

DOI: 10.12731/2658-6649-2023-15-1-435-453
UDC 614.586



Original article | Reproductive Rights

LEGAL SITUATION REGARDING ASSESSED REPRODUCTION TECHNOLOGIES IN MUSLIM COUNTRIES

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Background. *The assessed reproduction technologies (ART) often involve a range of controversial ethical and legal issues that are inspiring for research.*

Purpose. *Comprehensive study on ways to use certain types of technologies.*

Materials. *This paper provides with research of a legal framework of the ART based on the legislation of 13 Muslim countries: Oman, Saudi Arabia, Bahrain, Morocco, Jordan, the UAE, Malaysia, Iran, Lebanon, Egypt, Algeria, Tunisia and Turkey.*

Results. *Due to a range of religious, ethical, legal and social reasons access to the ART was prohibited, but in recent decades mujtahids and fakihis have come to conclusion that for the sake of national prosperity and sustainable development of the ummah medically assisted reproduction may be permissible under certain conditions and must be regulated by laws and correspond to fatwas. The limits of usage of certain technologies have common tendency in gulf countries and the Northern Africa. Nevertheless, some other Muslim countries (e.g., Iran and Malaysia) address this issue in a more detailed and open-minded way.*

Conclusion. *Although there're legal mechanisms and tools for a broader interpretation and a wider interpretation despite critical opinion of theologues and restricted nature of so-called «gates of al-ijtihad», because they are based on established years ago institutes an, in fact, don't contradict the foundations of Qur'an and Sunnah. However, features of Muslim law remain.*

Keywords: *assisted reproduction techniques; medically assisted reproduction; biomedical research ethics; Muslim countries; laws and regulations; kinship*

For citation. *Shestak V.A., Tsyplakova A.D., Kholikov I.V. The legal situation regarding assessed reproduction technologies in Muslim countries. Siberian Journal of Life Sciences and Agriculture, 2023, vol. 15, no. 1, pp. 435-453. DOI: 10.12731/2658-6649-2023-15-1-435-453*

Научная статья | Репродуктивные права

ПРАВОВОЙ СТАТУС ВСПОМОГАТЕЛЬНЫХ РЕПРОДУКТИВНЫХ ТЕХНОЛОГИЙ В МУСУЛЬМАНСКИХ СТРАНАХ

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Обоснование. Применение вспомогательных репродуктивных технологий (ВРТ) зачастую сопряжено со спорными этическими и правовыми вопросами, которые представляют интерес для исследователей.

Цель. Формирование комплексного представления о пределах применения определённых видов технологий.

Материалы. В данной работе проведено исследование правового регулирования ВРТ на основании законодательства 13 мусульманских стран: Омана, Саудовской Аравии, Бахрейна, Марокко, Иордании, ОАЭ, Малайзии, Ирана, Ливана, Египта, Алжира, Туниса и Турции.

Результаты. Ввиду ряда религиозных, этических, юридических и социальных причин доступ к вспомогательным репродуктивным технологиям долгое время был невозможен, однако в последние десятилетия муджтахиды и факихи пришли к выводу, что для благосостояния уммы репродукция с медицинской помощью может быть допустимой в отдельных случаях и должна быть урегулирована на законодательном уровне, так и соответствующими фатвами. Авторами исследования отмечается общая тенденция регулирования в государствах Персидского залива и Северной Африки, тем не менее некоторые другие мусульманские страны, такие как, например, Иран и Малайзия, более детально и лояльно подходят к данной проблематике.

Заключение. Несмотря на то, что в доктрине устоялось категорическое мнение теологов в отношении закрытости так называемых врат «аль-иджтихад», на практике существуют правовые механизмы и инструменты для расширительного толкования нормативно-правовых актов и впоследствии их более широкого применения, поскольку они опираются на давно устоявшиеся институты и, по сути, не противоречат основам Корана и Сунны Пророка Мухаммада. Однако специфика мусульманского права сохраняется.

Ключевые слова: вспомогательные репродуктивные технологии; репродукция с медицинской помощью; этика биомедицинских исследований; мусульманские страны; нормы шариата; законодательство; ислам; родство

Для цитирования. Шестак В.А., Цыплакова А.Д., Холиков И.В. Правовой статус вспомогательных репродуктивных технологий в мусульманских странах // Siberian Journal of Life Sciences and Agriculture. 2023. Т. 15, №1. С. 435-453. DOI: 10.12731/2658-6649-2023-15-1-435-453

Introduction

First of all, it is worth mentioning that in Muslim countries one of the crucial factors in determining social status is the presence and number of children in a family, as it is a social and cultural obligation upon marriage. Infertility and sterility do not meet the expectations of society that put excessive pressure on the spouses and do not allow them to occupy a high social position. Every year indicators are falling: over the past half of the century, the fertility rate has significantly decreased among both: women and men. If in the 1970s there were five children in an average Muslim family, then by the 2010s the situation has worsened – on average two children in a family [5]. In Iran many young spouses have one child or no children at all [2, 3]. In accordance with the UN data presented in the table «Population Division of Department of Economic and Social Affairs of the United Nations. World Population Prospects: the 2019 Revision» [20], one may conclude that the reduction in live births in Muslim states reaches up to 80%.

Country	Live births per women														Difference, %
	1950-1955	1955-1960	1960-1965	1965-1970	1970-1975	1975-1980	1980-1985	1985-1990	1990-1995	1995-2000	2000-2005	2005-2010	2010-2015	2015-2020	
Algeria	7.28	7.38	7.65	7.65	7.57	7.18	6.32	5.30	4.12	2.89	2.38	2.72	2.96	3.05	58
Bahrain	6.97	6.97	7.17	6.97	5.95	5.23	4.63	4.08	3.40	2.95	2.65	2.25	2.12	2.00	71
Egypt	6.75	6.75	6.65	6.45	6.00	5.70	5.49	5.00	4.15	3.60	3.15	3.02	3.45	3.33	51
Jordan	7.38	7.38	8.00	8.00	7.79	7.38	7.05	6.02	5.06	4.30	4.00	3.80	3.40	2.77	62
Iran	6.91	6.91	6.91	6.68	6.24	6.28	6.53	5.62	3.70	2.40	1.92	1.2	1.91	2.15	69
Qatar	6.97	6.97	6.97	6.97	6.75	6.10	5.45	4.40	3.74	3.46	2.95	2.23	2.00	1.88	73
Lebanon	5.74	5.72	5.69	5.23	4.67	4.23	3.75	3.50	3.20	2.65	2.20	1.90	2.08	2.09	64
Libya	7.14	7.20	7.30	7.99	8.10	7.67	6.68	5.71	4.22	3.20	2.64	2.50	2.45	2.25	68
Morocco	6.61	6.90	7.10	6.85	6.40	5.90	5.40	4.43	3.70	2.97	2.67	2.53	2.60	2.42	63
Malaysia	6.35	6.38	6.37	5.38	4.72	4.20	3.97	3.67	3.44	3.13	2.45	2.22	2.11	2.01	68
UAE	6.97	6.97	6.87	6.77	6.45	5.75	5.30	4.90	3.93	2.97	2.40	1.97	1.70	1.42	80
Oman	7.25	7.25	7.25	7.31	7.41	8.10	8.32	7.85	6.27	4.46	3.20	2.90	2.90	2.93	60
Saudi Arabia	7.18	7.18	7.26	7.26	7.30	7.28	7.02	6.22	5.55	4.40	3.65	3.23	2.73	2.34	67
Tunisia	6.65	6.85	6.99	6.92	6.39	5.65	4.82	4.00	2.98	2.34	2.04	2.02	2.25	2.20	67
Turkey	6.69	6.50	6.20	5.80	5.39	4.69	4.11	3.39	2.90	2.65	2.37	2.20	2.12	2.08	69
Average	6.86	6.89	6.96	6.82	6.48	6.09	5.66	4.94	4.02	3.22	2.71	2.49	2.45	2.33	66

Despite the comparative economic and political stability of a number of Muslim countries, the threat of a demographic crisis is more urgent than ever in this region. In Western countries there are several ways to solve this problem, for instance, adoption of children. However, this issue needs elaborating and clarifying, because

unlike the Europeans' attitude to adoption the Muslims' one is different. A married couple can take care of a child, *i.e* take custody (“*al-khafala*” in Arabic), for some period of time, but on a regular and legal basis taking care of an underaged person and treating him or her as their own child alike in the West is impossible in most Arab countries. It is considered as *haraam* (religious prohibition in Arabic) that is traditionally associated with the desire to protect *nasab* (can be translated from Arabic as “origin”, “kinship”, *i.e* may be understood as “genealogy”). The importance of knowledge of *nasab* personality is described in numerous passages of both: the Qur'an and the Sunnah (*hadiths*). This moral imperative is vital for understanding the worldview of Muslims, as it is a determining factor in family matters. On these grounds assisted reproductive technologies (ART) may be the exact key to solving the demographic problem, but a number of ethical, moral, and legal issues arise that require more detailed studies [22; 16]. The issue may be influenced by HIV prevalence rate in the particular community [19] or by the situation of pandemic of mass diseases such as Ebola [31] or COVID-19 [2].

However, before talking about approaches, it is necessary to understand what ART include. The following treatment methods for infertility and sterility are known to science: in vitro fertilization (IVF), culturing cells or embryos and transferring them in vitro, artificial insemination, injection of sperm into the oocyte cytoplasm (ICSI), preimplantation genetic diagnosis (PGD) / preimplantation genetic screening (PGS), donation of germ cells and embryos, cryogenic preservation of germ cells, tissues and embryos and surrogacy: traditional (partial) and gestational (full). This classification is necessary to assess the completeness of the legal regulation of this area in the states of the Muslim legal system, since not all methods are legalized.

Despite the fact that a number of foreign scientists (including representatives of the described states) have already covered this issue, it seems vital to emphasize the peculiarities of the *ummah*, which can provide solutions without imposing Western points of view on Muslim attitude to ART. In addition, it is important to take into account the experience of other movements of Islam, as well as secular states, which, due to the dominance of the Muslim religion, follow a special path of development, since it is difficult to remain impartial under such strong influence of certain authorities.

Materials and methods

On grounds of the analysis and systematization of the regulatory framework, which can include not only laws, but fatwas as acts creating a new rule, as well as recommendations of consultative bodies, a study was conducted in

accordance with the current state of affairs regarding the regulation of ART in Muslim countries and summarized in the table of permissions and prohibitions in secular and 12 Muslim states. The historical path of the development of the *ummah*, the ideological differences in Islam and the linguistic features of the official languages (Arabic and Persian) were also taken into account through the study of the opinions of authoritative mujtahids and the works of foreign scholars. Due to this, the roots of the problems and long-established institutions that need to be reassessed for sake of the development of ART and, subsequently, may cause the revision of a number of laws were examined in detail.

Results of the research

Science and *fiqh*

It was the first time when an authoritative scientist, professor of Al-Azhar University Gamal Abu Al-Serour, who formulated the principles of bioethics in relation to medical research of the embryo and the use of ART for the benefit of the Islamic world in his works, spoke out on medical issues of ART:

- The described technologies should be applied only in the interests of mankind;
- They should not harm a person, fetus, humanity or society;
- Using ART requires necessary respect to the autonomy of competent persons and should protect those who are not capable of autonomy;
- Both distributive (fair distribution of benefits) and corrective (restoration of rights) justice should be exercised;
- Academic integrity must be ensured [24].

However, the studies of embryos cannot be used except in favor of procreation. The cloning issues are prohibited worldwide and, in particular, the Egyptian doctor did not differ in his position on this matter. Regarding the methods of medically assisted reproduction, he was the first Muslim scholar to note significant progress in the field of ART and to emphasize the importance of creating the necessary standards in accordance with Sharia laws. The Arab Republic of Egypt (hereinafter — Egypt) was the first country to have allowed the use of certain types of ART as far back as 1980. His Excellency Sheikh Gad Al-Haq Ali Gad Al-Haq, the great Mufti of Egypt (1978–1982), despite being a supporter of Wahhabism (ultra-conservative trend), issued a fatwa that allowed the use of IVF, but third-party intervention was impossible, so that it led to the prohibition of surrogacy and donation of germ cells and embryos. Subsequently, in most Arab countries this prohibition became widespread in terms of the principle of preserving *nasab*. The relevant fatwas were issued by Al-Iftah'

Dar in Cairo in 1980 (Center for Islamic Legal Studies of Egypt), the Islamic Organization of Medical Sciences in Kuwait in 1983, the Islamic Fiqh Council in Mecca in 1985, the Qatar University in 1993, and the International Islamic Center for Population Studies and Research at Al-Azhar University and the Islamic scientific, educational and cultural organization in Raabat (hereinafter – ISESCO) in 2002 [17].

It is curious that the Islamic Fiqh Council originally in 1984 permitted surrogacy if embryos were transferred to the uterus of the second wife. However, in 1985 the Council abolished its decision [25]. In the 1990s–2000s, ISESCO also published two important documents «Assisted reproductive technology-practice in ethical implications of advanced research in genetics» [14] and «Ethical Implications of Human Embryo Research» [13] that influenced authoritative scientists' mind and made them seriously think about gaps in the laws of Muslim countries.

In 2005 «Universal Declaration on Bioethics and Human Rights» [28] was adopted by UNESCO, which inspired legislators to develop laws in detail or make serious amendments in legislation of Muslim states. Despite the democratic spirit of the document, the Arab countries ended up working out this issue very stickily to shariah principles. UNESCO stressed that for medical purposes the choice of child gender is acceptable. An authoritative Canadian lawyer, Bernard Morris Dickens narrowed the ban in his work, empathizing that families with two or more children of the same sex should be given a choice [4]. Given that in Muslim countries a family should have at least one male child as an heir of the house and a successor of his ancestors in accordance with traditions, Bernard Morris Dickens's opinion has a point and seems logical. Nevertheless, most of the above-mentioned states either do not regulate this aspect of ART, or consider it to be *haraam*, since it contradicts shariah and Islam in general. There is no consensus on this issue in Jordan since in 2010 the Fatwa Department of Jordan officially stated that there was no need to allow the choice of the gender of the child. In any case it is a blessing from Allah Almighty. Nevertheless, Ibrahim Zayed Al Kilani, a former minister of philanthropy and Islamic affairs, a member of the Islamic Action Front, objected, saying that Almighty Allah sends the one he wants and he decides whether the operation will be successful or not. In addition, the separation of male chromosomes from female occurs even before fertilization of the egg, so nothing is technically forbidden [32].

Some people consider these technologies to be a designer of babies that allows genetic mapping, life from a test tube, choice the sex of the baby and termination of pregnancy, that raise a number of ethical issues, but in some

cases, they can save and make it easier the life of both mother and baby. So, for example, in Guideline No. 003/2006 of the Malaysian Medical Council one can find permission to choose the sex of the child if it reduces the likelihood of predisposition to serious pathological diseases. In addition, new federal IVF law No. 5 of the UAE 2019 also allows gender selection for the sake of family balancing.

Legislation

The chapter of Law No. 18-11 of 2018 of the Algerian People's Democratic Republic (hereinafter — Law No. 18-11) and the Resolution of the Ministry of Health and Population No. 238/2003 of 2003 of the Republic of Egypt (hereinafter — Resolution No. 238/2003) show the general trend. In accordance with Article 371 of Law No. 18-11, spouses who are legally married and cannot naturally have children have access to ART. Elaborating this definition, we can look up the definition from Law No. 47.14 of the Kingdom of Morocco 2018 (hereinafter — Law No. 47.14) and Law 26/2017 «On the use of medical methods that help with intrauterine insemination and in vitro fertilization» 2017 of the Kingdom of Bahrain (hereinafter — Law 26/2017) and add that the period during which a woman cannot become pregnant without contraceptives — 12 months (1 year). New federal IVF law No. 5 of the UAE 2019 reduces the infertility period — 6 months if a woman is older than 35 years. Moreover, we are taking into account only newlyweds and the first marriage in general in the law No. 26/2017, since the marriage should not be interrupted by death or divorce. Law No. 47.14 has another restriction for spouses — sterile individuals do not have access to ART (this also applies to Saudi Arabia).

However, in some cases, individuals who are unmarried, but have diseases that may affect their reproductive function in the future under Law No. 2001-93 of the Republic of Tunisia of 2001 (hereinafter — Law No. 2001-93) have the right freeze your gametes [30]. The new IVF federal law No. 5 of the UAE 2019 has also created strides for fertility preservation in the UAE by allowing unmarried individuals to freeze their eggs or sperm for a period of 5 years (extendable upon request). Collection of embryos for study and research, as well as gender selection and human cloning are strictly prohibited (Articles 374–375 of Law No. 18-11). Vice versa under the Decree «On stem cells» of the Hashemite Kingdom of Jordan in 2014 and the Law on Medical Ethics of 1994 of the Lebanese Republic 5 types of stem cells are allowed to be studied, among which one can find embryo cells, but it should be considered as a rather exceptional case among Arab states. Though, for instance, the new federal IVF

law No. 5 of the UAE 2019 has also permitted research on (un)fertilised eggs and sperm cells subject to receiving consent from the concerned parties and their spouses and the relevant regulatory health authority. The loosening of restrictions on research serves to stimulate medical research and innovation [3]. Germ cell donation, surrogacy and banks are prohibited (article 45 of regulation No. 238/2003). At the same time the Act of Units of Fertilization, Utero-Fetal, and Infertility Treatment of the Kingdom of Saudi Arabia contains criminal liability for violation of the above-mentioned rules: fines from 200,000 Saudi riyals to 500,000 Saudi riyals or 5 years in prison. Meanwhile the new federal IVF law No. 5 of the UAE 2019 introduces disciplinary sanctions, including written reprimands, written notices, fines not exceeding AED 1,000,000 for the fertility centre and AED 500,000 for their staff (min. of AED 1,000), temporary suspension of the fertility centre's licence (which cannot exceed 6 months) or their staff license ((which cannot exceed 1 year) and cancellation of their licence. Cross-border reproductive assistance and germ cells trade are prohibited by most Arab states. However, nowadays the UAE, the KSA and Egypt's share in global IVF services market has become 7.4% (1.1 billion US dollars) [3]. Storage of embryos and germ cells is not settled everywhere, however, for example, in Bahrain the term doesn't exceed 10 years in the case of gametes and up to 5 years in relation to embryos, however, under Moroccan legislation cryogenic preservation of germ cells is no more than 5 years without the right of renewals, unused embryos are forbidden to keep for any period. The Minister of Health of the Sultanate of Oman [17] and the president of the Supreme Council of the Union of United Arab Emirates [27] have established rules that allow the storage of sperm, eggs, and embryos and zygotes with annual renewal of biological material for 5 years. Under Law No. 2001-93 and new IVF federal law No. 5 of the UAE 2019, storage of embryos and gametes can be no more than 5 years with the possibility of extending the term once. It seems that the upper limit of the period of conservation of germ cells (and in some cases zygotes) is 10 years. At the request of the spouses, upon divorce or in case of the death of one of the spouses, the conservation of the biomaterial is terminated. Such legal regulation is typical for most of Sunni countries.

As for the other types of ART, one can refer to the laws of the Sultanate of Oman, where 40-year-old and older women are allowed to undergo preimplantation genetic diagnostics if there is a risk of serious genetic abnormalities. This is the only country from the above-mentioned list where access to PGD is legalized. Nevertheless, as practice shows, formally there is no ban on PGD and ASG, therefore they are actively used [27].

Challenges that face legislators and doctors

The more serious challenge is the risk of several pregnancies and the unsuccessful first attempt of IVF. The fact is that to increase the success of the procedure, doctors place several fertilized eggs in the uterus of the patient, however, this potentially jeopardizes both: the health of the mother and the unborn child. The legislation of few countries regulates this issue. For example, under the Law of 26/2017 of the Kingdom of Bahrain, only one embryo can be placed in the uterus of under-35-year-old women. In case of the threat to the mother's life, after three consultations with qualified specialists, it is possible to place up to three embryos for over-35-year-old women. The Sultanate of Oman sticks to more free approach, so that the maximum possible number of embryos is initially two and three for 40-year-old women (and older). The amendments to the federal law No. 11 of the UAE 2008 (as amended in 2009) and the new federal IVF law No. 5 of the UAE 2019 are liberal. Women under 35 years old are entitled to up to three zygotes for IVF, and in other cases up to four. It is curious that the Turkish Republic (hereinafter — Turkey) IVF allows taking into account the number of attempts to use this type of ART. At the first and second attempts only one embryo can be placed in the uterus of a woman, but if she is older than 35 years, then in any case law restricts up to two zygotes with the obligatory consultation of a doctor.

The roots of restrictions

As one can see, Muslim countries have extremely cautious approach to reproductive help, but since it is a way out of the growing demographic crisis, then why are most types of ART prohibited?

The entire Sunni community is organized patrilineally, so third-party reproductive assistance is seen as the destruction of special genealogical ties. The child, whom the surrogate mother gave birth to, loses their *nasab* without the milk of the genetic mother, and ignorance of it can lead to involuntary incest. Moreover, third-party reproductive help is considered as *zina* (“adultery” from Arabic), because third-party germ cells are introduced into the mother's body, violating the sacredness and sacrament of marriage. An illegitimate bastard born as a result of using this type of ART is called *walad az-zina* (“a child born from adultery” from Arabic) [11]. There is no a single procedure that would allow him to be recognized as a legal child. Most Sunni couples follow the instructions, although they have the opportunity to receive such a service abroad [12].

Despite the secular nature of the state, the situation is similar in Turkey, since approximately 80% of Muslims, who make up the vast majority of the

population of this country, practice Sunni Islam. The law adheres to a strict marital framework in accordance with the policy of patriarchal pronatalism, from which we can conclude that individuals who are not married or in the same-sex relationships, as well as those who wish to resort to the help of donor biomaterial, do not have access to ART [18, 19]. What is more, in 2010 the cross-border reproductive assistance (the search for donors abroad) was banned under the Turkish legislation [7].

However, the opposite attitude to ART can be seen in states where shia Islam dominates. The *fiqh* of the shi'ites, unlike the *fiqh* of the Sunni counties, has not stopped in its development and is adapting to the dynamics of social relations. The modified form of the principle '*aql* ("reason" from Arabic) — *istislah* ("aspiration for welfare" from Arabic) — is widely used to make independent judgments called *ijtihad* ("zeal, great effort" from Arabic), and is the key to understanding why shi'ites have access to more kinds of ART. Due to fundamental changes in circumstances, namely the emergence of brand new technologies in the field of reproductive assistance, the mujtahids are guided by the principle of *istishab* ("continuity of links" from Arabic), which allows to abolish or create laws.

A possible key to adjust the system

The Islamic Republic of Iran provides third-party reproductive assistance, dividing the concepts of *nasab* and consent between the donor and the recipient parents. Moreover, in order to legitimize a child born from a surrogate mother, the so-called *nikah mut'ah* or *sigheh* ("temporary marriage") is concluded [9], so he or she is not *walad az-zina*, but *laqit* (literally "abandoned" in Arabic, but in accordance with *nasab* one may say "innocent") is considered [23]. If a person finds and takes care of a such child, *laqit* is called *multaqit* ("taker up" from Arabic). *Mut'ah* (Arabic word) is concluded by an unmarried Muslim woman and a married or single Muslim man for a fixed period for a fixed fee. In the past this type of marriage was common for widows and divorced women who needed financial help. Now *sigheh* (the Persian word) has gained popularity in Iran precisely for the opportunity to gain access to a number of types of ART, which are *haraam* among the Sunni. The marriage is concluded for one or two days without witnesses and official registration. In order to preserve anonymity and protect rights a written agreement is possible.

In 2003, the Majlis Showrāe Esslāmī (Iranian parliament in Persian) enacted a gamete donation law that banned only sperm donation, since polyandry is not acceptable in Islam. Obtaining an embryo donor has a more complicated procedure, but it is considered legal if the sharia court approves a written

application. Nevertheless, cross-border reproductive assistance is prohibited, since in case of donation the parties can be only Iranian citizens [18]. There are a number of requirements for both parties: a donor and a recipient: valid forms of consent of both parties, evidence of mental and physical health, lack of dependence, incurable diseases, hepatitis or acquired immunodeficiency syndrome [15]. However, problems may arise in this case, as many Iranian couples prefer referring to a *mahram* (“a close relative” in Arabic) as a donor, which is a safer option for preserving *nasab*, but this increases the risk of real incest which is considered as a crime. However, if they do not resort to the family members’ help, but to a third party, they use the other concept called *ridā’a* (“fosterage” in Arabic). A woman who is breast-feeding is a *ummu bir-ridā’a* (“a milk mother” in Arabic) and can establish family ties [1].

In 1999, the Great Ayatollah, Sayyid Ali Hosseini Khamenei issued fatwa [25], by which surrogacy, donation of eggs and embryos were allowed. It is important to understand that he holds the title of *Marji’ taqlid* (“source to follow” in Persian), so that he is impeccable and cannot make any mistakes. In accordance with the provisions of fatwa, a surrogate mother cannot replace a biological parent, since the biomaterial belongs to the genetic mother, although in many Western countries this issue may be regulated in other way.

The problem still remains

In the case of sperm donation there is different situation. The father of the child is explicitly donor, since it is impossible to establish a family relationship with the recipient-parent. Due to this phenomenon problems with estate may arise, since the donor has the exclusive right to inherit the property of the child. Under no circumstances can the recipient-parent replace a donor, so that there is no way to justify the use of insemination of donor sperm. Most shia *fakih*s agreed that this is unacceptable. For this reason, the couple is inevitably subjected to ummah’s criticism, because the knowledge of all fathers of children is vital due to the dominating concept of *nasab*. Furthermore, gestational surrogate motherhood is acceptable if the biomaterial belongs to true parents whose *nasab* is to be preserved, so that surrogate mother is only a rear and has no rights upon the child she bears.

Yet under no circumstances will allow Sunni Muslims, who follow more harsh restrictions surrogate motherhood, artificial insemination and injection of gametes and zygotes got from the third parties. However, in the Lebanese Republic egg donation has recently been allowed, so lots of couples seek it there, justifying as if it was polygamy (at the same time, temporary marriage

does not take place, since it is forbidden by the Sunni Islam).

Other problems related to ART

Another controversial issue is a ban on access to ART (especially to cryopreservation of biomaterial) for single, unmarried individuals. Perhaps it can be explained by the low age of marriage (for women) in Muslim countries, although today it is rather exceptional cases: in Iran and Kuwait 15 years, in Lebanon 17 years and no limits in Saudi Arabia. On average the marriage age for men and women is 18 years old (permission to marry at an earlier age can be gained only via judge ruling). Nevertheless, it should not prevent from saving germ cells to have offspring in future, as there may be a variety of reasons why a person does not want to marry at this moment, but he or she is likely to have some health problems. There must be a choice.

Taking into account the largest legal reform in UAE history, the concept of marital birth is being questioned. The federal crime and punishment law decriminalizes consensual relationships outside of marriage and provides that such couples will be required to marry or singly or jointly acknowledge the child and provide identification papers and travel documents in accordance with the laws of the country of which either is a national, considering the applicable laws of that nation. Failure to follow rules incurs imprisonment for 2 years (the law has come into force on 2nd January, 2022). It's a matter of time whether it may adjust IVF law in future and apply to unmarried couples who seek for artificial reproductive assistance. If such unique situation took place, it would influence the whole approach [21].

The issue of state financing of ART is also significant because it guarantees control over this phenomenon and the safety of operations. The KSA, Egypt, the UAE, Lebanon and Iran provide partial state funding for reproductive assistance either through state hospitals or through certain forms of insurance in order to encourage couples having at least two children per family [10], but this trend is not observed in other Muslim countries.

However, a number of unsolved issues remain. For example, what should a doctor do if before the final stage of using one of the types of ART (for example, transfer of cultured cells in vitro) the husband dies and storage of gametes is formally considered impossible? Gamal Abu Al-Serour, an Egyptian doctor, considers it possible to give permission to continue the procedure, taking into account the circumstances of the death of the father [4]. However, this formally contradicts the letter of the law. It is also worth noting that any legislation of above-mentioned Muslim countries doesn't outline an upper age limit for a candidate (woman) applying for reproductive help. It is likely that the doctor

should decide, however, his instructions are advisory, in fact the couple may insist on the procedure risking the health of mother and child.

Discussion

In general, one can conclude that in most cases the laws of the Arab countries are not very modern, since the majority of them were adopted in the 2000s–2010s, and only in four countries they were updated in the last 3 years: the Kingdom of Bahrain and the Sultanate of Oman in 2017, the Kingdom of Morocco and the Algerian People's Democratic Republic in 2018. However, some Muslim countries, for example, Malaysia and Qatar even do not regulate these issues by laws. A number of states like Saudi Arabia, Malaysia and Jordan pay more attention to the study of embryonic cells, rather than access to assisted reproductive technologies. As for the shi'ite state, no matter how conservative Iran may seem due to real theocracy, it turns out to be the most progressive and liberal in relation to assisted reproductive technologies. Despite established ethical committees and professional bodies, changes are being adopted slowly. Religion has a great influence. Nevertheless, when it comes to a threat of the mother's and child's health, ethical issues concede scientific ideas. Most Muslim states' lawmakers work with doctors to meet the ummah's needs. Nevertheless, provided that access to ART has been possible since the 2000s, the demographic situation has not returned to the level of the 1970s, which indicates the need for further development in this direction regarding the Muslim countries' policy.

To sum up, we can say that the question is not about what the form of the technology is used, but whose biological material is used. If there is no third-party intervention (donation, sale or import and export of gametes and zygotes, surrogate motherhood), it does not matter which ART is used to achieve the result. Although it is worth mentioning that even gestational surrogate motherhood does not violate Sharia regulations taking into account shia *fakihs*' point of view, which seems logical, since it does not even violate the prohibitions which Sunni treat as obstruction. For this reason, perhaps some Arab countries should reconsider their critical attitude towards this type of ART. Regarding the choice of child's gender, which seems unacceptable in Islam, the majority of the *mujahids* conclude provided it is vitally necessary for medical reasons, it can be allowed individually.

Conclusion

There is a table which was drawn up by the authors in accordance with the data of legislation.

States/ ART+ situations	Alge- ria	Bah- rain	Egypt	Jor- dan	Iran	Ma- laysia	Leba- non	Mo- rocco	UAE	Oman	Saudi Ara- bia	Tuni- sia	Tur- key
Anonymous third-party assistance	-	-	-	-	-	+/-	-	-	-	-	-	-	-
Cryopres- ervation of embryos	?	5 years	+	?	+	?	?	-	5 years+	5 years	?	5 years	+
Cryopres- ervation of gametes	?	10 years	+	?	+	5 years +1	?	5 years	5 years+	5 years	?	5 years	+
Donation/ selling em- bryos	-	-	-	-	+	+/-*	-	-	-	-	-	-	-
Donation/ selling gametes	-	-	-	-	+	+/-*	+	-	-	-	-	-	-
Embryo banks	-	-	?	?	+	?	?	-	-	-	-	-	+
Gender selection	-	-	?	?	+	+	?	?	+	?	?	?	-
Research/ experiments	-	-	+	-	+	+	+	-	+	-	+	-	-
Artificial insemina- tion in vitro	+	+	+	+	+	+	+	+	+	+	+	+	-
IVF	+	+	+	+	+	+	+	+	+	+	+	+	+
Surrogacy	-	-	-	-	+	?	-	-	?	-	-	-	-
PGD	?	?	+	?	+	+	?	?	?	?	?	?	+
Culturing cells or em- bryos and transferring them in vitro	+	+	+	+	+	+	+	+	+	+	+	+	+
Lonely/ non-married couples	-	-	-	-	-	-	-	-	5 years+	-	-	+	-
Medical tourism	?	?	+	?	+	+	+	?	+	?	+	?	-

*Donation and selling both gametes and embryos are widely practiced in Malaysia, though law doesn't approve, but, as maxim says, everything which is not forbidden is allowed.

One can see that it is a common situation when laws establish the right of using ART in a negative way, emphasizing which types are prohibited. In

this regard a number of questions arise, which are resolved by the *mujahids* themselves issuing the relevant fatwas. In general, they follow the principle: what is not allowed is forbidden. However, for instance, in Malaysia and Egypt the laws are often violated since there is no liability other than ummah's condemnation. It would result in imprisonment and a fine to a doctor and a married couple in Saudi Arabia and Bahrain.

Despite the fact that the Muslim legal system is based on two main religious books: the Qur'an and the Sunnah, in which there is no reference to ART, by interpreting and by adapting laws and religious dogmas, the legislation of Sunni and Shi'ite countries is dynamic developing within their traditions.

Being convinced that it is possible to reach a consensus on the development of ART in Muslim countries without the intervention of Western ideas which seem to be contrary to the Qur'an, we considered one of the possible ways to solve the problem. Given that law is dynamically developing along with public relations and is steadily granting access to goods within the framework of the law, there is no need to turn to the radically conservative points of view, which are still held in some countries. In some states such as Malaysia, Iran, Bahrein, Oman, Tunisia and especially Egypt, the UAE there is a shift from a taboo to a cultural acceptability [3]. In our opinion, the purpose of laws is to reasonably restrict citizens, but at the same time to contribute to the development of society (*ummah*).

Conflict of interest information. The authors declare no conflict of interest.

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ВКЛАД АВТОРОВ

Все авторы сделали эквивалентный вклад в подготовку статьи для публикации.

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Поступила 14.07.2022
После рецензирования 10.08.2022
Принята 26.08.2022

Received 14.07.2022
Revised 10.08.2022
Accepted 26.08.2022