



LEGALITY OF IN VITRO FERTILIZATION SYSTEM AMONG THE COUPLES IN ISLAMIC LAW

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ABSTRACT

The traditional problems associated with childbirth had drastically reduced with the emergence of Assisted Reproductive Technologies (ART) and considerable advancement in the field of embryology and bio-medics in which In Vitro Fertilisation (IVF) is one of them. This innovation came about as a result of the need to cure infertility. This paper examines the legality of intro fertilization system in Islamic family Law. The study adopted the doctrinal method of legal research by conducting a qualitative content analysis of primary and secondary sources of materials. The primary sources include the Nigerian 1999 Constitution, Quran, Hadith and the Sunnah. The secondary sources include Ijm'a (consensus of Opinion), Qiyas (Analogical Deduction), books, journals and other text such as articles from newspapers, magazines and computer aided electronic research (internet) like Westlaw International and Lexis Nexis. The paper found that the practice of In vitro fertilization system has been in practice among Muslims for decades and it is permissible in Islamic Family Law with strict regulation of its uses. The paper concludes that its practice has been proven to have procure over 5 million babies. The paper recommends that it is important to educate Muslims that would want to take advantage of IVF treatment as to the extent of the permissibility and its use.

Keywords: In-Vitro Fertilization (IVF), Islamic Family Law, Assisted Reproductive Technology (ART).

1.0.0: INTRODUCTION

The desire to have one's own offspring is very strong in human affairs in this world. The *Quran*, documents this fact 'Wealth and progeny are the allurements of this world.'¹ A common phenomenon in the typical Muslims is supplication to have a child

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who may inherit him/her after death. Similarly, to show the significance of children in the life of mankind, it was reported that a prophet of Allah by name Zakariyah is in habit of praying to Allah to give him a successor who will inherit him, though Allah (SWT) later answered his prayers and he was blessed with a child called Yahya and was also made among the humble. This shows the importance of inheritance to the Muslims in particular and to the mankind in general. ‘And those who pray, Our Lord, grant unto us spouses and offspring who will be the comfort of our eyes.’² On the other hand, Muslims believe that God ordained that some couples would be infertile. ‘He creates what He wills. He bestows male or female children to whom He wills. He bestows both male and female children (to some) and He leaves barren whom He wills.’³

Islam also acknowledges that infertility is a significant hardship.⁴ *The Quran* gives the example of two prophets, Abraham and Zacharyyya, peace be upon them, who were barren and described how they longed to have children of their own, even as they grew old and almost despaired of having children. ‘Then did Zacharyyah pray to his Lord, saying, ‘O my Lord! Grant unto me from You a progeny that is pure, for You are He that hears the Prayers.’⁵ The method they used to achieve their goal was to ask God repeatedly and sincerely with humility and faith. Eventually God answered their prayers. ‘And the angels gave Abraham glad tidings of a son endowed with knowledge’.⁶

This does not mean that Islam asks the infertile couple only to pray to overcome this problem. A basic Islamic principle permits persons facing hardship to use all lawful means to solve their problem, while at the same time preserving their trust in God that He will help them achieve their goal. This is especially true in matters of health and disease. Prophet Muhammad (SAW) stated, ‘For every disease God has created a cure except senility(death) So progeny of Adam seek cure for your ailments!’⁷ This is conditioned on the use of lawful means and the sincere belief that God is the ultimate source of cure.’⁸ As Abraham was reported in the *Quran* as saying, ‘And when I get sick it is He who cures me.’⁹

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¹ Qur’an Ibrahim(14):46

² Qur’an Al-Furqan(25):74

³ Qur’an Ash-shura(42):49-50

⁴Hossam E. Fadel, *Assisted Reproductive Technologies: An Islamic Perspective*, [1993] (14)(17) *Journal of IslamicMed*

⁵ Qur’anAal-i-imram(3):38

⁶ Qur’an 51:28

⁷Muhammad Ashraf, *Mishkat Al Masabih* (James Robson, trans., **Sh.** Muhammad Ashraf, Kashmiri Bazar 1975). Sahih Bukhari p. 5678

⁸ibid.

⁹ Qur’an 26:80



Thus, it is clear that infertile couples are instructed and encouraged to seek cure of their infertility, but within the limits of what is permissible in *Islamic law*.¹⁰ The command to seek cures for disease also applies to physicians and other healthcare providers.

As a result of this discovery of new methods for the treatment of infertility, as well as all other diseases, it is a perfect and legitimate pursuit, but with the caveat that harmful or illegitimate methods are not to be used.¹¹

The Quran describes as losers in the Hereafter those who 'learn that what harms them and does not benefit them.'¹² The Prophet's supplications include, 'Oh God, teach me what is useful' and, 'I seek God's refuge from all knowledge that is harmful.'¹³

Until recently, the treatment for fertility was mainly by medications to correct hormonal deficiency, or by surgery to correct anatomical effects. These treatments were mostly non-controversial from an ethical or religious point of view. The advent of assisted reproductive technologies ("ARTs"), however, changed this situation dramatically. These technologies transferred the process of procreation from a private, personal relation between husband and wife, into artificial means in a lab, and, in many instances, involving a third or fourth party in the process. These changes in the procreative process challenge basic religious and ethical concepts.¹⁴

Before describing the specific reproductive procedures and the Islamic view on these procedures, how Muslim jurists derive their religious opinions on whether a certain procedure is permissible will first be explained.

Infertility is a known phenomenon globally which prevents conception and affects one in seven couples all over the world¹⁵. Different efforts are usually carried out by couples to cure infertility. However, new scientific inventions are being made on this ailment which are called Assisted Reproductive Technologies (ARTs). In vitro fertilization (IVF) is one of these procedures and has proven to be successful in treatment of infertility¹⁶.

IVF is a contemporary issue in medicine which has raised a lot of questions relating to religious, legal and ethical issues. More particularly on the religious point of view, Islamic law is concerned with this new innovation as every activity of Muslims must be viewed through the lens of Islamic rules and regulations in order to protect religious limits from being transgressed upon¹⁷. In addition, this challenge of infertility is also faced by Muslims who would likely seek to use this treatment as a means of reproduction. On this note, IVF needs to be viewed in the light of the basic principles

¹⁰The Encyclopedia, *Shari'ah*, Islamic jurisprudence, designates the rules and regulations governing the lives of Muslims (2d ed, the encyclopedia of islam, 1996).

¹¹Maher M. H., *Surrogacy: An Islamic Perspective*, [1989] (21)(105) Journal of Islamic Medicine

¹² Qur'an 2:102

¹³Muhammad Ashraf, al-Jazari, *al-HisnulHasin*, (Karachi 167, 1996); al-Jazari

¹⁴ibid.

¹⁵Biotin J. and others., '*International estimates of infertility prevalence and treatment-seeking: potential need and demand for infertility medical care*', [2007] (22)(12) Human Reproduction.

¹⁶Warren-GashC., 'Worldwide infertility rates, unchanged in 20 years says World Health Organisation' <http://www.bionews.org.uk/page_232839.asp> accessed 23 December, 2023

¹⁷Ayatollah S.M.T. 'Islamic Medical Jurisprudence' [1993](7)(2) *Medical Journal of Islamic Republic of Iran*, 7



of Islamic law in order to deduce the Islamic law position on it in the determination of the permissibility or otherwise of the use.

On this note, this work shall be examining the concept of IVF and its procedure, various arguments for and against its permissibility shall be discussed. Recourse shall be made to Islamic conference resolutions on IVF together with individual scholastic opinion, views of Islamic bioethics used to arrive at the agreed Islamic law regulations on In vitro fertilization (IVF) using relevant injunctions from the Qur'an and Hadith.

2.0.0: THE CONCEPT OF FERTILIZATION UNDER ISLAMIC LAW

From the beginning of the world man has always wanted to understand and probe into secrets of nature; how and when creation began and his purpose in this world. This inquisitive man sought the help of civilizations, nature, old manuscripts, sometimes even the prophesies of saints and above all, religions.¹⁸ Historically, Aristotle thought that foetus was formed in uterus from a coagulum of blood and seed from menstrual blood. Greeks and Europeans thought that foetus was created from menstrual blood, or else they thought that foetus was fully created and was in a miniature form in sperm or in ovule.¹⁹ In 1604 Fabricus came out with excellent drawings of chick embryo. Malphigi in 1672 who is considered father of modern embryology thought poultry eggs contained a miniature chick and others thought that human being was fully formed in sperm or an ovum.²⁰ He came out with chick drawings showing clear somites. In 1673 Leeuwenhoek invented the first microscope. Hartsoeker's drawing of a human spermatozoon in 1694 clearly had this impression that a fully formed homo nucleus (human form) was formed in a spermatozoon or in ovum, and so on.²¹ However, it shall be discussed under this chapter the definition of fertilization, types of fertilization, stages of fertilization, where fertilization occur, when fertilization occur, how long it takes for a sperm to fertilize, how long can sperm takes inside a woman to get pregnant, and conclusion.

2.1.0: DEFINITIONS OF FERTILIZATION

Fertilization is the joining of the genetic material of two different sex cells, called gametes, resulting in reproduction. Although most organisms go through fertilization for reproduction, the actual process of fertilization can differ significantly between organisms.²²

When discussing fertilization, it is important to note that fertilization and reproduction are not the same thing. Whereas fertilization refers to the process of two sex cells

¹⁸ Muhammad A.D and others., 'Medical embryology in the of light Qur'an and Hadith' [2022] (11)(7) *International Journal of Reproduction, Contraception, Obstetrics and Gynecology* <<https://www.ijrcog.org/index.php/ijrcog/article/download/11825/7438/42198>> accessed 24 December 2023

¹⁹ibid.

²⁰Sabiha Saadat., 'Human Embryology and the Holy Quran: An Overview' [2009] (3)(1) *International journal of Health Sciences* <<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3068791/>> accessed 24 December 2023

²¹ibid.

²² Kelly Robson., 'Fertilization | Definition & Process' (2023) <https://study.com/learn/lesson/human-fertilization-process.html> accessed 24 December 2023



combining, reproduction is the ability of a species to propagate to the next generation.²³Fertilization is when a man's sperm combines with a woman's egg to form a single cell. It's one of the first steps toward pregnancy.²⁴

Hence, fertilization refers to the biological process in sexual reproduction where a male gamete (sperm) fuses with a female gamete (egg or ovum) to form a new organism, initiating the development of a new individual. This union of genetic material from the sperm and the egg leads to the formation of a zygote, which contains the full complement of chromosomes necessary for the development of a new organism.

2.2.0: TYPES OF FERTILIZATION

Fertilization is the process by which male and female *gametes* are fused together, initiating the development of a new organism. However, below are the types of fertilization;

²³ibid.

²⁴ Tamekia Reece., 'What Is Fertilization?' (2023) <https://www.whattoexpect.com/getting-pregnant/fertility/how-fertilization-happens.aspx> accessed 24 December 2023



2.2.1: Fertilization in Animals

The fertilization process in animals can occur either internally or externally, a difference which is largely determined by the method of birth. Animals which use viviparous and ovoviviparous reproduction (embryos develop within the animal's body), and oviparous animals which lay hard shelled eggs, use internal fertilization.²⁵

Internal fertilization involves the union of sperm and eggs within the body of the (usually female) parent. In order for internal fertilization to occur, the male must implant his sperm into the female reproductive tracts. Implantation can be achieved by either:²⁶ copulation, in which sperm transfer is performed by insertion of the penis or other male intromittent organ and ejaculation into the vagina, or cloaca: or by a cloacae kiss, in which two birds press their cloacae together and sperm transfer takes place.²⁷ Some animals, such as mollusc, arachnids, salamanders and certain insects, transfer a spermatophore, a bundle or capsule containing sperm, which is stored within the cloaca until oviposition takes place.²⁸

Animals which are oviparous, though produce eggs that are lacking, or have thin egg membranes, reproduce by external fertilization.²⁹ External fertilization is a reproductive strategy involving the joining of gametes outside of the body, either in a spawning event, where gametes from both sexes are rapidly released into an aquatic environment, or may occur when eggs are laid by a female on a substrate, and are subsequently fertilized by a male.³⁰ External fertilization holds certain benefits, such as reducing the chance of contracting sexually transmitted diseases, protection from violent behavior between organisms, and increasing the genetic variation within a population.³¹

2.2.2: Fertilization in Plants

Fertilization in plants occurs after pollination and germination. Pollination occurs through the transfer of pollen which is the male microgametes of seed plants, producing the sperm from one plant to the stigma (the female reproductive organ) of another. The pollen grain takes up water and germination occurs.³² The germinated pollen grain sprouts a pollen tube, which grows and penetrates the ovule (the egg structure of the plant) through a pore called a mycropyle.³³ The sperm are then transferred through the pollen tube from the pollen.

²⁵ B.D Editors., 'Fertilization' (2017) <https://biologydictionary.net/fertilization/> accessed 24 December 2024

²⁶ *ibid.*

²⁷ Kelly Robson., 'Fertilization | Definition & Process' (2023) <https://study.com/learn/lesson/human-fertilization-process.html> accessed 24 December 2023

²⁸ *ibid.*

²⁹ Dan Bennett., 'Fertilization' (2021) <https://pressbooks-dev.oer.hawaii.edu/biology/chapter/fertilization/> accessed 24 December 2023

³⁰ Lumen, 'External and Internal Fertilization' (2020) <https://courses.lumenlearning.com/wm-biology2/chapter/external-and-internal-fertilization/> accessed 24 December 2023

³¹ *ibid.*

³² Biology., 'Pollination and Fertilization' <https://courses.lumenlearning.com/suny-biology2xmaster/chapter/pollination-and-fertilization/> accessed 24 December 2023

³³ *ibid.*



In flowering plants, a secondary fertilization event takes place. Two sperm are transferred from each pollen grain, one of which fertilizes the egg cell to form a diploid zygote.³⁴ The nucleus of the second sperm cell fuses with two haploid nuclei contained within a second female gamete called the central cell. This second fertilization forms a triploid cell, which subsequently swells and develops a fruiting body.³⁵

2.2.3: SELF FERTILIZATION

The process of fertilization, which involves the cross-fertilization between gametes from two different individuals, male and female, is called allogamy.³⁶ Autogamy, also known as self-fertilization, this occurs when two gametes from one individual fuse; this occurs in hermaphrodites, such as flatworms and certain plants.³⁷

2.3.0: STAGES OF FERTILIZATION IN ISLAM

While Islam recognizes the general idea of the development of life in stages, over a period of time, human beings are considered as a special act of creation.³⁸ Islam teaches that human beings are a unique life form that was created by Allah in a special way, with unique gifts and abilities unlike any other mammal: a soul and conscience, knowledge, and free will. In short, Muslims do not believe that human beings randomly evolved from apes.³⁹ The life of human beings began with the creation of two people, a male and a female named Adam and Hawwa (Eve). The Qur'an describes how Allah created Adam where Allah says: 'We created man from sounding clay, from mud moulded into shape...'⁴⁰. And, 'He began the creation of man from clay, and made his progeny from a quintessence of fluid'⁴¹. Thus, human beings have a fundamental attachment to the earth⁴².

However, in the Hadith reported on the authority of Abee Abdir Rahmaan Abdillaah ibn Mas'ood (ra) who said: "the Messenger of Allaah (saw) who is the truthful one and the one to be believed is narrated to us."⁴³

³⁴ LumenLearning., 'Pollination and Fertilization - Double Fertilization in Plants' (2019) <[https://bio.libretexts.org/Bookshelves/Introductory_and_General_Biology/Book%3A_General_Biology_\(Boundless\)/32%3A_Plant_Reproductive_Development_and_Structure/32.07%3A_Pollination_and_Fertilization_-_Double_Fertilization_in_Plants#:~:text=Of%20the%20two%20sperm%20cells,are%20known%20as%20double%20fertilization.>](https://bio.libretexts.org/Bookshelves/Introductory_and_General_Biology/Book%3A_General_Biology_(Boundless)/32%3A_Plant_Reproductive_Development_and_Structure/32.07%3A_Pollination_and_Fertilization_-_Double_Fertilization_in_Plants#:~:text=Of%20the%20two%20sperm%20cells,are%20known%20as%20double%20fertilization.>)> 24 December 2023

³⁵ *ibid.*

³⁶ EncyclopediaBritannica., 'self-fertilization' (2020) <https://www.britannica.com/science/self-fertilization> accessed 24 December 2023

³⁷ *ibid.*

³⁸ Hathout H., 'An Islamic perspective on human genetic and reproductive technologies' [2006] (12)(2) *Eastern Mediterranean Health Journal* <https://www.emro.who.int/emhj-volume-12-2006/volume-12-supplement-2/an-islamic-perspective-on-human-genetic-and-reproductive-technologies.html> accessed 24 Decemer 2023

³⁹ *ibid.*

⁴⁰ Qur'an 15:26

⁴¹ Qur'an 32:7-8

⁴² *ibid.*

⁴³ Hadith 4, Al-Nawawi



Verily the creation of each one of you is brought together in his mother's womb for forty days in the form of a nutfah (a drop), then he becomes an 'alaqah (clot of blood) for a like period, then a mudghah (morsel of flesh) for a like period, then there is sent to him the angel who blows his soul into him and who is commanded with four matters: to write down his rizq (sustenance), his life span, his actions, and whether he will be happy or unhappy (i.e. whether or not he will enter Paradise). By the One, other than Whom there is no deity, verily one of you performs the actions of the people of Paradise until there is but an arms length between him and it, and that which has been written overtakes him, and so he acts with the actions of the people of the Hellfire and thus enters it; and verily one of you performs the actions of the people of the Hellfire, until there is but an arms length between him and it, and that which has been written overtakes him and so he acts with the actions of the people of Paradise and thus he enters it.⁴⁴

2.3.1: **Nutfat amshaj (drop that is mixed)**

Nutfa means a drop and amshaj means mixtures.⁴⁵ This term describes the mixture and convergence of male and female fluids in the uterine or the Fallopian tubes to form zygote. It has the form of a drop of fluid and consists of a mixture of male and female secretions. The nutfaamshaj can be subdivided into:-

2.3.2: **Khalk:**

When the male and female secretions meet they may or may not form a coceptus or a zygote. If a zygote is formed with 46 chromosomes, a new being will be produced.⁴⁶ This process of formation of a single individual by fusion of two secretions has been aptly termed Khalak.⁴⁷

2.3.3: **Taqdir:**

The human creation begins with formation of a zygote but what are its characteristics, what it will inherit from father and what from mother? This process takes place a few hours after Khalak phase.⁴⁸ The Holy Quran called it Taqdir phase and modern scientists call it genetic programming. The Taqdeer in Arabic means planning, determining or programming. Very similar indeed! The Quran indicates that these

⁴⁴ibid.

⁴⁵Sabiha Saadat., 'Human Embryology and the Holy Quran: An Overview' [2009] (3)(1) *International Journal of Health Sciences* <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3068791/> accessed 24 December 2023

⁴⁶ibid.

⁴⁷ Yazan Hamzeh and ChristianllyCena.m 'Female Gametes | Overview, Production & Process' (2023) <https://study.com/learn/lesson/female-gametes-production-process.html> accessed 23 December 2023

⁴⁸ BCcampus., 'Fertilization and Early Embryonic Development' (2023) <https://opentextbc.ca/biology/chapter/24-6-fertilization-and-early-embryonic-development/> accessed 24 December 2023



processes occur in immediate succession and we know that these processes are completed less than 30 hours after fertilization.⁴⁹ The process of sex determination takes place in this stage. The Quran states in sura An-Najam that:

‘And He did create the two sexes, the male and the female from Nutfah when emitted or planned’. it is a common knowledge in biology that if sperm with a “y” chromosome fertilizes ovum, it is a male child and if sperm bearing “X” chromosome fertilizes ovum it is a female child

2.3.4: *Harth*:

When the phases of Khalk and Taqdir are completed, the zygote migrates from fallopian tube to the uterus where it implants itself similar to a seed planting in soil. It gets embedded in endometrium and receives its nourishment and develops a different shape and structure.⁵⁰ It is mentioned in Qur’an that endometrial lining of the uterus is similar to the soil in which a seed is embedded. During this stage the real settlement begins, and is described In Prophet’s Hadith as: The Angel enters upon the conceptus (nutfah) after it rests in the uterus for forty or forty-five nights.⁵¹

2.3.5: **Takhliq (Creation)**

During the second main stage, the Takhliq, cell differentiation takes place to form systems and organs. It starts at the beginning of the third week upto eighth week and is a process of rapid cell growth and intense activity with regard to organogenesis. The embryo goes through the following stages:⁵²

2.3.6: *Alaqah*:-

The period begins on day 15 and is completed on day 23 or 24, when the embryo gradually acquires the shape of a leech, the Arabic word “alaqah” has three meanings which are Leech, a suspended thing and a blood clot⁵³. There is a great similarity between a fresh water leech to early embryo. Enclosed picture shows the similarity between the two.⁵⁴ The second meaning is a suspended thing and that is what we can see the way embryo is attached to the placenta in this stage. Both these meanings describe and reflect accurately the external appearance of embryo at this stage.⁵⁵ The third meaning “the blood clot” describes the most important internal structure that affects the external appearance, for in alaqah stage blood is formed in the blood vessels

⁴⁹Sabiha Saadat., ‘Human Embryology and the Holy Quran: An Overview’ [2009] (3)(1) *International journal of Health Sciences* <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3068791/> accessed 24 December 2023

⁵⁰ *ibid.*

⁵¹ Hadith, Sahih Muslim

⁵²Sabiha Saadat., ‘Human Embryology and the Holy Quran: An Overview’ [2009] (3)(1) *International journal of Health Sciences* <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3068791/> accessed 24 December 2023

⁵³ *ibid.*

⁵⁴Sabiha Saadat (n27) 6

⁵⁵ *ibid.*



in the form of isolated islands and the embryo resembles a blood clot descriptions are given miraculously by a single word “Alaqah”.⁵⁶

2.3.7: *Mudghah*

The second stage is Mudghah which means a chewed substance. The embryo changes from Alaqah to Mudgaha stage at 24 to 26 days. The word Mudghahah means: Something that has been chewed by teeth, a piece of a meat of a chewable size or a small substance.⁵⁷

In this phase the embryo resembles a chewed substance but still bears the teeth marks. The embryo shows the distinct somites which resemble teeth marks in the embryo’s body.⁵⁸ The second and the third meaning of Mudghah apply to the embryo in relation to its size for it is approximately 1 centimeter in length, the size of a chewable object. Outside surface in Alaqah stage is smooth and in Mudghah. It acquires furrows, swellings and corrugated surface which gives the embryo the chewed appearance.⁵⁹

2.3.8: *I’zam*

The next stage is the I’zam which means (bones in Arabic). The embryo stays in Mudgah stage up to 6 weeks. In the beginning of seventh week, cartilaginous skeleton begins to form and eventually the embryo takes the human shape with formation of skeleton. Bone formation is sequential, pry.⁶⁰ Ossification centres appear in femur in seventh week and in sternum and the maxilla in weeks 8–9. With this stage the embryo takes the human shape and this fact has been verily described in the following Hadeeth:

‘When 42 nights have passed from the time of Nutfah (time of conception), Allah sends an angel to it, who shapes it and makes its hearing, sight, skin, muscles and bones’⁶¹. It is to be noted that before 42 days embryo cannot be distinguished from embryo of other animals, but at this stage it becomes clearly distinguishable.

2.3.9: *Laham wal kisa’ bil-Laham (clothing the bones with flesh)*

We have already seen that skeleton is formed in seventh week and the differentiation of muscles starts in the eighth week, in other words myogenesis takes place during this stage.⁶² Development of definitive muscles starts in the trunk and the foetus starts moving, and muscles take their position around the bones. The sequence of events is

⁵⁶ *ibid.*

⁵⁷ IslamGuide.Com., ‘The Quran on Human Embryonic Development:’ (2019) <<https://www.webpages.uidaho.edu/~msa/tour/ch1-1-a.htm>> accessed 23 December 2023

⁵⁸ Ahmad Husairi., ‘Embryology in The Qur'an and Hadith: Expanded Multidisciplinary Perspective’ [2019] (353) *Advances in Social Science, Education and Humanities Research* <https://www.atlantispress.com/article/125919918.pdf> accessed 23 December 2023

⁵⁹ *ibid.*

⁶⁰ Sabiha Saadat., ‘Human Embryology and the Holy Quran: An Overview’ [2009] (3)(1) *International Journal of Health Sciences* <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3068791/> accessed 24 December 2023

⁶¹ Huzairfa., *Sahih Muslim*, Kitab Al-Qadar

⁶² Islamway.net., ‘Quran on Human Embryonic Development’ (2008) <https://en.islamway.net/article/8424/quran-on-human-embryonic-development> accessed 23 December 2023



very fast as is mentioned in the Qur'an.(use of *fa*...an Arabic conjunction which means rapid sequence of events).⁶³ The Qur'an states the fact as

Then (*fa*) 'We clothed the bones with lahm, muscle, flesh)...'⁶⁴The passage also indicates that lahm stage represents the end of embryonic (*takhlik*) stage, which is followed by *Nashat* stage. The conjunction *thumma* (then) indicates a slow sequence with a time lag between the two stages.⁶⁵

2.4.0: *Al-Nashaat (The Growth)*

The word *Nashaat* in Arabic means: to initiate, grow and develop, to rise and increase. This phase begins from the ninth week of conception and is further divided in two stages.⁶⁶

3.0.0: *An-Nashaa al khalqan (Attaining the definite human form)*

This stage begins from 9 weeks until 26 weeks and during this stage there is rapid growth and development. Up to 12 weeks the growth is slow but after 12 weeks the growth is very rapid and the overall size of the foetus increases rapidly.⁶⁷ The proportional size of head, body and limbs is more balanced and lanugo hair appears on the body. The sex differentiation is possible amid movements which are very well appreciated. By the end of this stage the various organs are fully functioning, e.g: kidneys are forming urine, blood cells are formed in bone marrow and hair follicles appear.⁶⁸

3.1.0: *Al-Hadanahar –rahamiya (Uterine Incubation)*

This stage begins from 26 weeks to full term (40 weeks by dates)⁶⁹. It is a known fact that a baby can survive outside without placental or uterine support after 24 to 26 weeks that is viability; so minimum required period to survive is up to 26 weeks.⁷⁰ So, last 3 months can be considered a time for the uterus to provide additional support and a place for normal growth.

The Holy Qur'an has explained with precise definition and elegance this stage of intra uterine development and the meaning of *Nashat* applies clearly.⁷¹ The meaning to "initiate", describes the initial functioning of various organs and systems. The second

⁶³ *ibid.*

⁶⁴ Qur'an 23:14

⁶⁵ *ibid.*

⁶⁶ *ibid.*

⁶⁶Sabiha Saadat., 'Human Embryology and the Holy Quran: An Overview' [2009] (3)(1) *International journal of Health Sciences* <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3068791/> accessed 24 December 2023

⁶⁷ CleveLandClinic., 'Fetal Development' (2023) <https://my.clevelandclinic.org/health/articles/7247-fetal-development-stages-of-growth> accessed 23 December 2023

⁶⁸CleveLandClinic., (n46) 9

⁶⁹ *ibid.*

⁷⁰ WhattoExpect., '12 Weeks Pregnant' (2023) <https://www.whattoexpect.com/pregnancy/week-by-week/week-12.aspx> accessed 23 December 2023

⁷¹Sabiha Saadat., 'Human Embryology and the Holy Quran: An Overview' [2009] (3)(1) *International journal of Health Sciences* <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3068791/> accessed 24 December 2023



meaning “to grow” indicates the rapid growth and the development of various organs. The third meaning “to rise and increase” describes the very rapid and obvious increase in foetal size and weight.⁷²

Therefore, the term “nashaat” clearly and accurately describes the foetal period. Allah says in Qur’an that; ‘He makes you in the wombs of your mothers in stages, one after another, in three veils of darkness..’⁷³ This statement emphasised the facts that human beings were developed in uterus, which is against the known illustration of “foetus in a womb” drawn by Leonardo da Vinci in the 15th century but Galen in the second century AD had described the placenta and membranes in his book on the Formation of a Foetus. The three veils of darkness may be referred to: Anterior abdominal wall, the uterine wall and Amnio-chorionic membrane.⁷⁴ The interpretation seems to be the most logical from embryological point of view. With grace and elegance it has been described in the Holy Qur’an. This interpretation seems to be the most logical from an embryological point of view.

Hence, scientifically we came to know about these stages in 19th or 20th century and before that there is no detailed mention.⁷⁵ Generally Scholars held the Aristotle’s view that foetus was formed from menstrual blood and they believed in other fanciful and imaginative theories without any scientific proof.⁷⁶ Many Muslim scholars refuted those views and their denial was based on their knowledge from the Holy Qur’an. They refuted this view in 1448 AD, on the basis of these Qur’anic verses. ‘Was he not a drop of germinal fluid emitted’?⁷⁷

3.2.0: PROCESS OF FERTILIZATION

Some people think fertilization happens in the uterus, since that’s where the baby develops. However, fertilization actually occurs in the fallopian tubes.⁷⁸ Each sperm has a single goal: to meet up with the egg. To reach the target, though, a sperm cell has to go on a lengthy and strenuous journey.⁷⁹

First, it must make its way from the vagina to the cervix, and then it has to swim through the uterus to the fallopian tubes. Once there, if the sperm is the lucky one, it will penetrate the egg and fertilize it.⁸⁰ The newly fertilized egg (now called a zygote) will make its way from the fallopian tubes to the uterus with the help of small finger-like structures called fimbriae. Once there, it implants in the uterine wall and continues to develop into your baby.⁸¹

⁷² *ibid.*

⁷³ Qur’an 39:6

⁷⁴ *ibid.*

⁷⁵ Qur’an 39:6

⁷⁶ Karen Wellner., ‘A History of Embryology (1959), by Joseph Needham’ (2010) <https://embryo.asu.edu/pages/history-embryology-1959-joseph-needham> accessed 23 December 2023

⁷⁷ Qur’an 75:37

⁷⁸ Tamekia Reece., ‘What Is Fertilization?’ (2023) <https://www.whattoexpect.com/getting-pregnant/fertility/how-fertilization-happens.aspx> accessed 25 December 2023

⁷⁹ *ibid.*

⁸⁰ *ibid.*

⁸¹ Debra Sullivan., ‘Your pregnancy at week 3’ (2018) <https://www.medicalnewstoday.com/articles/296751> accessed 25 December 2023



Most of the time, implantation occurs in the uterus as it should. However, sometimes the fertilized egg implants and grows somewhere outside of the uterus⁸². This is called an ectopic pregnancy. Usually, an ectopic pregnancy occurs in a fallopian tube (which is why you may have heard of it being called a tubal pregnancy), but it may also happen in an ovary, the cervix or even the abdomen.⁸³ Since none of those areas has the right tissue or the space to accommodate a growing pregnancy, an ectopic pregnancy is not a viable pregnancy. For fertilization to happen, the timing and conditions must be just right. The fertilization process can only occur during a fairly small window within just a few days of ovulation.⁸⁴

Moreover, if a sperm does make its way to the fallopian tube, that doesn't mean it will definitely be able to fertilize the egg. Aside from various fertility-related problems that can hamper the process, the timing may be off, meaning the sperm arrived too early or too late to meet up with the egg.⁸⁵ Or the sperm may have entered the wrong fallopian tube (an egg is usually present in only one of the fallopian tubes in any given month).⁸⁶

3.3.0: FERTILITY SPAN

Fertilization doesn't occur immediately after sex. Sperm can reach the egg in about an hour, while the entire fertilization process can take several hours.⁸⁷ For about half an hour after sex, the semen coagulates in the vagina, forming a physical barrier that prevents the sperm from wandering very far in the wrong direction. This protection disappears within 30 minutes when the semen (at first gel-like) liquefies.⁸⁸

Any sperm that haven't made it up through the cervix by then are eliminated from the running by the vagina's natural acidity, which destroys any errant cells, including sperm.⁸⁹ The sperm that make it to the next step the cervical canal spend time going through biochemical changes, picking up the tail-thrashing speed that's required for them to swim their way through the uterus and fallopian tubes to find the egg⁹⁰.

The cervical canal is a much more welcoming environment, where the mucus is specially designed to transport sperm efficiently when its most fertile.⁹¹ As early as ovulation keeps approaching, the copious mucus becomes stretchy, clear and thin (that's one of the reasons why observing it is such an effective method of determining one

⁸² *ibid.*

⁸³ Sian Ferguson., '10 Things to Know About Fertilization' (2018) <https://www.healthline.com/health/where-does-fertilization-occur> accessed 25 December 2023

⁸⁴ *ibid.*

⁸⁵ CCRM Fertility., 'How Long Does it Take for Sperm to Reach the Egg and Implant – CCRM Physicians Explain' (2022) <https://www.ccrmivf.com/blog/how-long-does-it-take-for-sperm-to-fertilize-an-egg/> accessed 25 December 2023

⁸⁶ *ibid.*

⁸⁷ Bocah Indonesia., 'Fertilization Process: The Fusion of Egg and Sperm Cells' (2023) <https://bocahindonesia.com/en/fertilization-process/> accessed 25 December 2023

⁸⁸ *ibid.*

⁸⁹ Tamekia Reece., 'What Is Fertilization?' (2023) <https://www.whattoexpect.com/getting-pregnant/fertility/how-fertilization-happens.aspx> accessed 25 December 2023

⁹⁰ *ibid.*

⁹¹ CleveLanD Clinic., 'Cervical Mucus' (2023) <https://my.clevelandclinic.org/health/body/21957-cervical-mucus> accessed 25 December 2023



ovulation time).⁹² The changes happen on a microscopic level as well, as strings of molecules line up like train tracks so that sperm can hop on and ride to their destination.

The sperm that do reach the egg still have their work cut out for them. The race is on to be the first one to plow through the hard outer layer. And there's plenty of competition.⁹³ Hundreds of sperm will surround the egg during the frantic battle to the finish, all trying to penetrate the egg's membrane to reach the cytoplasm, where the sperm will then release its own genetic contribution.⁹⁴ As soon as one lucky sperm cell succeeds in penetrating the egg, the egg immediately undergoes a chemical reaction that prevents other sperm cells from following suit. Then the chromosomes carried by the sperm and egg come together, and the egg is officially fertilized.⁹⁵

Sperm can survive inside the female reproductive tract for about 72 hours. And, in some cases, the sperm can live for up to five days. But the lifespan of an egg is much shorter. The egg lives for only 12 to 24 hours after ovulation.⁹⁶ If sperm aren't hanging around by the time the egg makes it to the fallopian tube (or if they don't reach the destination shortly after the egg arrives), the body reabsorbs the egg and the window of opportunity for conception that month closes.⁹⁷

Furthermore, the road to fertilization is a bumpy one, with plenty of twists and turns.⁹⁸ It takes the right conditions and perfect timing for the egg and sperm to meet up and produce a baby which marks amazing journey to motherhood.⁹⁹

4.0.0: DISCUSSION ON EVOLVEMENT OF IN VITRO FERTILIZATION (IVF) UNDER ISLAMIC LAW

The evolution of In Vitro Fertilization (IVF) within the framework of Islamic law represents a dynamic intersection of modern medical advancements and traditional ethical considerations.¹⁰⁰ In vitro fertilization, as a medical procedure allowing the conception of a child outside the human body, has posed unique challenges and considerations for Islamic scholars, bioethicists, and practitioners¹⁰¹. This chapter

⁹² Karen Wellner., 'A History of Embryology (1959), by Joseph Needham' (2010) <https://embryo.asu.edu/pages/history-embryology-1959-joseph-needham> accessed 23 December 2023

⁹³ Tamekia Reece., (n69) 13

⁹⁴ Khan Academy., 'Egg meets sperm' (2017) <https://www.khanacademy.org/test-prep/mcat/cells/embryology/a/egg-meets-sperm> accessed 25 December 2023

⁹⁵ *ibid.*

⁹⁶ GiveLegacy., 'How long does sperm last?' (2013) <https://www.givelegacy.com/resources/how-long-does-sperm-last/#:~:text=Studies%20show%20that%20the%20average,last%20up%20to%20five%20days>. Accessed 25 December 2023

⁹⁷ Cara Sumner., 'How long do sperm live?' (2023) <https://www.naturalcycles.com/cyclematters/the-truth-about-sperm-survival-how-long-do-sperm-live> accessed 25 December 2023

⁹⁸ *ibid.*

⁹⁹ NovaivfFertility., 'How Long Does It Take for a Sperm to Fertilize an Egg?' (2023) <https://www.novaivffertility.com/fertility-help/how-long-does-it-take-for-a-sperm-to-fertilize-an-egg> accessed 25 December 2023

¹⁰⁰ CDCP., 'Assisted reproductive technology Success Rate' (2004) <https://ftp.cdc.gov/pub/publications/art/2004art508.pdf> accessed 1 January 2024

¹⁰⁰ Meaghan J. and Manvinder S., 'Assisted Reproductive Technology (ART) Techniques' (2013) <https://www.ncbi.nlm.nih.gov/books/NBK576409/> accessed 1 January 2024

¹⁰¹ *ibid.*



explores the historical trajectory and contemporary implications of IVF under Islamic law, emphasizing the ongoing dialogue between religious principles and scientific progress. The chapter further examine the conceptual and contextual analysis of in vitro fertilization, meaning of in vitro fertilization, historical antecedent of in vitro fertilization, in vitro fertilization and medical ethics, benefits of in vitro fertilization, disadvantages of in vitro fertilization, religious involved in in-vitro fertilization, Islamic law perspective on in vitro fertilization, arguments against in vitro fertilization and conceptual and contextual analysis of in vitro fertilization, amongst others.

5.0.0: CONCEPTUAL AND CONTEXTUAL ANALYSIS OF IN VITRO FERTILIZATION

In Vitro Fertilization can be said to be a medical intervention with its foundation in its success in the veterinary world. It is a concept that can rather be described than defined.¹⁰² This is due to the rigorous steps and procedures involved in the process itself.¹⁰³

The term 'in-vitro' is of Latin root, meaning in glass due to the fact that early biological experiments which involved cultivation of tissues outside the organisms (from which they were brought) were carried out in glass containers such as Petri dishes, beakers and test tubes.¹⁰⁴ Put simply, in the technical sense, the word In vitro means outside the body and Fertilization means the attachment of the sperm to the egg.¹⁰⁵ Thus, In vitro fertilization is a process where the mature egg is surgically removed from the ovary and then fertilized with sperm in the laboratory¹⁰⁶. After the fertilization, the embryo is thereafter transferred back to the uterus. This initial fertilization is done outside the womb in a test-tube hence the reason why a baby birthed from IVF procedure is referred to as a test-tube baby¹⁰⁷. However, of all the forms of assisted reproductive technology, IVF is the medium mostly used to help women conceive as a result of its success rates when the natural fertilization fails or infertility is discovered.¹⁰⁸ Infertility is the inability of a couple to become pregnant after a year of unprotected sexual intercourse. Some of the reasons for infertility in a woman that has been investigated are damaged or blocked fallopian tubes, hormonal imbalance, or endometriosis in the woman while infertility is caused in a man where he has a low

¹⁰²Mutiati A.A., 'In Vitro Fertilisation (Ivf) And The Islamic Law Perspective: An Analysis' (2018) https://www.academia.edu/33321675/IN_VITRO_FERTILISATION_IVF_AND_THE_ISLAMIC_LAW_PERSPECTIVE_AN_ANALYSIS_docx accessed 23 January 2024

¹⁰³ibid.

¹⁰⁴ Slideshare.net., 'In Vitro Fertilisation' (2017) <https://www.slideshare.net/sathishsak/in-vitro-fertilisation> accessed 8 June, 2024

¹⁰⁵ibid.

¹⁰⁶Supramaniam P.R and Mittal., 'Assisted Reproductive Technology: Where did the Journey Begin, and where are we Today – A 40-year History' (2018) <https://irispublishers.com/wjgwh/fulltext/assisted-reproductive-technology-where-did-the-journey-begin-and-where-are-we-today-a-40-year-history.ID.000519.php> accessed 1 January 2024

¹⁰⁷ibid.

¹⁰⁸ HFEA., 'Multiple births in fertility treatment 2019' (2019) <https://www.hfea.gov.uk/about-us/publications/research-and-data/multiple-births-in-fertility-treatment-2019/> accessed 2 January 2024

¹⁰⁸ Ernesto B. and Michel D. and Peter H., 'The Future of Cryopreservation in Assisted Reproductive Technologies' (2020) <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7044122/> accessed 2 January 2024



sperm count or poor-quality sperm.¹⁰⁹ Another prevailing cause of infertility in the developing world is Sexually transmitted diseases (STDs) and Sexually Transmitted Infections (STIs).¹¹⁰

This concept is an alternative to the natural or unassisted conception which involves the fertilization of an egg and sperm inside a woman's body.¹¹¹ Upon the fertilization of the egg, it attaches to the lining of the womb and continues to grow leading to the birth of a baby on its due date. It is noteworthy to state that the actual import of IVF is to increase the chances of conception of infertile couples symbolising a head way in procreation.¹¹² Thereby, in a situation whereby a woman has healthy eggs but damaged tubes or a man has a weak sperm quality to fertilize the egg or get to the egg, IVF may be an option of redress or a cure to the 'disease' where other means has failed.¹¹³ The creation of embryos in the uterus of a female occurs after a sporadic chain of events involving the interaction of sperm with egg.¹¹⁴ This normal process of fertilization will be carried out albeit through IVF where the physician chooses the sperm to interact with the egg and the unification of the cells which should normally occur in the fallopian tubes will instead be carried out in a laboratory. More than two million IVF children have been born to date, and continued awareness of this procedure will widen its appeal and applicability.¹¹⁵

The initial discovery of IVF was to treat women with damaged or absent fallopian tubes but its increased success rates has been extended to other causes of infertility such as tumours, cysts, and unexplained infertility.¹¹⁶ An infertile couple can have a biologically or non-biologically related child through the IVF process thus broadening the scope of sexual reproduction¹¹⁷.

6.0.0: IN VITRO FERTILIZATION AND MEDICAL ETHICS

Edwards knew ethical dilemmas would arise from the introduction of IVF as a method for reproduction; however, he didn't shy away from the ethical issues.¹¹⁸ Medicine, in Edward's opinion, differed from science because they had different objectives.

¹⁰⁹ibid.

¹¹⁰ibid.

¹¹¹ BCcampus., 'Fertilization and Early Embryonic Development' (2023) <https://openextbc.ca/biology/chapter/24-6-fertilization-and-early-embryonic-development/> accessed 24 December 2023

¹¹²ibid.

¹¹³Supramaniam P.R and Mittal., 'Assisted Reproductive Technology: Where did the Journey Begin, and where are we Today – A 40-year History' (2018) <https://irispublishers.com/wjgwh/fulltext/assisted-reproductive-technology-where-did-the-journey-begin-and-where-are-we-today-a-40-year-history.ID.000519.php> accessed 1 January 2024

¹¹⁴ ibid.

¹¹⁵Supramaniam P.R and Mittal., 'Assisted Reproductive Technology: Where did the Journey Begin, and where are we Today – A 40-year History' (2018) <https://irispublishers.com/wjgwh/fulltext/assisted-reproductive-technology-where-did-the-journey-begin-and-where-are-we-today-a-40-year-history.ID.000519.php> accessed 1 January 2024

¹¹⁶ibid.

¹¹⁷ibid.

¹¹⁸Stephanie Sariles., 'Christian and Islamic Perspectives on the Ethical Dilemma of In Vitro Fertilization (IVF)' (2020) <https://digitalcommons.acu.edu/cgi/viewcontent.cgi?article=1054&context=dialogue> accessed 23 January 2024



Medicine is driven by the daily need to treat patients, the ability to assess different techniques, and the opportunity to prescribe expensive medicines.¹¹⁹ Edward's interest in discovering the solution to infertility began with developing relationships with physicians at the National Institute of Medical Research in London, who spoke of the numerous infertile patients that would benefit from his reproductive research that he had been conducting on animal embryos.¹²⁰ As Edwards and his research team continued to work on reproductive technologies through animal embryos, they believed IVF was a significant clinical imperative to develop, which would allow them to help millions.

across the world, who suffered from infertility. His ethical stance on reproductive technologies was adopted through the clinical imperative and the inalienable rights of couples to have their own child, as long as they did no harm.⁴ "Do no harm" is derived from the Hippocratic Oath, which is recited by physicians once they have completed all their boards and examinations.¹²¹ The oath states, I will use regimens for the benefit of the ill in accordance with my ability and my judgment, but from what is to their harm or injustice, I will keep them.¹²² In order to understand this statement, it has to be viewed in two parts. Injustice speaks to the physician's duty to ensure that the patient will not be harmed by moral transgressions, while harm speaks to the physician's duty to heal the sick.¹²³ Physicians have adopted Edward's ethical stance, in which, if the infertile patient consent to the treatment and no harm is done then IVF can be used as a method to heal infertility.¹²⁴ Edwards developed IVF in order to cure infertility among the world's population, which was considered fully legitimate by the ethical committee in the UK known as the House of Lords.¹²⁵ However, Edwards understood that when in-vitro fertilization would be presented as a cure for infertility, it would be viewed as unacceptable to several people.¹²⁶

6.0.0: CONCLUSION

The holy Qur'an contains comprehensive description of human development; no such distinct and complete record of human development, such as classification, terminology and description existed before.¹²⁷ This knowledge came to us in an era when there was

¹¹⁹ibid.

¹²⁰ Palermo G and others 'Pregnancies after intracytoplasmic injection of single spermatozoon into an oocyte' (1992) <https://pubmed.ncbi.nlm.nih.gov/1351601/> accessed 8 June, 2024

¹²¹ibid.

¹²²ibid.

¹²³ Jacob P.O and Michael Y., 'Patient Rights and Ethics' (2024) <https://www.ncbi.nlm.nih.gov/books/NBK538279/> accessed 8 June, 2024

¹²⁴ibid.

¹²⁵Sariles S., 'Christian and Islamic Perspectives on the Ethical Dilemma of In Vitro Fertilization (IVF)' (2017) <https://digitalcommons.acu.edu/cgi/viewcontent.cgi?article=1054&context=dialogue> accessed 8 June, 2024

¹²⁶ibid.

¹²⁷Sabiha Saadat., 'Human Embryology and the Holy Quran: An Overview' [2009] (3)(1) *International journal of Health Sciences* <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3068791/> accessed 24 December 2023



no microscope, no slides, no fixatives or any other gadgets and above all this description is narrated by a person who was illiterate! Who would reveal this information to him except the CREATOR Himself!¹²⁸In fact Allah verily says: ‘Soon we will show them our signs in the (furthest) regions (of the earth), and in their own selves, until it becomes manifest to them that this is the truth. Is it not enough that your Lord does witness all things’.¹²⁹

¹²⁸ *ibid.*

¹²⁹ Qur’an 41:53