Allah be please with him: "every son of Adam shall decay and be eaten up by the earth except the tailbone. His creation and composition started from it."[45] i.e., the cells that form tissues and body are situated in the coccyx. It is from this tailbone that man is created. The stage of "lump of flesh" comes after the state of "clot". This succession corresponds with what the Qur'an says:

فَخَلَقْنَا الْعَلَقَةَ مُضْغَةً

Then We made the clot into a little lump of flesh

The fetus moves within the uterus as a chewed morsel is moved about in the mouth. Also, the word "Mudghah" means a substance chewed with the teeth. This word gives an apt description of the fetus' appearance in this stage.

The formation of the bones is the prominent formation of the bone phase for it is then the fetus changes from being like "a lump of flesh". It is the skeletal bone that gives the fetus the human appearance.[46] The Qur'an also used the term "bones", in the bones phase. The term that exactly and aptly describes the situation of this stage of fetal life. It is the most important physical change in the fetus and it is clearly different from the "lump of flesh stage". Allah, the most High says:

فَخَلَقْنَا الْمُضْغَةَ عِظَامًا فَكَسَوْنَا الْعِظَامَ لَحْمًا ثُمَّ أَنْشَأْنَاهُ خَلْقًا آخَرَ فَتَبَارَكَ اللَّهُ أَحْسَنُ الْخَالِقِينَ

Then We made out of that little lump of flesh bones, then We clothed the bones with flesh, and then We brought it forth as another creation. So, blessed is Allah, the Best of creators.

[44] ibid.
[45] Ahmad Bin Hambal, Musnad Ahmad Bin Hambal (Musnad Abdullahi Bin Mas'ud), Mu'assatul Qurtibah, Al-Qahira.
[46] Ahmad (n 39) p. 191.

This is also the confirmation of the Prophet's saying:

When forty nights pass after the semen gets into the womb, Allah sends the angel to give (the fetus) its shape. Then it is given ears, eyes, skin, flesh, and bones, and the angel then says: My Lord, would he be male or female?[47]

On the covering the bones with flesh (muscles), this stage is characterized by the covering of bones with muscles as a garment covers its wearer. With this covering, evenness of human shape of the fetus starts and the parts of the body are asymmetrically more connected with one another. It is after the completion of the formation of the muscles that the fetus can move. The fetus then transforms from an embryo to being a fetus,[48] a designation that fits its new phase according to Allah (S.W.A)'s statement:

فَكَسَوْنَا الْعِظَامَ لَحْمًا

Then We clothed the bones with flesh

Then after the development of the skeletal cartilage and its covering with muscles, the fetus transforms into a complete human being, clearly distinct from other beings.[49] This is what Allah (S.W.A) refers to in His verse saying:

ثُمَّ أَنْشَأْنَاهُ خَلْقًا آخَرَ فَتَبَارَكَ اللَّهُ أَحْسَنُ الْخَالِقِينَ

And then We brought it forth as another creation. So, blessed is Allah, the Best of creators

1.6 BENEFIT OF THERAPEUTIC CLONING UNDER ISLAMIC LAW

The most important factor in the concept of "*Islamic* Medicine" (IM) is its perspective on the history, theory and practice of medicine as pertaining to an *Islamic* tradition and an *Islamic* civilization.[50] In other words, *Islamic* Medicine is the practice of a specific and unique system of medicine, which is contained in or otherwise based on the teachings of *Islam*.[51]*Islamic* medicine

[47] Muslim Bin Hajaj, Sahih Muslim, Darul Jaleel Beirut, Darul Afaaq Jadeed Publishers.
[48] Ahmad (n 39) p.198.
[49] ibid. p.200.
[50] Stokke, O. M. B, The Construction of Modern Islamic Authority, Analyzing the Medical Ethics of the Islamic Organization for Medical Sciences (Unpublished), department of Culture Studies and Oriental Languages, The Faculty of Humanities, University of Oslo, 2014, P.16, <http://www.duo.uio.no> accessed 23 April 2015.
[51] ibid.

is therefore a specific way (an *Islamic* way) of practicing medicine in general. Ethics, deemed as *Islamic* conduct, are thus also a part of an *Islamic* medical system.[52] Prophet Muhammad (peace be upon Him) ordered *Muslims* to get treated when they fall ill and to seek cures for all diseases. He is reported to have said:

إِنَّ اللَّهَ أَنْزَلَ الدَّاءَ وَالدَّوَاءَ وَجَعَلَ لِكُلِّ دَاءٍ دَوَاءً فَتَدَاوَوْا وَلاَ تَدَاوَوْا بِحَرَامٍ

> *God did not create a disease without creating its cure except senility (death). So children of Adam, seek cures but do not use haram (forbidden things) in the treatment.*[53]

So there is a clear directive for *Muslims* to engage in research in general and in medical research in particular.[54]

Health is considered among God's most important bounties. The person is not the real owner of his/her body. It belongs to God. It is a trust and one has to preserve it. Some *Islamic* scholars tend to consider medical research directed toward new treatments as a collective religious duty فرض كفاية(*fardh kifaya*).[55]

Health is the most precious gift from Allah (S.W.T). Therefore, taking care of our health is a priority. People will live happily in this world when they are healthy, peaceful and have fulfilled their basic needs.[56] That is why the Prophet (Peace be upon him) had reminded *Muslims* to take advantage of five crucial things in life before they are gone.

اغتنم خمسا قبل خمس شبابك قبل هرمك و صحتك قبل سقمك و غناك قبل فقرك و فراغك قبل شغلك و حياتك قبل موتك

> *Try to make use of five things before five things: make full use of young age before getting old, benefit your healthy body before getting sick, be generous while you are rich before becoming poor and leading good life before death.*[57]

It is important for particularly *Muslim* consumers to know the necessary medications and its ingredients whether it is categorized as *halal* or non *halal*. Searching for *halal* is the duty of every

[52] ibid.
[53]Abu Dawuda Sulaiman Bin Al-Ash'ath Al-Sajistani, Sunan Abu Dawud, Darul Kitab Al-Arabi, Beirut.
[54] Fadel (n 69) p.130.
[55] ibid.
[56] Asmak, A., et al., Is our Medicine Lawful (Halal)?, middle-east Jorunal of Scientific Research, IDOSI Publications (2015) 23 (3), 367-373, 367 <http://www.idosi.org,> accessed 23 April 2015.
[57] Baihaqi Abubakar Bin Ahmad, Sha'abul Iman, Darul Kutub Al-Ilimiyya Beirut, 1410 A. H., First Edition, p.263.

Muslim as dictated by *Islam* and is not only limited for food and drink but also covers the entire life of a *Muslim* including medicine or pharmaceutical products.[58]

The role of the *Qur'an* and the *Sunnah* can be summarized as central to the common perspective on *Islam* as a "total" or "complete" way of life. It is also noted several times that the *Qur'an* is viewed as a book of guidance in life, and not one of detailed science, and must be treated accordingly as a tool in the re-contextualization of *Islamic* heritage. Others point to the ability of adaptation through the use of ijtihad, using the *Qur'an* and the *Sunnah* as the framework for harmonizing *Islam* to its contemporary context.[59]

A number of references to tradition are presented as essential to the development of a past *Islamic* hegemony, and consequently to the development of contemporary modern science and medicine. Especially two prophetic traditions (*Hadiths*) are seen as elementary:

ما أنزل الله داء إلا أنزل له شفاء

God did not send down a disease without also sending down its cure.[60]

and; **لِكُلِّ دَاءٍ دَوَاءٌ فَإِذَا أُصِيبَ دَوَاءُ الدَّاءِ بَرَأَ بِإِذْنِ اللَّهِ عَزَّ وَجَلَّ**

Every illness has a cure, and when the cure is administered, the disease is healed by God's Will.[61]

These teachings are stated to[62] have been the prime motivators of earlier *Muslim* scientists and should within the program of renewal and resurgence be the motivators of the following generations as well. This teaching implies that every available and useful treatment known to us should be utilized, and that if a treatment for a certain illness is not yet known to us, it is our duty to search for it until we find it.[63]

[58] Asmak, A., et al., Is our Medicine Lawful (Halal)?, middle-east Jorunal of Scientific Research, IDOSI Publications,2015, 23 (3), 367-373, 367, <http://www.idosi.org, > accessed 23 April 2015.
[59] Stokke (n 35) p.64.
[60] Abi Abdullahi Muhammad Bin Isma'il Al-Bukhari, 256 H., Sahih Bukhari, Darul Ibn Hazam, Beirut, 2009, First Edition.
[61] Muslim Bin Hajaj, (n 46) p. 21,
[62] Stokke (n 35)
[63] ibid. p.66.

Another central reference to the *Islamic* tradition is that the coming of *Islam* forbade rites of magic, superstitions and "mythological" elements in the field of scienceand medicine.[64] The *hadith*:

مَنْ أَتَى كَاهِنًا أَوْ عَرَّافًا فَصَدَّقَهُ بِمَا يَقُولُ فَقَدْ كَفَرَ بِمَا أُنْزِلَ عَلَى مُحَمَّدٍ صَلَّى اللَّهُ عَلَيْهِ وَسَلَّمَ

> *Whoever goes to a fortune teller or diviner without the known credentials, and believes what he is told; he is a non-believer in Islam.*[65]

According to the participants of the first two Codes of the *Islamic* Code of Medical Ethics (the Code of '81) ratified at the First International Conference of *Islamic* Medicine(the Conference of '81) held in Kuwait in 1981, this tradition was what enabled the development of a rational, scientific methodology and what is largely considered as the method of modern science among the participants, as it forbade superstition, forcing the use of sensory perception in medical practice.[66] This in turn implies that medical education should be taught to *Muslim* by "good *Muslims*" capable of presenting "praiseworthy examples" as role-models.[67]*Islam* has encouraged their followers to help people. According to the above discussion, it is clear that religion of *Islam* highly appreciate their followers to help people.

1.6 JURISTIC VIEW ON THERAPEUTIC CLONING.

When it comes to human embryonic stem cell (HESC) research where there is no precedent, scholars have to exert *ijtihad* utilizing the general principles of *fiqh* (Islamic law) such as:[68]a) All actions are in principle permissible as long as they are not categorically prohibited; b) In matters in which other invocations are silent the concept of *maslaha* (public interest) applies. 'Where the welfare of the people resides there resides the statute of God.'

There is a rather general acceptance of human embryonic stem cell research by *Islamic* scholars. This is based on the distinction they make between biological and human life coupled with the perception of its therapeutic potential. The latter is a significant consideration based on the *Islamic Shari'ah's* rule of public interest. Some scholars are so positive about this research that they

[64] ibid.
[65] Baihaqi (n 56): Muslim (n 46)
[66] Stokke (n 35) p.65.
[67] ibid. p.66.
[68] Fadel (n 33)

believe that if the therapeutic use of embryos saves human life, then such research is a collective religious obligation (*fard kifaya*).[69]

There are several religious scholars and institutions that made official statements or issued position papers relating to the *Islamic* point of view in relation to human embryonic stem cell research. we will cite only some examples. Because of the complexity of modern medical bioethical issues, a new modus operandi has been developed to help *Muslim* scholars to perform *ijtihad*: convening conferences including *Islamic* scholars as well as physicians and scientists of different backgrounds when discussing medicalissues. The *Islamic* Organization for Medical sciences (IOMS) was established in *Kuwait* in the 1980s.[70]

This organization conducts conferences periodically to discuss and make rulings on contemporary issues. Similar organizations have been established since then, for example, the Society for *Islamic* Medical Sciences in *Jordan*. Many conferences have been convened by these two organizations as well as by the *al-Azhar* University in Cairo, Egypt.[71] As early as the 1989 IOMS meeting, Shaikh Yaseen argued that while biological life starts at fertilization, human life does not start till ensoulment occurs at 120 days. He thus argued for the use of extra frozen embryos for medicalresearch under certain conditions.

This view was also supported by Shaikh Yusuf al-Qaradawi. A statement issued by the conference included this sentence: 'The opinion of the majority is that there is no reason to forbid scientific research on the supernumerary fertilized eggs before their nidation in the uterus.'[72]*Shite* Clergy also generally support and encourage SC research including human embryonic stem cell research. In 2002 Iran's Supreme leader Ayatollah Khamenie publicly supported human embryo research.[73] The *Muslim* World League's *Islamic* Jurisprudence Council conference in December 2003 held in *Mecca, Saudi Arabia* issued this *fatwa* (religious opinion):[74]

> *It is permissible to use stem cells for either legitimate scientific research or for therapy as long as its sources are legitimate for example, adults if they give*

[69] ibid.
[70] ibid. p.131.
[71] ibid.
[72] ibid. p.131-132.
[73] Saniei M. &De Vries R. Embryonic Stem Cell Research in Iran: Status and Ethics. Indian J Med Ethics 2008; 5: 181–184.
[74] Fadel (n 33)

> *permission as long as it does not inflict harm on them; children with their guardian's permission for a legal benefit without inflicting harm on them; placenta or umbilical cord blood with the permission of the parents; spontaneously aborted embryos or those aborted for a legally acceptable cause and with the permission of the parents; excess fertilized eggs produced during the course of IVF and donated by the parents with assurance that they are not to be used to produce an illegal pregnancy. It is forbidden to obtain or use stem cells if its source is illegitimate as, for example, intentionally aborted fetuses (abortion without a legal medical reason); intentional fertilization between a donated ovum and sperm; and therapeutic cloning.*

A *fatwa* by the Egyptian *Mufti* Dr. al-Tayyib in January 2003 stated that therapeutic cloning is lawful. The Malaysian National *Fatwa* Council issued a *fatwa* in the same year allowing human therapeutic cloning. Aksoy maintains that therapeutic cloning is acceptable to most *Islamic* scholars. *Shite* clerics also support therapeutic cloning.[75] A later IOMS meeting held in Cairo 2006 included presentations by physicians who concluded that embryonic research for therapeuticpurposes, including non-reproductive cloning, is *Islamically* permitted and encouraged. The Fiqh Council of North America in 2007 affirmed its earlier position of support for human embryonic stem cell research.[76]

The *IslamicMedical* Association of North America (IMANA) Ethics Committee published a position paper on stem cell research and added its approval. Both the *Islamic* Institute of Turkey and the Malaysian National *Fatwa* Council also supported human embryonic stem cell research.[77] Musa quoted a remark on the issue of cloning by a highly respected and contemporary *Muslim* scholar, Al-Qardawi:[78]

> *If it becomes possible through research to clone organs such as the heart, liver, kidneys or others which may benefit those who are in dire need of them; then this is permitted by religion and the researcher or scientist will receive the reward from Allah. This is because the research will confer benefit on humanity without loss to others or infringing upon them. Therapeutic cloning with this noble research pursuit is permissible and it is encouraged. In fact, in some circumstances, it may become mandatory to enhance this research in accordance with the need and man's research capability and accountability.*

[75] ibid. p.133.
[76] ibid. p.132.
[77] ibid.
[78] Abdul Rahman, R., Sulaiman, N.A., et al., Bioethical Issues of Tissue Engineering and Regenerative Medicine: A Preliminary Review from Islamic Perspective, Department of Biomedical Science, Kulliyyah of Allied Health Sciences, International Islamic University Malaysia, vol.4, 48-56.

Professor Abdulaziz Sachedina, at the University of Virginia, USA stated:[79]

> *Research on stem cells made possible by biotechnical intervention is regarded as an act of faith in the ultimate will of God as the Giver of all life as long as such an intervention is undertaken with the purpose of improving human health.*

While almost all *Islamic* jurists permit human embryonic stem cell research, all agree that, that creating embryos for the sole purpose of research is prohibited. They all agree that there should be strict guidelines for the use of human embryos for research. These guidelines should limit their use to research with reasonable promise of alleviating serious human disease, and there should be procedures and laws to ensure that these guidelines are followed.[80]

Muslim jurists have made a clear distinction between the stages before and after ensoulment[81] (when God says, "then, We (Allah) brought it forth as another creation") by applying the rule of "the basic concept of in useful matters is permissiveness" (which indicates that everything is lawful "*Halal*"),as long as it is useful to people, unless otherwise stipulated in religious prevision, or could be judge by analogy (*Qiyas*) with unlawful things (*Haram*), it is quite clear that *Muslims* consider an embryo to acquire human status at the time when the soul is breathe into it.[82] So it can be argued at least that *Islam* does not totally prohibit early embryonicstage research, especially if it is justified and deemed necessary.

However, the manner in which embryos may be obtained and the inherent risks to women who would be the source of such embryos pose serious and social problems. The use of embryo for therapeutic or research purposes may be acceptable under necessity, if it takes place before the point, at which the embryo is ensouled in its early stages of development (before 40-45 days of gestation). The source has to be legitimate; as such cells could be used to save lives.[83]

Therefore, stem cell therapy is allowed if the sources of the cell is legitimate; including left-over zygotes, or excess embryo (from in vitro fertilization laboratories) in the early stages of

[79] Sachedina, A., 2000, Testimony in Ethical Issues in Human Stem Cell Research Vol. III, Religious Perspectives. National Bioethics Advisory Commission, ed. Rockville, MD: National Bioethics Advisory Com- mission: G, 1–6. Available at: http://bioethics.georgetown.edu/nbac/ stemcell3.pdf. visited on 13/1/2015.
[80] Fadel (n 33).
[81] Al-Aqeel A. I., Human Cloning, Stem cell research An Islamic perspective, Saudi Medical Journal, Riyahd, Kingdom of Saudi Arabia, 2009,30(12),1507-1514.
[82] ibid.
[83] ibid.

development (before 40-45 days of gestation), and if the parent have Pp to its use.[84] When it comes to treatment modalities, *Muslim* scholars hold that *halal* (permissible) practices should be used to heal given diseases, however, in the cases whereby the *halal* methods cannot help, then for the sake of life saving and based on the principles of necessity, it is permissible to adopt prohibited treatments, so that lives are saved or harms are alleviated. Hence, in the *Islamic* ethical system, extraordinary circumstances allow exceptional measures, based on the principle: "necessity makes the unlawful lawful" (*ad-daruratu tubeeh al- mahzurah)*[85] الضرورة تبيح المحذورة. The substance, which is the fetus, in the stem cell case, is considered *taahir* طاهر (clean; pure).[86]

It is believed that advanced knowledge and application in tissue engineering and regenerative medicine such as cloning of cell or tissue is permissible from the eyeglass of *Islam* as long as it is not for the human cloning purposes.[87] Therefore, stem cell research for therapeutic purposes is permitted with full consideration and all possible precautions in the pre-ensoulment stages of early fetus development.[88]

1.7 FINDINGS & OBSERVATIONS

1.7.1 It is further noted "therapeutic cloning" remains ambiguous in the society, many still view it as "copying human" and human still plays the role of God from a new dimension.

1.7.2 The research work found that therapeutic cloning involves the use of: adult stem cells (ASCs), induced pluripotent stem cells (IPSCs) and embryonic stem cell (ESCs). The main controversy centers on ESCs because of disputes over the moral and status of an embryos' life. It further found that Islam does not suggest that the life of an embryo lacks time in Islam.

1.7.3 The research work found also that, ethical assessment of regenerative medicine and tissue engineering is a complex and technique-dependent. The Muslim Jurist's attention focuses more on the religious implications of this technology and Muslim jurist tend to focus on religious implication.

[84] ibid. p.1513.
[85] Kamali, M. H., Principles of Islamic Jurisprudence, Islamic Texts Society, Cambridge, 1991, p.291.
[86] Abdul Rahman (n 113) p.52.
[87] ibid. p.53.
[88] Al-Aqeel (n 116).

1.8 RECOMMENDATION

1.8.1 It is the paper's recommendation that, *Islam* does not object to this exploration. Therefore, therapeutic cloning should not be automatically charactrised as human is playing the role of God.

1.8.2 The paper recommended that recognition of rights to life and to health as basic human rights will further to strengthens societal acceptance and legal protection of therapeutic cloning that aims to restore health. The process therapeutic cloning should be in accordance with teaching of *Shari'ah* and should not contradict its *maqasid* (objectives).

1.8.3 The paper also recommended that, therapeutic cloning usages should be limited to legitimate medical aims to reduce moral objections and promote broader acceptance while protecting human dignity and bodily integrity.

1.9 CONCLUSION

Islam is in consistent with science and permits therapeutic cloning through embryos when aimed at treating diseases, provided it is in line with legitimate methods under *Islamic* law. The *Qur'an*'s description of fetal development aligns with modern embryology, confirming life's stages and guiding ethical considerations. Therapeutic cloning is lawful (*halal*) if it benefits people and avoids prohibited practices, while in cases of necessity, even ordinary unlawful methods may be permissible under the principle that necessity can make the unlawful lawful.