Chapter 11
Assisted Reproductive Technology: Islamic Perspective

Introduction

Infertility is defined as the inability of a couple to conceive after 1 year of regular, unprotected intercourse. Natural cycle fecundity, or the chance of a couple conceiving in a given month, is 20–25 % for a healthy couple. Approximately 10–15 % of couples experience infertility, and after 1 year of trying to conceive it is appropriate to evaluate a couple for infertility [1].

Recent research has shown that suffering from involuntary childlessness may be nearly equally distributed between women and men, but men have more difficulty in communicating this emotional crisis [2]. The psychological impact of infertility is a complex, integral part of the condition which must be taken into account by all treatment services associated with assisted reproduction [3].

Islamic View of Infertility

It is human nature to want to have children. The Qur'an says that "wealth and progeny are adornments for the life of this world," [4] which means that families seek two things: to have a secure financial future and children. Because one of the prayers of believers described in Qur'an is "O, Lord, grant us spouses and offspring who will be the comfort of our eyes," [5] seeking a cure for infertility is, thus, appropriate.

There are a few case scenarios depicted in the Holy Qur'an which helps us to gain a proper insight into the problem of infertility. The first illustrates the story of Ibrahim (May God give him His blessing) and his wife Sara as revealed in the Qur'an (surah 51: 28–30). "…And they (angels) gave him (Ibrahim) glad tidings of a son endowed with knowledge. But his wife came forward clamoring, she smote her forehead and said: A barren old woman! They said: Even so has thy Lord

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spoken and He is full of wisdom and knowledge." The aged Sara had willingly resigned to her destiny of being infertile but yet continued to be firm in her faith and true to her husband. She remained a complete, faithful woman in every other way. And she offered Hajar to Ibrahim in marriage, so as to enable him to have children. She was ultimately blessed with a child, Ishaq.

As with the example of Ibrahim, Zakaria remained faithful and supportive of his infertile wife. In surah 21: 89–90, Allah says: "And (remember) Zakaria, when he cried to his Lord: "O my Lord! Leave me not without offspring, though Thou are the best of inheritors." So We listened to him and granted him Yahya (John). We cured his wife (barrenness) for him. They were ever quick in emulation in good works; they used to call on us with love and reverence, and humble themselves before Us." Being infertile does not make one any lesser a man or woman. Like Zakaria, one should beseech Allah for the blessings of offspring [6].

The Prophet PBUH says: "Marry the kind and fertile women who will give birth to many children for I shall take pride in the great numbers of my ummah" (Nation) [7]. Islam gives strong and unequivocal emphasis to high fertility.

Artificial Reproduction

Dr. Edwards, an embryologist and Dr. Steptoe, a gynecologist in the United Kingdom first pioneered the fertility technique called In Vitro Fertilization Pre-Embryo Transfer (IVF–ET). In July 1978, they announced to the world the birth of the first test-tube baby, Louise Brown which was a landmark achievement in the science of reproductive medicine [8]. Since then, a myriad of assisted reproductive techniques have surfaced, further refining and superseding earlier technologies [9].

The use of medical techniques to enhance fertility is a topical issue that cannot be overemphasized, as recent studies show that Assisted Reproductive Technology (ART) is responsible for between 219,000 and 246,000 babies born each year worldwide [10].

ART today is being used for many different objectives. First, is the employment of ART as a succor to childless/infertile couples.

Second, it is also used to enable women without a male partner to have children by using sperm provided by a donor. Furthermore, assisted reproduction is equally being employed for baby gender selection and the quest for a particular sex (male or female) by fertile couples who resort to IVF just to be able to have a preferred gender. It is also used to avoid genetic and chromosomal diseases by pre-implantation diagnosis (PGD).

Islamic law frowns on any use of ART with no medical justification. Self-imposed single motherhood or fatherhood, as with lesbians or gays longing for children, is a sharp negation of Islamic law provisions.

In Vitro Fertilization (IVF)

IVF is a process by which a woman, through hormonal manipulation simultaneously produces several ova. These ova are needle aspirated at the proper time under ultrasonic guidance usually through the vagina or through the abdominal wall. In the lab, the husband's sperms fertilize these ova. Successfully fertilized ova (zygotes) reaching the four to eight cell stage are transferred into the uterus. At this point, the uterus has been prepared by hormones in order to begin implantation of the transferred zygotes (pre-embryos).

The current success rate, measured by fertilizations resulting in a live birth, is between 20 and 30 %. IVF, with its various modifications, i.e., GIFT (Gamete intrafallopian transfer), ICSI (intracytoplasmic sperm injection) [11] etc., has been declared islamically permissible, only if the following conditions are satisfied. First, the IVF must involve a married couple. Second, the sperm must be from the husband, and the eggs from the wife. Third, this must occur within the context of a valid marriage. Fourth, the procedure must be conducted by a "competent team" in order to reduce the chances of failure or mixing of zygotes and pre-embryos of different couples when kept in liquid nitrogen. Fifth surrogacy is not accepted. Finally, no more than the appropriate number of fertilized eggs should be transferred to the uterus [12]. It is common to transfer only two to three fertilized eggs, although there are usually more fertilized eggs produced. Many centers transfer only one or two fertilized eggs.

Freezing the remaining fertilized ova is permissible by some Islamic Scholars as long as they are only used in subsequent cycles for the same couple, and the couple is still married. The fate of the unused eggs has not yet been decided upon. It is permissible to use them for medical research with the consent of the couple and within the appropriate guidelines. However, The International Islamic Fiqh Academy of Organization of Islamic Conferences (OIC-IFA) in 1990 refused the freezing of the pre-embryos as occurrences of mixing of gametes and pre-embryos happened.

Outcomes of ART

Pregnancy outcomes after ART treatment are not generally as favorable as for spontaneous conceptions. A substantial proportion of this excess risk is mediated through iatrogenic multiple pregnancy, as multiple embryos are routinely returned to increase the chance of pregnancy. Accordingly, early pregnancy loss, total miscarriage rates and stillbirth rates are elevated compared with the general population.

For the mother there is a low risk of hyperstimulation of the ovaries which is a serious complication. There are also elevated risks for preeclampsia, gestational diabetes, placenta previa, placental abruptia, and caesarean delivery. Gestations for ART pregnancies tend to be shorter and birth weights of singletons and twins are substantially reduced to a degree that can be comparable to smoking throughout pregnancy. The reasons for this are uncertain [13].

We are now developing a clearer view of the longer-term implications of ART. Cumulative evidence from a variety of sources including population registries, cohort studies, and meta-analyses indicate that ART is associated with an increased risk of major congenital malformation, and that this risk appears to vary by treatment modality in addition to patient's age and factors related to infertility.

The use of pre-embryo freezing appears to substantially reduce the risk, which suggests that the defects are in part intrinsic to the embryos, and that a freeze–thaw cycle adds a selection pressure against developmentally compromised pre-embryos [14].

Women undergoing IVF with multiple embryo transfer face an increased risk of twins and triplets. The social and economic consequences of multiple pregnancies are significant, as are risks to the mother and baby. Single Preembryo transfer can minimize the risk of multiples but the pregnancy and live birth rate was lower [15].

Multifetal pregnancy, particularly high-order multiple pregnancy, should be prevented in the first place because of its associated fetal and maternal complications and increased cost [16].

Islamic Views of ART

The teachings of the Qur'an and Hadiths have emphasized the vital role of the institution of marriage and the family structure, and inseparable from this is the act of procreation. To this effect Allah (God, Exalted be His Name) says 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?"

Artificial reproduction is not mentioned in the primary sources of Shari'ah; however, when procreation fails, Islam encourages treatment, especially because adoption is not an acceptable solution. Thus, attempts to cure infertility are not only permissible, but also encouraged. The duty of the physician is to help a barren couple achieve successful fertilization, conception, and delivery of a baby [17].

All assisted reproductive technologies are permitted in Islam, if the semen source, ovum source, and the incubator (uterus) come from the legally married husband and wife during the span of their marriage [18]. According to Islam, a man's or woman's infertility should be accepted if it is beyond cure. Assisted reproduction was widely accepted after prestigious scientific and religious bodies and organizations issued guidelines, which were accepted by concerned authorities in different Muslim countries. These guidelines included a Fatwa from Dar El Iftaa, Cairo (1980) and a Fatwa from the Islamic Fiqh Council, Makkah (1984), the Islamic Organization for Medical Sciences (IOMS) in Kuwait (1983), the Fatwa of International Islamic Fiqh Academy in 1986, and the International Islamic Centre for Population Studies and Research, al. Azhar University. These guidelines are followed by most Muslims [19].

Third-Party Assistance

The dyad of the legal husband and wife must not be intruded by any third party. The involvement of a third person in the equation is totally unacceptable whether this take the form of a sperm, an ovum, an embryo or a uterus. Hence the widespread practice in ART facilities of sperm, ovum, and embryo donation and the "rental" of uterus is incompatible with the Islamic injunctions related to human reproduction [20]. Frozen pre-embryos are the property of the couple alone and may be transferred to the wife in a successive cycle provided the marital bondage is not absolved by death or divorce [21].

This ban on third-party assistance has been upheld in many fatwas and bioethical decrees Issued since 1980 in the Sunni Muslim countries [22]. For example, fatwas supporting assisted reproduction treatment but banning third-party assistance have been issued in Kuwait, Qatar, Saudi Arabia and the United Arab Emirates [23]. In 1997, at the ninth Islamic law and medicine conference, held under the auspices of the Kuwait-based IOMS in Casablanca, Morocco, a landmark five-point bioethical declaration included recommendations to prevent human cloning and to prohibit all situations in which a third party invades a marital relationship through donation of reproductive material [24]. Such a ban on third-party reproductive assistance of all kinds is now effectively in place in the Sunni world, which represents approximately 90 % of the world's 1.6 billion Muslims.

Surrogacy

Another form of ART is surrogacy. There are two types of surrogacy, partial and complete. In partial surrogacy, a couple will solicit or commission a woman to be artificially impregnated by the "husband" semen. The surrogate will then carry the pregnancy to term, and upon birth, give the baby away to the soliciting couple. In this case, the child will have the rearing father as the biological father, a rearing mother, and a biological birth mother.

In a complete surrogacy, the commissioning couple will undergo IVF. The embryo produced by IVF is transferred then to a surrogate woman. The surrogate gives the baby to the soliciting/rearing couple at birth. In this case, the biological parents are the rearing couple, and the surrogate is the birth mother [25].

Under Islamic law, surrogacy is prohibited [26]. Surrogacy between the wives of one husband is allowed by Ali Khamini of Iran.

The Fatwa of the Islamic Fiqh council of Makkah in 1984 allowed surrogacy by replacing the embryos inside the uterus of the second wife of the same husband who provided the spermatozoa. In 1985, the council withdrew its approval of surrogacy [27].

Linguistically and Islamically, the Arabic word for "to give birth" is Walad, and for "mother" it is Walidah, or the "one who gives birth." A verse from the Qur'an

states that, "None can be their mothers except those who gave them birth" [28]. Even if there is an agreement between the parties, the confusion of lineage, which is inevitable in these surrogacy arrangements and which is of major importance in Islamic law, prohibits surrogacy. If surrogacy is still done despite the prohibition, it is the consensus of Islamic scholars that the birth mother is the "real" mother.

Shia's Views on ART

Major divergences in Islamic juridical opinion between Sunni and Shia religious authorities have led to striking differences in the practice of ARTs, particularly with regard to the use of donor gametes [29]. In the late 1990s, the Leader of the Islamic Republic of Iran, Ayatollah Ali Khamene'i issued a fatwa effectively permitting third-party donations including egg donation, sperm donation and surrogacy [30].

Iran is the only Muslim country in which ARTs using donor gametes and embryos have been legitimized by religious authorities and passed into law. This has placed Iran, a Shia-dominant country, in a unique position vis-à-vis the Sunni Islamic world, where all forms of gamete donation are strictly prohibited [31]. Most Shia scholars have also issued jurisprudential decrees (fatwas) that allow surrogate motherhood as a treatment for infertility, albeit only for legal couples [32].

In the Iranian clinics following Khamene'i's lead, all manner of egg, sperm, and embryo donation, as well as surrogacy, continue to take place, with his fatwa clearly displayed as moral justification. For over a decade, donor gametes are not only being donated and shared, but even purchased by infertile couples in IVF clinics in Iran and certain parts of Lebanon (Some Shia Lebanese) [33].

Many Shia religious authorities support the majority Sunni view: namely, they agree that third-party donation should be strictly prohibited. For example, Iraq's Ayatollah Sistani has opposed any form of third-party donation [34]. Several Shia jurists do not agree with Khamenei's position, nor his permissive fatwa on donor technologies. For example, Shaikh Muhammad Husayn Fadlallah, Lebanon's most prominent Shia religious authority, disagree with Khamenei's permission of sperm donation [35]. Besides, other sects of Shia: like Non-Iranian Jafari, Zaidi of Yemen and Ismaili disagree with Khamenei's fatwa.

Furthermore, Ayatollah Mohammad-Ali Taskhiri, the representative of Iran in OIC-IFA has also agreed to all decrees (fatwas) issued by this Academy on this subject.

Legal adoption does not exist in Islam. However, the Islamic scriptures emphasize on the kind guardianship of orphans. In Iran, an adoption law was sanctioned, giving Iranian couples the right to legally adopt orphaned children.. In some Sunni Islamic countries, abandoned child of unknown parents may be taken by a family who breastfeed him/her and therefore become a child of that family through Reezaa (breastfeeding) [36].

Cross Border Treatment for Infertility

Cross border treatment for infertility, commonly referred to as Cross-Border Reproductive Care (CBRC) is a relatively recent development in the history of assisted conception. CBRC is an international phenomenon and people travel overseas for a wide range of reasons [37]. These can include accessing treatment that is not available in their own country due to legal restrictions, shorter waiting lists, lower costs, higher success rates, better quality of care and availability of donor gametes [38]. Such an act is by no means restricted to one country or to followers of one religion. The pattern also exists in Europe among residents of different European countries with different regulatory mechanisms of the process of assisted reproduction [39].

Cryopreservation and the Use of Preserved Sperm

In medical terms, 'cryopreservation' is the freezing and storage of gametes, zygotes, or pre-embryos. Essentially, cryopreservation is used for two purposes. Patients who have been diagnosed as having a disease where treatment from the disease may result in infertility. The sperm is processed and is kept and thawed at a later date, and with the patient's consent, is used to fertilize the ovum from the wife. Similarly, ART procedures often result in the availability of numerous spare pre-embryos that are not transferred into the uterus of the mother. Cryopreservation or freezing techniques are able to store pre-embryo up to a few years which can be thawed and returned to the uterus of the same woman whenever she decides to have a child. The advantages of freezing embryos would be that the woman might not have to undergo the drug stimulation cycle again, and to save her the side effects of the stimulant drugs that are used [40].

Cryopreservation in itself entails no infringement of the Islamic law, but scholars have cautioned that the frozen embryos are the exclusive property of the couple who produced the gametes alone, and may be transferred only to the same wife in a successive cycle, restrictively during the duration of the marriage contract. In other words, storing the husband's sperm for the purpose of impregnating the wife in the event of his death is illegal. Under Islamic law, death terminates the marriage contract, and the widowed wife is free to remarry after the mandatory waiting period (al-'Iddah). The cryopreserved sperm or pre-embryo of an ex-husband in case of divorce should not be used either, as divorce equally renders the union void, legally [41].

Cryopreservation of gametes or gonads before exposure to radiotherapy or chemotherapy or for social reasons is allowed. These gametes or gonads can be used for conception later on by their owner. The cryopreserved gonads can be re-implanted after the end of chemotherapy or radiotherapy, based on the request of the owner of the gonads [42].

Another issue raised in this respect is state of a husband serving a prison term but still maintain the union with his wife. There is a ruling by some contemporary Muslim jurists that the stored sperm of the jailed husband can be used to impregnate his legitimate wife through artificial insemination. This is obviously premised on the presumed continuity of the marriage contract, until and unless the contrary is proven.

This could be pertinent succor to women who would like to bear legitimate children during long incarcerations of their spouses. Furthermore, it may provide in future a solid ground for the protection of conjugal rights of wives of prisoners, particularly in civil cases [43]. Actually, in Saudi Arabia the incarcerated husband is allowed to have conjugal contact with his wife in the prison itself on occassions, in civil cases.

Another topical issue concerning cryopreservation is the fate of frozen fertilized eggs if they are not used or are not needed by the owners. In Islam human life begins at ensoulment which is 120 days after conception. Therefore, doctors are not killing human beings when they leave these fertilized eggs to die.

In conclusion, the Islamic position on medically assisted conception is summarized as follows:

Artificial insemination with the husband's semen is allowed, and the resulting child is the legal offspring of the couple.

IVF of an egg from the wife with the sperm of her husband followed by the transfer of the fertilized embryo(s) back to the uterus of the wife is allowed, provided that the procedure is indicated for a medical reason and is carried out by an expert physician.

No third party should intrude into the marital functions of sex and procreation, because marriage is a contract between the wife and husband during the span of their marriage. This means that a third party donor is not allowed, whether he or she is providing sperm, eggs, embryos, or a uterus.

Adoption is not allowed. The child who results from a forbidden method belongs to the mother who delivered him/her.

If the marriage contract has come to an end because of divorce or death of the husband, medically assisted conception cannot be performed on the ex-wife even if the sperm comes from the former husband.

An excess number of fertilized embryos can be preserved by cryopreservation. The frozen embryos are the property of the couple alone and may be transferred to the same wife in a successive cycle, but only during the duration of the marriage contract.

Multifetal pregnancy reduction should not be intentionally performed as in ART, and therefore fetal reduction is only allowed if multiple pregnancies occurred spontaneously and is endangering the viability of the multiple embryos.

It is also allowed if the health or life of the mother is in jeopardy.

All forms of surrogacy are forbidden.

Establishment of sperm or egg banks is strictly forbidden, for such a practice threatens the existence of the family and should be prevented.

The qualified physician is the only person to practice medically assisted conception in all its permitted varieties. If he performs any of the forbidden techniques, he is guilty and he must be stopped from his morally illicit practice.

Regulations for ART should be laid down in all Muslim countries with clear adherence to the Islamic Fatwas on this important subject.

Gender Selection

"Are we having a boy or girl?" is one of the first things prospective parents wonder about the most. During pregnancy, couples wanting to know the sex of the future child may use ultrasound, chromosome analysis or testing of fetal DNA in maternal blood early in pregnancy, to find out the answer months before delivery. An estimated 50–70 % of parents want to learn the sex of their future child during pregnancy [44].

However, "More than 100 million women are missing." This was the title of an article written by social philosopher Amartya Sen and published in the New York Review of Books more than 20 years ago. Since then, the phenomenon of "missing" girls has been widely researched and publicized. It has been characterized by the feminist philosopher Mary Anne Warren as 'gendercide' and by The Economist (March 2010) as "the worldwide war on baby girls." About 40 million women were missing in China alone. Later and more sophisticated research by Western scholars indicates that, globally, the number of missing women has increased to over 100 million and that, in China, the figure is 40.9 million, with India having 39.1 million and Pakistan 4.9 million [45].

Due to strong cultural preferences for sons, marked sex ratio disparities have emerged in countries like China, Armenia, Azerbaijan, South Korea, and India. This lopsided preference for boys is often explained by gendered expectations that rely on sons to carry on the family name, support elderly parents, keep property within the family, perform specific religious rituals, or contribute more to the family's economic status [46]. In India, the girl has to pay a dower to the prospected husband and the father of the girl should bear that responsibility. If he has three or four girls, the expenses become unbearable (unless he is wealthy) and to avoid such situation he opts for abortion or infanticide.

The worst excesses are seen in parts of rural China where there are 140 male births for every 100 female. This leads to large numbers of unmarriageable men. Recent studies suggest that these men are marginalized, lonely, withdrawn, and prone to psychological problems [47].

The one child policy in China, enforced many parents especially in rural areas to abort a female fetus, whenever it was detected during pregnancy.

Gender Selection Methods

Modern reproductive medicine is able to offer reliable sex selection treatment.

Sex selection technologies may be broadly divided between post-pregnancy techniques and pre-pregnancy techniques and are conducted for medical or social ('nonmedical') reasons.

Post-pregnancy techniques, such as the use of prenatal screening through ultrasound, amniocentesis, or chorionic villi sampling, followed by selective abortion are generally condemned worldwide if undertaken for social reasons.

Pre-pregnancy techniques include microsorting or preimplantation genetic diagnosis (PGD).

Because they are not associated with abortion, pre-pregnancy techniques are argued by some to differ from post-pregnancy techniques and be more acceptable ethically.

Microsorting involves a patented process using a florescent dye to identify spermatozoa bearing the correct sex chromosome. Sperms can be sorted to produce an X or Y chromosome enriched sperm mixture, using flow cytometry. Sperm sorting, which is less effective but also less costly, can be used to increase the likelihood of producing a child of the desired sex [48].

PGD is used to determine the sex of embryos created by IVF and involves the removal of one or two cells (blastomeres) from an embryo at day 3 of development. This is followed by chromosomal analysis. Selected embryos are transferred to a woman's uterus on day 4 or 5. PGD is currently used to identify serious chromosomal or genetic disorders but may also be used for "nonmedical" sex selection in which only embryos of the desired sex are selected for transfer back to a uterus [49]. PGD is a technology that, when employed for sex selection, yields a near zero chance of a pregnancy with a fetus of the non-chosen sex [50].

The recent report of the International Federation of Fertility Societies notes that of 105 countries surveyed, sex selection by sperm-sorting techniques or PGD is allowed under legislation in 15 countries, not allowed in 43 countries and not mentioned in law in 15 countries. It is practiced in 26 countries [51].

Finally, sex can be determined by an ultrasound and embryos then selectively aborted. This remains the most common technique for sex selection in China and India today [52].

Gender selection is however permitted if a particular sex predisposes to a serious genetic condition. One of the first couple to use this technique of sex selection was hoping to escape a deadly disease known as x-linked hydrocephalus, which almost always affected boys. Embryonic sex selection would make possible the weeding out of other serious x-linked disorders including, Duchene muscular dystrophy, hemophilia, and fragile X syndrome [53]. Accordingly, decisions not to attempt replacement of embryos produced in vitro on the grounds that they show serious chromosomal or genetic anomalies, such as aneuploidy, cystic fibrosis, muscular dystrophy or hemophilia, are accepted [54].

The prophet Muhammad (PBUH) said: "Choose for your offspring the suitable woman for hereditary plays a role" [55]. The subject of Premarital examination to avoid genetic diseases will be discussed in another chapter (Genetics).

Ethics of Gender Selection

Although the successful development of sex selection technologies represents clear medical and scientific advancement, their use is a subject of intense ethical debate amongst clinicians, philosophers and bioethicists alike [56].

Although sex selection for medical purposes is generally accepted as ethically appropriate, concerns about endorsement of sexist practices, disruption of the sex ratio, or exacerbation of sexist discrimination has led the overwhelming majority of countries regulating PGD to prohibit its use for sex selection for social reasons [57]. Professional societies and international policy documents have also joined the opposition to this practice on similar grounds (ACOG 2007) [58], (FIGO 2006) [59].

Worldwide, sex selection for nonmedical reasons is generally defined as gender discriminatory (whether prior to pregnancy or post-pregnancy). A host of international human-rights laws, national laws and regulations, and ethical bodies of leading professional associations suggests that it infringes ethical practice and the shared responsibility of nations to protect and promote human-rights principles, particularly that of non-discrimination [60].

Islamic Views

Is it ever appropriate to select for gender? In Islam, gender selection is only up to God [61]. The Holy Qur'an unequivocally affirms that, "He (Allah) creates what He wills. He bestows female upon whom He wills, and bestows male upon whom He wills" [62]. Hence, it could be safely argued that gender selection on its own constitutes unacceptable interference in the divine demographic order and, ipso facto, a nullity under the law of Islam.

Abortion or infanticide has long been used as means of sex selection. Arabs more than 1400 years ago, before Islam, used to practice infanticide for gender selection. The Holy Qur'an described this act and condemned it. It states in one version: "On God's Judgment Day the entombed alive female infant is asked, for what guilt was she made to suffer infanticide?" [63]

Gender selection technologies have been condemned on the ground that their application will discriminate against female embryos and fetuses, so perpetuating prejudice against the girl child, and social devaluation of women. Such discrimination and devaluation are condemned in Islam [64]. Application of PGD or sperm sorting techniques for sex selection should be discouraged in principle. It should not be used for selection of the gender unless there is a clear medical indication.

Islamic Fiqh council of Islamic World League passed legal resolution (Fatwa) in its 19th meeting held in November 2007, and banned gender selection performed specifically for social reasons. It allowed gender selection for medical reasons only.

Sex ratio balancing in the family is considered acceptable by few scholars for very limited cases such as a wife who delivered five or six daughters and her husband has dire need for getting a boy! Centers performing the procedure should keep a record of all performed cases to ensure they are not choosing one sex only.

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