



Analysis of IVF Technology: Hope for Infertile Couples

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Abstract

This research paper is designed to gain knowledge about the ART (Assisted Reproductive Technology) technique i.e IVF. Most of the population has a high prevalence of infertility but due to lack of awareness they fail to seek medical treatment, thus the main objective of this research is to help people understand IVF and clear their concepts. Worldwide 10% of all couple's face infertility which is causing stress and further lead to depression and social isolation as it is the natural human desire to have offspring. Infertility is caused by many reasons explaining why fertility treatments are necessary. Infertility is defined as being unable to get pregnant even when no contraceptive measures taken. From a literature point of view, infertility is defined as a complex health issue that is not only due to blocked fallopian tubes, ovaries, or any other issue but can be also due to certain lifestyles i.e., stress, an age that leads towards the assisted reproductive technology. Science has played a major role in the development of assisted reproductive technology; ART is a reproductive technology that is curing both male and female infertility. Almost 40 years ago world's first IVF baby was born, more than over 8 million babies are born through infertility treatment IVF as it is an infertility procedure in which egg and sperm are fertilized outside the body. This research is based on qualitative analysis and content analysis and library research method is used. According to an estimated report, 400 million individuals would be the result of IVF and other fertility treatments. IVF provides hope to millions of infertile couples with the pleasure of parenthood. Further advancements and development are on the way for IVF to make it more effective and improve its success rate.

Keywords: Assisted Reproductive Technology; *In Vitro* Fertilization; Fertility treatment; Infertile; Pregnancy

Introduction

Miracle Technology – IVF

It is an established fact that women are the much-deprived part of society and this attitude is reflected throughout our society. Similarly, it is seen that women are considered less important than men in all societies globally and the most ignored sectors are education, employment, health, etc. Among all the social aspects in which women face inequality, health is the major concern for women, which should be seriously addressed [1-5].

In 1994 Cairo organized the 4th International Conference on Population and Development which demanded universal access to reproductive health, but it was neglected by the Millennium Development Goals. Women are usually neglected in the health sector; due to this inequity, they face a great challenge in basic health facilities. Reproduction is an essential human desire, when a couple fails to conceive naturally it causes a great deal of psychological pressure by the society and culture towards infertile couple which is usually devastating and highly affects their well-

being, as infertility and its treatment have a stressful effect on the couple. Medical techniques have changed dramatically during the last few decades, yet the transformation with the help of humans will be restricted. Arthur C. Clarke, the visionary and science fiction writer, famously said that any remarkable advancement in technology is unlike magic [6-10].

Whenever technology will get a boost and there will always be solutions to the desired problems. Medical techniques for infertility have brought a drastic change in the life of an infertile couple. In vitro fertilization or IVF is a globally accepted procedure helping infertile couples to have their own children. In the field of science, the arrival of *In Vitro* fertilization procedure was a milestone for the infertile couple as the infertility rate in the world is high. IVF is a miracle procedure for many couples dreaming to conceive a healthy child of their own and fulfilling their dream of becoming parents hence, IVF brings reality to a dream of parenthood that was not possible as it enhances the chances of conceiving [11-15].

According to WHO globally about 48 million couples and 186 million individuals face infertility, a reproductive collapse to attain pregnancy after regular unprotected sexual intercourse. Many couples face infertility with no symptoms unless they start trying to conceive, since infertility is not a disease and can be treated in today's era of science. Several conditions can cause infertility in both men and women, the signs and symptoms of each can vary. Couples may face trouble in conceiving, but the medical industry has been forever making advances in this field. About 60 million people around the developing world face infertility. In 2004 about 186 million women in developing countries were facing primary and secondary infertility, WHO-DHS Comparative Report reveals. The situation in Pakistan is not different as primary infertility is 3.9%, while secondary infertility is 18.0% [16-20].

Assisted reproductive technology (ART) is a fertility treatment that can bring hope to couples with difficulties or an inability to conceive children. Techniques of ART increase the chance of successful pregnancy by the manipulation of eggs, sperm, or embryos. It is a technique for infertile couples who have already tried other infertility treatments but failed to conceive. Different risks associated with ART procedure include multifetal gestations, prematurity, low birth weight, small for gestational age, perinatal mortality, caesarean delivery, placenta previa, abruptio placentae,

preeclampsia, and other birth defects [21-25].

The infertility rate is increasing in the world, but the arrival of *In Vitro* fertilization treatment was a breakthrough in the field of science and assisted reproductive technology as it turns out to be a miracle for struggling couples making their dream of parenthood into reality with the record of safe and successful deliveries. Factors may be affecting the effectiveness of IVF i.e specifically the age of the female partner's medical history to consider. Couples conceived pregnancy through IVF faced anxiety and depression more than normal pregnancy conceived parents while after an unsuccessful IVF sadness, depression, and anger [26-30].

Cost of IVF

The charges for the basic cycle of Vitro fertilization (IVF) cycle is more than \$12,000 but it varies from \$15,000 - \$10,000 which doesn't include the cost of medications. Talking about the cost of IVF around the world varies as Greece has as low as 3000-3500 EUR while the Czech Republic has 30 clinics managed by the Czech Society for Assisted Reproduction. Spain has the expensive treatment while Turkey is considered an alternative to European countries as it is cheaper than other countries. In Pakistan, it is out of reach for middle and lower-middle-class ranging from Rs.200000 -Rs.450000 (Figure 1).

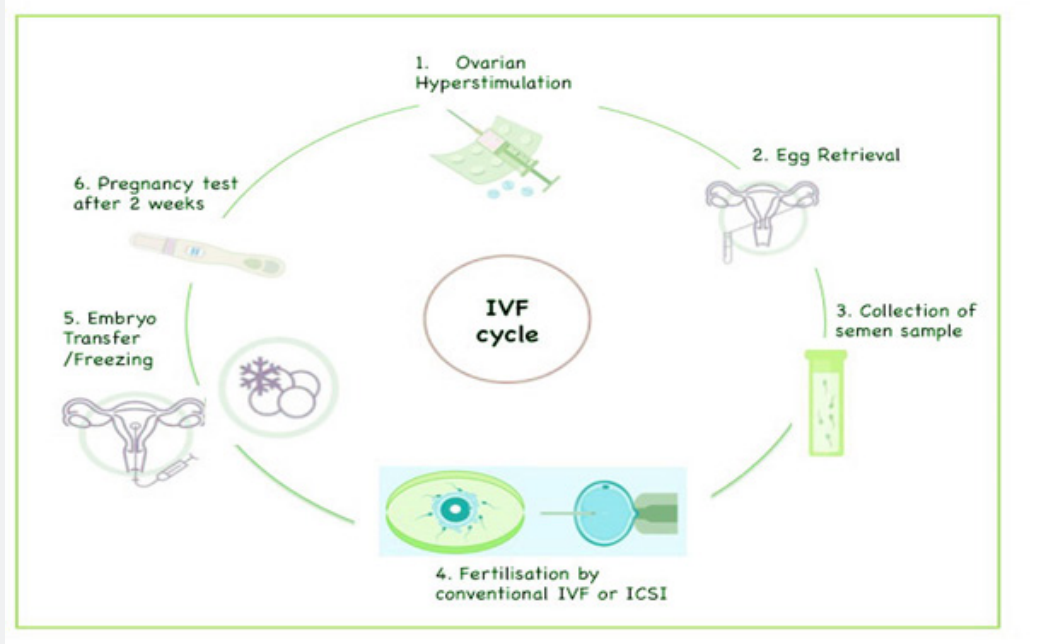


Figure 1:Spain has the expensive treatment while Turkey is considered an alternative to European countries as it is cheaper than other countries. In Pakistan, it is out of reach for middle and lower-middle-class ranging from Rs.200000 -Rs.450000.

Islamic Perspective

In Islam it is permissible to get infertility treatment with all assisted reproductive technologies, but the source of sperm, ovum and uterus must be from a legally married couple. Surrogacy is

not permissible in Islam in fact frozen sperm is not allowed to use after the death of a husband. Quran and Hadiths have emphasized on the institution of marriage and family. Allah says in Quran in surah 16: 72;

"And Allah has given you wives of your own kind, and has given you, from your wives, sons and grandsons, and has made provisions of good things for you. Is it then in vanity that they believe and in the grace of Allah that they disbelieve?"

Islam acknowledges that infertility is a significant hardship. The Quran gives the example of two prophets, Abraham and Zacharia, 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. Zacharia 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." 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!"

Dr. Zaryab Setna a renowned gynaecologist in Pakistan states that what they practice in their clinic is according to Islam, no third person is involved, and eggs and sperms used for fertilization are from married couples [31,32].

Feminist Perspective

According to feminist researchers' women are the primary source of IVF treatment as women receive more severe medical treatments which are riskier and prolonged as compared to their partners. According to Franklin, couples seek IVF treatment not only due to biological dysfunction but also to repair a missing societal role i.e parenthood [33].

Simone Bateman defines infertility as a pressure of society on couples to have their own family. It is estimated that the prevalence of infertility varies in the world about 1.5% of the female have primary fertility issues. According to feminist social pressures plays a crucial role in women's life to fulfil their reproductive desires as these treatments are often psychologically and physically exhausting but they continue painful treatment to have their own child due to societal pressure. IVF is a source of hope to overcome the pain of infertility, as it is physically, emotionally, and financially draining for the couple.

Pakistani Perspective

In Pakistan, the first IVF centre was established in the mid of 1980s since then number of centres has been increased. In Pakistani society having a child is regarded as the only aim of being a woman, they are considered incomplete without a child. Infertility treatments are common in the world, but in Pakistani society, it is taboo to have any fertility treatment. IVF is still not considered a halal treatment in society as people don't have knowledge about this treatment their concepts are not clear which makes it difficult for the couples seeking fertility treatment. Most of the couples who take IVF treatment do not want to disclose it to

society as they are aware of the thoughts of society and they know society will judge them.

According to The Fertility clinic by Setna Dr. Zaryab Setna quoted that the success of IVF varies according to age and other factors i.e there are 41-42 % chances for age less than 35 years, 35% chances for women between 35-37 years, whereas 23-26% between age 38-40 years. According to a report on hospitals in Karachi i.e., the lack of knowledge about infertility explains the societal pressure on infertile couples.

The Agha Khan University report reveals that most of the time the couples face a lack of support from their families and a negative attitude from society led them to think even about suicide. The research concluded that infertility does not only socially isolate them, but the couples also face marital conflict as society pressurizes the newlywed to have immediate pregnancy as it is a common practice in a joint family system. According to another research, a woman is blamed for infertility in Pakistani society despite male infertility rates being higher. The research further stated that IVF is valid in Pakistan but is still not accepted as the permanent solution to fertility by society [34].

Review of Literature

Worldwide it is estimated that more than 8 million babies are born through in vitro fertilization (IVF), after the birth of the world's first IVF baby 40 years ago. The discovery for the treatment of infertility by Robert G. Edwards is considered as the "greatest benefit to mankind". The discovery of IVF has brought a drastic change in the field of reproductive medicine. About 2-3% of newborns are born through this technology in many countries. Robert G. Edwards was awarded Noble Prize for development in IVF, as the technique has been a source of joy for millions of infertile couples by giving them chance to conceive their own child.

In 2015 Ernst & Young's report titled Expanding IVF treatment in India stated that nearly 10-15% of married couples are affected by infertility in India. The report further mentions that by the year 2020, couples aged between 30-40 years, are likely to be more affected by infertility.

Many couples seek help through fertility treatments to cope the infertility issues. In 70's when initially IVF started the success rate was 5-10%, but with the passage of time and advancement of science and technology the success rate has increased now and the success rate per IVF cycle is 60-80%, though success is still not guaranteed, it is a ray of hope for those who have not conceived in years. According to Dr. Shweta Goswami, there is no guarantee of successful IVF for any infertile couple, because the success rate varies from patient to patient, it would be 10% for others or it would be 60%, but still, there is hope for them.

A 34-year-old female cancer patient gave birth to a baby by using a fertility procedure involving the collection, maturing,

and freezing of eggs 5 years ago. It was a successful pregnancy by immature eggs that were later frozen and then matured. About 1-3% million births worldwide are the result of IVF in the U.S and Europe. The increased demand for IVF technology has led to research and development of the technology. According to a report (2010), an estimated 48.5 million couples were infertile i.e., 6 million increases since 1990. In 2002 according to Rustein and Shah, more than 186 million married women from developed countries (excluding China) were infertile. According to Dr. Zafar IVF is a treatment for infertility where other assisted reproductive technology fails to cure infertility. It is a hormone controlling ovulation process followed by removing eggs and sperm and then initiating the fertilization process in a fluid medium, later then the fertilized egg is transferred to the mother's uterus for fetal full-term development.

Research Methodology

Keeping in mind the research topic, the qualitative approach has been used as a research methodology. A method of content analysis was employed as it is a widely used qualitative research technique. The main purpose of this research was to have library-based research including books and different articles and research from various libraries in Karachi and the main library and seminar libraries of the University of Karachi.

Conclusion

According to World Health Organization (WHO), infertility is stated as a disease of the reproductive system, that fails to achieve pregnancy after regular sexual intercourse. Infertility is a world problem that is growing continuously. According to Lewine, his analysis on extensive meta-regression draws attention to a significant decrease in sperm counts of fertile men from Europe, North America, Australia, and New Zealand.

Infertility knowledge is limited by lots of misconceptions and myths by society. A global survey was conducted, which revealed that many women have no knowledge about fertility treatment, most of the time regardless of seeking fertility treatment couples chose alternative medicines. Infertility treatment is usually a long and exhausting process for a couple and does not always have a happy ending for the couple but is still a ray of hope for the couple. Infertility in Pakistan is approximately 22% with 4% primary and secondary infertility is almost around 18%. Infertility should not be considered only a medical problem as it is also a social issue. Society must accept infertility treatments as a solution so that it can help couples to seek fertility treatment timely.

Medical science has made a remarkable success in the field of ART: IVF which has helped infertile couples to cope with fertility issues and help them to conceive their own child with the treatment. Furthermore, the modification of treatments will probably occur with ongoing use and practice. A typical IVF cycle lasts several weeks and involves many rounds of medication and minor surgical procedures in order to stimulate ovulation, pick up

and fertilize gametes, and transfer embryos. Multiple pregnancies are the known complications of IVF as a result of the transfer of multiple embryos. Every couple wants to have a child of their own, ART is not common as people have no clear knowledge about IVF and its cultural and religious perspective is also not clear to the majority which makes it difficult for infertile couples to discuss and have awareness to help themselves with infertility. IVF is still out of reach for many couples as it is a very expensive treatment. Thus, like any other discovery or technology, IVF is a set of challenges and difficulties, but its result and success rate compensate for the challenges as it gives the pleasure of parenthood to millions of people.

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