

# Assisted reproductive technology in Saudi Arabia

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## ABSTRACT

يهدف هذا البحث إلى تقديم نظرة شاملة حول تطبيق تقنية مساعدة الإنجاب في المملكة العربية السعودية، ومدى ملائمتها لأسس الشريعة الإسلامية. شمل البحث مراجعة جميع الدراسات الرئيسية التي تطرقت لهذه التقنية في المملكة العربية السعودية، ومن ثم تحليل النتائج ومطابقتها للشريعة الإسلامية. وقد بينت هذه الدراسة ما هو محرم تطبيقه، كما وبينت عدم توفر مركز قومي لتسجيل جميع الحالات مما يسهل جمع المعلومات من مراكز أطفال الأنابيب ومقارنتها بالإحصائيات العالمية، بالإضافة إلى تبادل المعلومات حول هذا الموضوع علي المستوى الدولي الذي يساعد المرضى اللذين لديهم تعثر في الحمل والإنجاب دون المساس بالتقنيات المحرمة شرعاً. كما يساعد هذا البحث علي تطوير الجودة في العلاج وتعزيز عدد من الطرق الحديثة مثل: نضوج البويضة في المعمل، إجراء التجارب علي البويضة المخضبة وتسهيل الموارد التي قد لا تكون متاحة مع الاحتفاظ بالأمور الدينية والابتعاد عن الاختلافات.

This paper aims at presenting details of the application of assisted reproductive technology and the impact of the Islamic law (Sharia) on its practice in the Kingdom of Saudi Arabia (KSA). Analysis of the data sourced from manual searches of bibliographies from key articles showed that this technology in KSA is practiced in a strictly religious manner and certain aspects of the technology are completely forbidden. It further showed that lack of an official government in-vitro fertilization (IVF) registry to gather information on the activities of IVF clinics has limited the data available for international comparisons. Sharing information internationally could allow religiously concerned infertile couples to have access to the reproductive services in the Kingdom. It would further improve the quality of care, enhance certain techniques like in-vitro maturation and experimentation on embryos, by providing resources that are currently unavailable, keeping in view the religious beliefs and avoiding conflicts.

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Infertility affects between 10-15% of couples, and with relative frequency in men and women.<sup>1,2</sup> Assisted reproductive technology (ART) has helped infertile couples to conceive, and have a child.<sup>3</sup> The establishment of assisted reproduction centers in the Middle East was delayed until the mid-1980's. The most important cause, being the religious and cultural factors.<sup>4</sup> It became popular soon after the Fatwa (Islamic decree) from Al-Azhar in 1980,<sup>5</sup> and the Islamic Fikh Council in Mecca in 1984.<sup>6</sup> Assisted reproductive technology in the Kingdom of Saudi Arabia (KSA) started in 1986, and there are approximately 23 centers in the Kingdom today.<sup>1</sup> In this review, we discuss the various aspects of ART, its limitations and some other issues related to its use, such as child welfare, coverage of expenses for the infertile couples seeking treatment, and the influence of cultural factors on the technology in KSA. The study demonstrates the importance of awareness programs and counseling for the general public, especially regarding genetic disorders, its consequences, and treatment options.

*Infertility and Islamic law (Shariah).* The issue of infertility has been addressed in the Quran as "To Allah (God) belongs the kingdom of heavens and the earth. He creates whatever He pleases. He gives daughters to whom he pleases and gives sons to whom he pleases. To some He gives both sons and daughters and makes barren whom He wills; surely, He is All-knowledgeable, All powerful."<sup>3,7</sup> Islam is not against treating infertility, but rather encourages it and considers it necessary as it involves the procreation in a couple.<sup>8</sup> Shariah, besides dealing with the religious matters, also governs every aspect of political, social and private life in Saudi Arabia. The primary sources of Shariah are the Quran and Hadith (tradition and the sayings of Prophet Mohammad, Peace be upon him).<sup>9,10</sup> Since there was no mention of assisted reproduction in

the primary sources, the opinions of Islamic scholars are taken into account after due considerations. Shariah is flexible, and conforms to certain opinions, but it is strictly respecting the spirit of primary sources.<sup>3,10,11</sup>

**Cultural factors influencing assisted reproduction in Saudi Arabia.** The procreation potential of a woman in Saudi Arabia is considered to play an important role in her social status. Procreation is a major factor in maintaining her dignity and self-esteem as childbirth, and rearing are regarded as family commitments.<sup>12</sup> Initially there was some disagreement on assisted reproduction, and couples seeking infertility treatment felt shame, doubt, and even guilt. The treatment was associated with secrecy in the 1980's, but such feelings were replaced by openness in the 1990's.<sup>13</sup> If the woman was found to have fertility problems, the man would choose the solution of polygamy rather than undergo treatment, especially in the rural areas. However, there has been some contribution by different Islamic authorities in the form of publication that has helped people to utilize the available assisted reproduction services in the Kingdom.<sup>8,14-18</sup>

**Funding of ART.** Infertility treatment is not funded in many countries. Private insurance companies do not cover infertility treatment thereby causing a financial burden on infertile couples. This results in not turning up for a second cycle if the first is unsuccessful.<sup>19</sup> In Saudi Arabia, there are many organizations that provide medical coverage to their employees. But, no coverage is provided for infertility treatment.<sup>20</sup> The assisted reproductive centers are mostly in the private sector. Infertility centers in governmental institutions have a huge waiting list.

**Legislation and Guidelines governing ART.** Saudi Arabia has a licensing body to issue a license for the practice of ART. This protects the citizens from professional misconduct, and malpractice.

**Application of various aspects of ART in the Kingdom.** Various aspects of ART were examined, but due to lack of any recent reviews, little information is available for Saudi Arabia. In many countries, all the ART, and their results are reported to a national registry every year. This helps in maintaining records, and storing information for long periods with a protected central control on the release of information.<sup>22</sup> Saudi Arabia does not have any such registry limiting such information.

**Couple requirements or marital status.** Islam allows the treatment of infertility, and ART can be performed on infertile couples only when it involves the husband and wife.<sup>23</sup> This makes legal marriage a compulsory requirement for procreation.<sup>21</sup>

**Number of embryos to be transferred.** According to the set guidelines, not more than 3 embryos can be transferred back to the woman's uterus. But, the number

of embryos transferred varies from patient to patient and depends upon the treating doctor to decide.

**Cryopreservation.** Cryopreservation is practiced in Saudi Arabia. It involves the freezing of gametes, and embryos. It is usually performed in people at risk of their fertility being affected by some disease, and its treatment like cancer, and chemotherapy. The storage period is unlimited, but the future use of the gametes or embryos is allowed only if the couple is still within the marriage contract.<sup>3,5,15,24</sup>

**Posthumous insemination.** Posthumous insemination is considered illegitimate, as under Islamic law death, is the end of the marriage contract making it illegal to use the gamete and embryo.<sup>25</sup> This technique is not practiced in Saudi Arabia.

**Gamete and embryo donation and surrogacy.** Using a donor sperm, donor oocyte, or embryo, and surrogacy is considered adulterous by Shariah.<sup>10,26</sup> All such procedures are forbidden in Saudi Arabia. According to Shariah, marriage is a contract between a wife and a husband, and it is unacceptable for a third party to interfere in procreation.<sup>5,10,14,15,20</sup> Authenticity of lineage is of prime importance in Islam, and the practice of using donors for procreation breaks the links of family genetic lineage. Therefore, strict emphasis is laid on safeguarding this lineage.<sup>18</sup> Furthermore; donation leads to the risk of incest.<sup>10</sup>

**Multifetal pregnancy reduction.** Selective termination of presumably healthy fetuses is considered a type of abortion, and abortion is not allowed in Islam.<sup>27</sup> However, the Islamic Jurisprudence Council of Mecca (The Islamic World League) passed a legal Resolution (Fatwa) in 1990 which states, "In case of a confirmed risk to the mothers life, proved by a report from a committee formed of competent trustworthy physicians, it is allowed to abort to drive away the larger detriment".<sup>28</sup>

**Preimplantation genetic diagnosis.** If serious genetic defects are diagnosed by preimplantation genetic diagnosis (PGD) the embryo transfer can be avoided, which prevents pregnancy terminations if the defect is diagnosed at a later stage and would cause a risk to the woman's life.<sup>18,29</sup> The frequency of certain genetic diseases is high in Saudi Arabia, due to consanguinity, which is prevalent in the Kingdom.<sup>30,31,32</sup> Sharia is not against therapeutic strategies, thus, PGD is not forbidden. However, genetic counseling is still not very popular, and that has limited the use of this facility.

**Gender selection.** The Islamic Jurisprudence Council of Mecca (The Islamic World League) passed a legal Resolution (Fatwa) in its 19<sup>th</sup> meeting held in November 2007, and banned gender selection, performed specifically for social reasons. However, it is permitted for medical reasons for example, in case of a confirmed risk of transmission of X linked genetic disorder to the offspring.<sup>28</sup>

**Experimentation on embryos.** Considering the Islamic view on the time of commencement of human life, and as there are no issues regarding the status, control, and fate of embryos, the experimentation on human embryos is not prohibited in Saudi Arabia.<sup>3</sup> However, lack of resources currently restricts this procedure.

**In-vitro maturation.** In vitro maturation (IVM) has not gained popularity in Saudi Arabia as yet, and is carried out only in a very few centers, although there is no restriction on its practice. Lack of resources can be the possible cause.

**Treating single women and same gender couples.** A single woman will need a donor sperm for procreation. As previously stated donation of sperm, oocyte or embryo is considered adulterous by Shariah.<sup>10,26</sup> "A homosexual relationship is an indecent act and transgression beyond bounds".<sup>33</sup> Therefore, treatment of single women and same gender couples is forbidden in Saudi Arabia.

**Issues influencing child welfare.** Certain issues need consideration when a couple seeks treatment for infertility for example, age, economic status, and the ability of a couple to meet the needs of the child born as a result of this treatment. Other factors include home environment, mental, and physical health of the parents, couples with a history of HIV or a known genetic disorder, and criminal history of the parents including child abuse.

**Awareness programs and counseling.** Due to an overall lower literacy rate in Islamic/Arab communities, than in developed countries, adequate awareness in the community regarding the benefits of ART is essential. This can be achieved through media, posters, lectures, videotapes, articles in newspapers, and by circulating booklets in Arabic.<sup>27</sup> Genetic counseling helps to disseminate information, and provide careful understanding of the genetic basis of the defect, its inheritance, its clinical consequences, mode of treatment, and means of prevention.<sup>27,34-37</sup>

In conclusion, among all the medical advent assisted reproduction has lead to many ethical, legal, and social issues.<sup>21</sup> Islam, being a flexible religion has accommodated the needs of new ideas, and technology, especially in medicine including ART.<sup>3</sup> Despite some restrictions, Saudi Arabia is able to provide reproductive services to infertile couples in the best possible way. Building bridges across international borders could open vast new avenues for research and provide humankind with much needed therapeutic tools. This study demonstrates the importance of a government IVF registry,<sup>38</sup> that would help Saudi Arabia to contribute voluntarily to share information on its practice of ART internationally. Sharing information internationally could allow religiously

concerned infertile couples seeking treatment to have access to the reproductive services in Saudi Arabia. Furthermore, by enhancing genetic counseling, transmission of genetic disorders can be prevented in the community by causing awareness in the general public to utilize the available genetic services.

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### Related topics

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