

A COMPARATIVE STUDY OF HUMAN EXPERIMENTATION FROM THE CHRISTIAN AND ISLAMIC PERSPECTIVE

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ABSTRACT

Experimentation or research involving humans as subjects have been in existence throughout the years. This research conducted with human beings as subjects has brought about advancements in the knowledge of medicine (treatment of deadly diseases and all manner of psychological ailment as well as an overall understanding of the human anatomy). However, due to the nature of some horrendous experimentation such as those conducted by German Nazi, the Tuskegee Syphilis study and the Guatemala Syphilis experiments, ethicists are of the view that these experiments abuse the utilitarian motive of satisfying the greatest good. All these opinions have shaped people's views on ethics of research resulting in ethical guidelines such as the Declaration of Helsinki and the Nuremberg Code to serve as a guide when researches are conducted on human beings. This paper is purposed to highlight the views of both the Christian and Islamic religions on the subject of human experimentation so as to enable individuals understand the bioethical views shared on this biological technology.

INTRODUCTION

Human experimentation has been around ever since the dawn of humankind. Chin and Lee² assert that whenever a person tested something on his/her own body or on someone else's body; it is a kind of experimentation or research. McNeill³, therefore, defines human experimentation as an experimentation which is conducted on human beings to test an idea or hypothesis. In this regards, the human beings on whom the experiments are conducted are termed as 'participants' or what is commonly referred to as 'subjects'.

Even though the ethical justification of using humans as subjects of experiments rest on the assumption that it benefits the whole society since these experiments helps in discovering new ways or solutions in health care, it does not serve the interests of the 'subjects' under experiment. Most of these people are often pressurized into being the subjects of research with or without their consent. Through these researches many people have died in order to add to the knowledge and medical interventions currently in existence. These experiments at most times did not even have a clear purpose and was meant to just see what happens when such an experiment was conducted.

Though these kind of experiments were either uncommon or non-existence in the primeval world, historical record does contain some evidence of using slaves, criminals or even patients for this purpose

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² R. Chin and B. Y. Lee, *Principles and Practice of Clinical Trial Medicine*, (London: Academic Press, 2008).

³ P. M. McNeill, *The Ethics and Politics of Human Experimentation*, (Cambridge: University Press, 1993); D. B. Resnik, "Social Benefits of Human Subjects' Research". *Journal of Clinical Research Best Practices*, 4(11): 2008, 1.

with which they were referred to as “human guinea pig” a term coined by George Bernard Shaw⁴. The disclosure of the excruciating price paid by humans when they are used as subjects for experiments was due to the medical experiments conducted by Nazi physicians’ during the second world war, the Tuskegee Syphilis Study, the Eugenic Movement and others brought about the promulgation of codes and regulations for the protection of humans in any medical experimentation.⁵ Notwithstanding, Shapiro believes that research using human subjects will continue to play an important role as part of a great humanitarian effort to understand ourselves better and to relieve distress and disease.⁶ Nevertheless, using human beings as subjects in medical experiments-or any type of research-is a special opportunity which carries with it special ethical responsibilities.

HISTORICAL OVERVIEW OF HUMAN EXPERIMENTATION

Human experimentation is carried out on live human subjects for the purpose of scientific and medical discovery. This can also be known as human subject research. Humans have long been used as subjects for a variety of experiments; however, the most publicized are those that are medical in nature. Experimentation done on humans took place at least as early as the fourth century B.C. and it was initially practiced to learn about anatomy and the internal structure of the human body. Over time, human experimentation became more focused on human physiological and psychological reactions to all kinds of external stimuli, such as diseases, drugs, extreme conditions, injuries and pain, space flight and biological weapons.

According to Kushe and Singer⁷, in the late 18th and 19th centuries, researchers deliberately infected human beings with samples of blood and other materials taken from the sick patients to test their theories without any apparent regard for the harm they inflicted. For instance, in correcting vesico-vaginal fistula, slave women were operated on up to thirty times to practice an operation. There were other instances such as the Eugenic Movement which was based on the idea that only genetically fit individuals should have the right to reproduce based on the principles of evolution⁸; the Monster Study in 1939 which orphans were experimented upon to determine if negative speech therapy would induce stutters⁹; the Milgram Obedience experiment between the years of 1960-1964 and the Stanford Prison Experiment.

In 1945, an important step in the history of human experimentation was taken. The Nuremberg Trials horrified the whole world revealing the extent to which Nazi physicians had tortured, mutilated and killed human beings in the name of medical science and the exigencies of war.¹⁰ This step led to the enactment of the Nuremberg code which was composed by bioscientist in reaction to the Nazi Horror and the code recommended an unconditional commitment to informed consent on the part of the physicians in the biomedical research on human subjects. The 1946 declaration of Helsinki also went further to explain

⁴ See: H. T. Shapiro, “Ethical Considerations in Research on Human Subjects: A Time for Change Again”. *Speech presented at the Sixth Annual Raymond Waggoner Lecture*, (Ann Arbor, The University of Michigan, 2001).

⁵ J. Katz, “Human Experimentation and Human Rights”. *St. Louis University Law Journal*, 38(7): 1993, 7-54; T. J. Cleophas, *Human Experimentation: Methodological Issues Fundamental to Clinical Trials*, (Kluwer: Academic Publishers, 1999).

⁶ H. T. Shapiro, “Ethical Considerations in Research on Human Subjects: A Time for Change Again”, (The University of Michigan, 2001).

⁷ Helga Kuhse and Peter Singer, (ed) *A Companion to Bioethics*, (Maldem: Blackwell Publishing Ltd, 2001), 39; G. E. McCuen, (ed.) *Human Experimentation: When Research Is Evil*, (Hudson: Gem Publications, 1998).

⁸ P. Gray, “Cursed by Eugenics”. *Time*, 153(1):1999, 84-85.

⁹ R. Goldfarb, *Ethics: A case study from Fluency*, (New York: Plural Publishing, 2005).

¹⁰ W. Bynum, “Reflections on the history of Human Experimentation”. In *The Use of Human Beings in Research* (Netherlands: Springer, 1988), 29-46.

the Nuremberg Codes on human subject research.¹¹ The Belmont Report created in 1979 as well created ethical principles and guidelines for the protection of human subjects for research. From these codes, ethical principles such as voluntary and informed consent, respect for persons, beneficence, justice, non-maleficence, confidentiality, etc guided research pertaining to human subjects.

RELIGION AND HUMAN EXPERIMENTATION

In human research, there is often a tension between the desire to benefit humanity and the need to help and protect those who suffer illness now. This may result in sacrificing the present sufferer, for the sake of those who may come in the future. It is wrong to inflict pain or cause suffering to a person at the benefit of the other. Although new and more effective treatments and an increase in life span can occur, it raises a lot of ethical concern. People can be abused and dehumanized if not taken care of properly and there may also be some side effects incurred on the test subject which may create new diseases as well.

Often, religion is perceived as an enemy of science and regarding matters of life, religion tends to have a position that is geared towards. There are diverse religious accounts which asserts to the fact that human beings came into being due to the handiwork of a Supreme Being. Thus, life (human beings) from the religious point of view is a sacred gift from God and it is only God who decides when it starts and ends so it must be treated with utmost respect. Due to this belief held by most religions, there are some limitations on some of the researches that religious adherents will heed to. Because of the belief in the creation of human beings in the image and likeness of God, every human being at every stage of his or her life is accorded with respect from fetuses, human tissues and even frozen embryos.¹²

As already mentioned the history of research on human subjects has recorded many instances of serious violations of human rights and no regards to morality or ethical consideration although the reason given by researchers is that they seek to extend human knowledge and enhance human welfare. Regardless of this position, most religions argue that experimenting on humans is intrinsically immoral and prominent themes such as human dignity and sacredness come to bear in these religious arguments. From the Islamic and Christian perspective, the creation of human beings in the image and likeness of God makes humans sacred and dignified beings hence they must not be subjected to in-humane treatment or anything that will interfere with human life. So, to endanger a life possibly is disrespectful to God.

Christian Perspective on Human Experimentation

In Christianity, ethical duties are grounded in the commands of God and the bible is used as the authoritative basis of God's commands. Thus, Christianity or Christians view on scientific discoveries and especially the origin of mankind (human beings) are far different from that of natural science. With reference to the creation of mankind in the image and likeness of God in the scriptures, the distinctiveness of humans is made clear. This is explained in Genesis chapter 1, verses 27-28 which describes how God created human beings both, male and female in his image and likeness:

“So God created mankind in his own image, in the image of God he created them; male and female he created them. God blessed them and said to them, “Be fruitful and increase in number; fill the earth and subdue it. Rule over the fish in the sea and the birds in the sky and over every living creature that moves on the ground.” (New International Version)

From this biblical perspective, human experimentation raises a number of religious and ethical dilemmas. Christians are of the view that, God owns all that He created including humans, as result no one

¹¹ T. J. Cleophas, *Human Experimentation: Methodological Issues Fundamental to Clinical Trials*. (Kluwer: Academic Publishers, 1999), 100.

¹² B.J. Rumble, *The Use of Human Subjects in Research at Adventist Colleges and Universities: Suggested Guidelines*. (1994). (http://ict.aiias.edu/vol_14/014cc_341360.pdf/ 8/23/2017).

can lay ownership claims to any humans, human body parts or components whatsoever. Thus God has absolute rights to determine its utilization and its disposal.

Another view held by most Christian is the value and quality of life argument. The value and sanctity of human life is deeply rooted in Christian ethics. Since God created man in His own image (*Imago Dei*), an enormous value has been placed on human life and this has become a central moral concern in medicine. Genesis 9:6 states:

“If anyone takes a human life, that person's life will also be taken by human hands. For God made human beings in his own image”.

(New Living Translation)

Thus, every human being is unique and his life is entirely an ordination, a loan, an unrepeatable opportunity to praise God and a stewardship.¹³ The foundation of human research has always rested on the notion of “doing the greatest good”. This desire to benefit humanity at the expense of protecting those who suffer now has brought about a great tension. There is no justification for sacrificing a present sufferer for the sake of those who have to come in the future.

There is an assertion in Christian ethics that no human being irrespective of race or color, how good or poorly talented he or she is, developed or archaic, should be used merely as a means to achieve some research goal. Whatever responsibility human beings have to society, individuals are of supreme value, and society exists only to promote the good of its members.

Also, no one should force another into performing any action. Each human being has been given autonomy of decision-making because God has placed a high value on freedom of choice. Since human beings are unique, created in the image of God and possess an infinite price, they have the will to think and make right choices. Galatians 5:13 puts it as follows;

“Brethren, ye have been called unto liberty; only use not liberty for an occasion to the flesh, but by love serve one another” (King James Version).

As a result, researchers must also be influenced by this principle so that they can make a good choice in the topics and investigations they want undertake.¹⁴

The teachings and admonitions of Jesus Christ give us the guidelines in treating people in daily life and in research. In Luke 10:25-37, Jesus explained the need to give others the degree of respect that we expect from them. Jesus' admonition to “love your neighbor as yourself” ties together both respect for persons and one's obligation to the larger community. This is also to prevent the tendency of exploiting one another. So for a researcher to undertake any sort of research or investigation, the needs of the participant (subject) should precede that of the researcher.

Therefore, from the Christian viewpoint, whenever a research is about to be undertaken, these principles should serve as a guide in every stage of the experimentation or research. Whether in choosing the subjects, informing the participants about the benefit and risk involved, guarding the privacy, etc. the sanctity of human life, the value and quality of life, choice, respect and love for neighbor should always guide the decisions that are to be taken. Christianity indeed respects and supports scientific research when it is having a genuine human orientation and there is the avoidance of any destruction of human being.

Islamic Perspective on Human Experimentation

Like all other Abrahamic and non Abrahamic religions, the most important religious value that Islam stresses is the inviolability of life. The body, just like the soul is a “gift” from God hence absolute ownership of the body cannot be claimed by any human being - human beings are just stewards. That is why most religions are against abortion, suicide, euthanasia and any other acts pertaining to human life.

¹³ P. Ramsey, “The morality of abortion”. In J. Rachels (Ed.), *Moral Problems: A Collection of Philosophical Essays*, (New York: Harper Row, 1971), 11.

¹⁴ B. J. Rumble, *The Use of Human Subjects in Research at Adventist Colleges and Universities: Suggested Guidelines*. (1994). (http://ict.aiias.edu/vol_14/014cc_341360.pdf/ 8/23/2017).

Also, unforeseen applications of bio-technology have posed unexpected ethical challenges to traditional views of humans and their role in the natural and divine order. According to Sachedina¹⁵, there is a purpose for creation and human beings have been given the capacity to understand right from wrong and to promote the good of the larger community which they are part.

In Islam, there is no clear stance on using humans as subjects for experiments and the problems of human experimentation is basically perceived as a purely legal issue.¹⁶ However, there is rather an emphasis on seeking and using knowledge in Islam. As a result, researches with the aim of preventing and curing diseases are encouraged. The prophetic tradition sees the physician as an agent of God for healing and also to further the noble ends of medical sciences. This is seen in the rich contributions of Islamic philosophers and physicians to the history of medicine and medical ethics with well appreciated scholars such as Allah Ibn Sina (Avicenna)¹⁷ who is also known as father of modern medicine.

In Muslim biomedical research, the principle of public good is often invoked to justify medical experimentation that seeks to promote public health. Human experimentation is also based on the idea of promoting the greatest good but the peculiar feature of human experimentation is that its ends are determined by human subjects themselves. Sachedina¹⁸ stresses that; it is difficult to separate the subject and the object of experimentation when the investigation deals with human beings. Thus, no amount of medical education or expertise can by itself provide the ethical criteria necessary for rulings that may involve life - and-death decisions. All the same, the public good can overshadow the concerns of a pitifully uninformed individual who might be recruited for a study and experimental trial for the greater good of others in a manner that runs roughshod over his basic God-given human dignity.

Afifi¹⁹ espouses that the ethical guidelines in Islam are derived from the purposes and principles of the Shari'a (Islamic law) and medical principles in Islam rests on these basic principal tenets namely; the principle of *Qasd* (intention); principle of *Yaqin* (certainty), the principle of *Darar* (injury); the principle of *Darura* (necessity) and the principle of *Urf* (custom/standard of care).²⁰ In addition, all medical researches that are conducted should be done per these reasons stated in the Shari'a which includes the preservation of religion and morality; preservation of life and health; preservation of progeny (curing infertility); preservation of intellect and the preservation of wealth. However, if the purpose of the research is ill-conceived, doubtful or uncertain, highly risky, does not have any laid down precedence, then that research is morally prohibited.²¹

In support of the ethical principles espoused by Beauchamp and Childress²², Islam for that matter expresses that, before a research on human subjects is conducted these ethical principles should be adhered to. They are, respect for persons (respect for autonomy, protection of persons with impaired or diminished autonomy); beneficence/maleficance; justice. As regards to respect for persons, the autonomy of the persons (consent) which includes those who can make choices and take decisions on their own and those who are dependent or vulnerable should be treated with respect and afforded security against harm or abuse. The respect for autonomy is stressed on in the Qur'an even in relation to one's belief:

¹⁵ A. Sachedina, *Islam and the Challenge of Human Rights* (Oxford: University Press, 2009).

¹⁶ R. Y. Afifi, "Biomedical Research Ethics: An Islamic View Part II". *International Journal of Surgery* 5(6): 2007, 381-383.

¹⁷ <http://www.nairaland.com/2333943/avicenna-ibn-sina-father-modern>: 12/9/2017).

¹⁸ A. Sachedina, *Islam and the Challenge of Human Rights* (Oxford: University Press, 2009).

¹⁹ R. Y. Afifi, "Biomedical Research Ethics: An Islamic View Part II". *International Journal of Surgery* 5(6): 2007, 381-383.

²⁰ Mustafa, Y. "Islam and the Four Principles of Medical Ethics". *Journal of Medical Ethics*, 40(7): 2013, 479-483.

²¹ O. H. Kasule, "Ethics and Etiquette of Human Research". *The international Scientific Convention (organized by the Jordan Society for Islamic Medical Studies, the Jordan Medical Association and the Federation of Islamic Medical Association) (Amman, Jordan 15-17 of July, 2004)*.

²² J. F. Childress and T. L. Beauchamp, *Principles of Biomedical Ethics*, (Oxford: University Press, 2001).

“Let there be no compulsion in religion: Truth stands out clear from error: Whoever rejects Evil and believes in God hath grasped the most trustworthy handhold that never breaks. And God heareth and knoweth all things.” (Al Baqarah (2): 256)

Islam urges that whatever documentation that is done on consent should be transparent. Because there is the belief that humans are temporary custodians of life since life is given by Allah. Hence, the researcher and the subject for experiment are accountable to God for any decision made that goes contrary to the dictates of Allah stipulated in Qur’an.²³ Furthermore, as stated in *Surat Yusuf*, the subject's confidentiality should be protected:

“He said, "O my son, do not relate your vision to your brothers or they will contrive against you a plan. Indeed, Satan, to man, is a manifest enemy..." (Yusuf (12): 5)

The principle of beneficence pervades almost every layer of Islamic thought. Islam recommends the adherence to the principle of beneficence which obligates medical practitioners to maximize benefits and minimize harms. Islam further encourages the removal of misfortune, distress or hardship from a fellow human and the fulfillment of one's needs. Therefore, whenever there is a research involving humans as subjects, the likelihood of risks in the experimentation should be reasonable in the light of expected benefits. There should also be the avoidance of deliberate infliction of harm on the subjects (non- maleficence) but rather a safeguard on their welfare.

Related to the principle of beneficence is non-maleficence which is the concept of avoiding the risk of harming others. As quoted by Prophet Muhammad (PBUH) in the Qur’an:

“Those who cause hurt to believing men and to believing women have invited upon themselves a calumny and a manifest sin (Al-Ahzab (33:58).”

Whenever, there is a medical experiment or a physician acts, there is the probability of a harmful side effect, so this principle aids in balancing the good and bad so that the best interest of the patient will be met. This concept is very essential in Islam and there is an insistence on the removal of harm at all cost. So, in Islam, no harm shall be inflicted or reciprocated.

The principle of Justice is also a central principle in Islamic teaching and as such, the notion of justice has been stressed innumerable times in the Qur’an and in the *Hadith* (sayings of the Prophet). Justice in Islam is the basic of ruling between people and relations in different aspects of life as stated. The Ayat of the Qur’an states:

“O ye who believe! Stand out firmly for God, as witnesses to fair dealing, and let not the hatred of others to you make you swerve to wrong and depart from justice. Be just: that is next to piety: and fear God. For God is well-acquainted with all that ye do (Al Ma idah (5): 8)”.

“God commands justice, the doing of good, and liberality to kith and kin, and He forbids all shameful deeds, and injustice and rebellion: He instructs you, that ye may receive admonition (Al Nahl (16): 90)”.

Afif²⁴ explains that with regards to the ethics of research involving human subjects, the principle refers primarily to *distributive justice*, which requires the equitable distribution of both the burdens and the benefits of participation in research. Other forms of justice include: the respect of people's rights (right based justice), legal justice (*respect of morally acceptable laws*) and justice as reciprocity (post-trial benefit).

These principles as explained above serve as guidelines and safeguards for the protection of human subjects. Hence, in human research experimentation, if the purpose of the proposed research is ill

²³ R. Y. Afifi, “Biomedical Research Ethics: An Islamic View Part II”. *International Journal of Surgery* 5(6): 2007, 381-383; A. Siddiqui, “Ethics in Islam: Key Concepts and Contemporary Challenges”. *Journal of Moral Education*, 26(4): 1997, 423–431.

²⁴ R. Y. Afifi, “Biomedical Research Ethics: An Islamic View Part II”. *International Journal of Surgery* 5(6): 2007, 381-383;

intentioned, ill-conceived, or the method used in determining the objective is scientifically invalid, then the research project is not ethically acceptable. Also, there must be some experimental evidence of low efficacy of the current standard of care and treatment or potential benefits of the proposed new treatment before an experiment is authorized. Since human experimentation is associated with potential hazards and risks. These risks have to be balanced against the harm caused by the disease and the potential benefit of the proposed new treatment (risk/benefit ratio).

DISCUSSION

There continues to be diverse contributions by Christianity and Islam concerning medical related issues which have the propensity to influence and change the lives of their adherents. The beliefs of these religions in a way influence their viewpoints on scientific or medical related issues.

Primarily, Christianity and Islam's understanding of ethical issues in relation to medical practices is derived from their sacred texts and other sources. In Christianity, the bible does not have explicit directions towards bioethical dilemmas. However, scriptures can be analyzed in order to determine what God would prefer us to do base on moral principles. Similarly, Islamic decisions on whatever issue relating to medical practices are derived primarily from the Islamic law (Shari'a) which is also sourced principally from the Qur'an and other sources such as the *Hadiths* of the Prophet, scholastic theology (*Kalam*) and jurisprudential understanding (*Fiqh*).

In relation to human experimentation, the primary agent of this continuous process of the acrimonious debate is, unmistakably, the human person. With regards to researches involving humans as subject, both religions (Islam and Christianity) attest to the fact that God or Allah is the Creator, the Ruler and the Lord of the universe. Thus, God is the giver and sole owner of life. Humans are just stewards who are charged with taking utmost care of themselves. The Qur'an in *Surat As-Sajdah*, (Verses 7-9), describes the origin of man as follows:

“Who perfected everything which He created and began the creation of man from clay. Then He made his posterity out of the extract of a liquid disdained. Then He proportioned him and breathed into him from His [created] soul and made for you hearing and vision and hearts; little are you grateful.” (Sahih International)

The bible in Genesis 2vrs 7 similarly states that:

“Then the LORD God formed a man from the dust of the ground and breathed into his nostrils the breath of life, and the man became a living being” (New International Version).

Due to the dignified and sacred nature of man, both religions believe that there shall be no subjection of humans to any crude method of experimentation.

It could be assessed that both religion support the ethical principles in medical research as espoused by Beauchamp and Childress. The principles of respect for autonomy, beneficence, non-maleficence and justice are all themes found in the doctrines of both Islam and Christianity.

Both religions are opined that, whenever a research is about to be undertaken, these principles should serve as a guide in every stage of the experimentation or research. As explained above,

Islam encourages the use of knowledge and the Prophet (PBUH) emphasize on using this knowledge to serve the good of the society. Hence in Islam, there is no consideration for knowledge that provides no utility. However, Christianity holds the view that no one should be used merely as a means to achieve some research goal. So, regardless of whatever responsibility human beings have to society, individuals are of supreme value.

Finally, the assertion regarding human experimentation from Christianity and Islam can be made that, both support biomedical research as it has indeed been instrumental in the progress of knowledge in

medicine. This was affirmed by Pope John Paul II²⁵ when he pointed out in an address in the 9th *General Assembly of the Pontifical Academy for Life* that “it is a recognized fact that improvements in the medical treatment of disease primarily depend on progress in research”. Despite this, the possibility of intervention on human beings must be directed to defined ends and put in dialogue with the world of values.

IMPLICATION OF THE STUDY

There have been tremendous breakthroughs in the field of science due to the development of bio-medicine. New drugs, technologies and remedies to diseases have been discovered due to such exploration made by scientists. However, the views expressed by religion are based on the fact that experimentation done on humans seems to be destined to bring about series of adverse effects. This article as a result provides insights into the views held by the two most popular religions in the world (Christianity and Islam). Based on these views expressed by these religions, the paper establishes the fact that, ethical implications involving experimentation with human beings should be taken into consideration before any research is pursued. When this is done, the positive and negative effects posed by this research will be considered thoroughly and the persons can either accept or reject this form of scientific research.

CONCLUSION

Indeed, there has been an improvement in the life of the human person due to scientific progress in many sectors. However, doubts of an ethical and religious nature have arisen and created problems particularly with experimental sciences. Human experimentation is basically aimed at testing the effectiveness of a chemical or technique to help develop effective treatments for individuals. Research should treat individuals ethically and should in actual fact serve the true good of the human person. So, however, willing a human is to be used as a subject for a research, the dignity as a person, the quality of his or her life and integrity must be respected fully. Thus, the moral sense of what is right or wrong for a person should be considered than on a technical data as perceived from the Christian and Islamic viewpoints.

BIBLIOGRAPHY

- Afifi, R. Y. “Biomedical Research Ethics: An Islamic View Part II”. *International Journal of Surgery* 5(6): 2007.
- Bynum, W. “Reflections on the history of Human Experimentation”. In *The Use of Human Beings in Research*, Netherlands: Springer, 1988.
- Childress J. F. and Beauchamp, T. L. *Principles of Biomedical Ethics*, Oxford: University Press, 2001.
- Chin, R., and Lee, B. Y. *Principles and Practice of Clinical Trial Medicine*, London: Academic Press, 2008.
- Cleophas, T. J. *Human Experimentation: Methodological Issues Fundamental to Clinical Trials*, Kluwer: Academic Publishers, 1999.
- Duncan, V. “Human Experiments”. *Christian Medical Fellowship*, (2001), accessed March 23,2017, [url:http://admin.cmf.org.uk/pdf/cmffiles/15_human_experiments.pdf](http://admin.cmf.org.uk/pdf/cmffiles/15_human_experiments.pdf)
- Goldfarb, R., *Ethics: A case study from Fluency*, New York: Plural Publishing, 2005.
- Gray, P. “Cursed by Eugenics”. *Time*, 153(1):1999, accessed December 9,2017, [url: http://www.nairaland.com/2333943/avicenna-ibn-sina-father-modern](http://www.nairaland.com/2333943/avicenna-ibn-sina-father-modern)
- Kasule, O. H. “Ethics and Etiquette of Human Research”. *The international Scientific Convention*

²⁵ John Paul II, ‘Address to participants’. *Ninth General Assembly of the Pontifical Academy for Life*, 24 February 2003, n. 2; ORE, 5 March 2003, 4.

- (organized by the Jordan Society for Islamic Medical Studies, the Jordan Medical Association and the Federation of Islamic Medical Association), Amman, Jordan 15-17 of July, 2004.
- Katz, J. "Human Experimentation and Human Rights". *St. Louis University Law Journal*, 38(7): 1993.
- Kuhse, H. and Singer, P., (ed) *A Companion to Bioethics*, Maldem: Blackwell Publishing Ltd, 2001.
- McCuen, G. E. (ed.) *Human Experimentation: When Research Is Evil*, Hudson: Gem Publications, 1998.
- McNeill, P. M. *The Ethics and Politics of Human Experimentation*, Cambridge: University Press, 1993.
- Miller, F. G. *The Ethical Challenges of Human Research: Selected Essays*, Oxford: University Press, 2012.
- Mustafa, Y. "Islam and the Four Principles of Medical Ethics". *Journal of Medical Ethics*, 40(7): 2013.
- Paul, J. II. 'Address to participants'. *Ninth General Assembly of the Pontifical Academy for Life*, 24 February 2003, n. 2; ORE, 5 March 2003.
- Ramsey, P. "The morality of abortion". In J. Rachels (Ed.), *Moral Problems: A Collection of Philosophical Essays*, New York: Harper Row, 1971.
- Resnik, D. B. "Social Benefits of Human Subjects' Research". *Journal of Clinical Research Best Practices*, 4(11): 2008.
- Rumble, B. J. *The Use of Human Subjects in Research at Adventist Colleges and Universities: Suggested Guidelines*. (1994), accessed August 23, 2017, url: http://ict.aiias.edu/vol_14/014cc_341360.pdf
- Rutstein, D. D. "The Ethical Design of Human Experiments". *Daedalus*, 1969.
- Sachedina, A. *Islam and the Challenge of Human Rights*, Oxford: University Press, 2009.
- Shapiro, H. T. "Ethical Considerations in Research on Human Subjects: A Time for Change Again". *Speech presented at the Sixth Annual Raymond Waggoner Lecture*, Ann Arbor, The University of Michigan, 2001.
- Siddiqui, A. "Ethics in Islam: Key Concepts and Contemporary Challenges". *Journal of Moral Education*, 26(4): 1997.
- Wee, E. G.T. (2005). "A Christian theological response to human gene patenting" (Durham theses). Durham University. (Online: <http://etheses.dur.ac.uk/277>).
- Zaidi, S. H. *Ethics in Medicine*, New York: Springer, 2013.