

The Legal Legitimacy of Research on the Human Embryo Conceived in the Context of Medically Assisted Procreation in Light of Current Legal Developments

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ABSTRACT

Research on the human embryo conceived in the context of medically assisted procreation, which is no longer the subject of a parental project, aims to develop the technology of medically assisted procreation. But the doctrine is divided on the question of the legitimacy of this research. The source of this division is the legal status of the embryo. Is it a thing or is it a person? If the embryo is a person, research on it is, in principle, prohibited; whereas if the embryo is considered a thing, this research is permitted. Medically assisted procreation raises many ethical, religious and legal problems, the most important of which is the fate of embryos conceived in the context of medically assisted procreation that are no longer the subject of a parental project. The question has arisen as to whether these embryos could be the subject of research.

Keywords: Bioethics, Legal status of the embryo, Legitimacy, Human Dignity, Human embryos, Medically assisted reproduction

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1. Introduction

Conducting research on human embryos created within the scope of medically assisted reproduction aims, among other things, to develop and improve the technologies used within the scope of these operations.

There are different points of view regarding the legal legitimacy of conducting research on human embryos. This question has two possible answers: the embryo is either a person or a thing. If the embryo is considered a person, then, in principle, research cannot be conducted on it. On the other hand, if the embryo is considered a thing, i.e., a biological substance or a group of human cells, then research can be conducted on it, but within specific controls (Manal Munajed, 2004, p.45). This difference has in turn been reflected in national legislation and international agreements in this field (Yasser Anwar Ali, 1994, p. 328). Jurists have been divided on the issue of conducting research on human embryos. The source of this division is their disagreement over the legal status of the embryo. So what is the embryo? The answer to this question determines the extent to which research can be conducted on the embryo (Saleh, 2016, p.23).

In fact, the human embryo has a unique biological status, as it is capable of growing and then transforming into a complex organism. Hence, the human embryo must be respected as a source of human life. But the question that imposes itself in this context is: What are the limits of this respect owed to the human embryo? The world's first test-tube baby, Louise Brown, was born in July 1978 in Britain; this birth was considered a tremendous scientific achievement and a medical breakthrough. Since then, medically assisted reproductive techniques have developed greatly, and other medical techniques have emerged that aim to treat infertility problems.

1.1. Research Problem

The problem of this research revolves around determining the legal status of the embryo. Is the embryo considered a person? Or is it a mass of biological material? If it is considered a person, is it considered so from the moment of fertilization? Or does it require some time to pass after fertilization in order for it to enjoy the status of a person? The answer to these questions determines the extent of the legitimacy of conducting research on human embryos from a legal perspective (Saleh, 2018, p.24).

1.2. Research Importance

The importance of this research appears from its novelty, as it is a modern topic, and it develops with the development of medical technologies used in medically assisted reproduction. Its importance also appears through its connection to the family and to all of humanity, and what may result from that in terms of discoveries that may contribute to preserving the safety of the family and the safety of humanity.

1.3. Research Objectives

This research aims to do the following:

1. Shed light on the most important recently issued laws and regulations related to the subject of this research.
2. Determine the legal status of the embryo.
3. Clarify the different legal positions on the issue of conducting research on human embryos.
4. Clarify the fate of embryos surplus to medically assisted reproduction that are no longer the subject of a parental project.

1.4. Research Methodology

This research employed a descriptive approach to present various opinions on research involving embryos created through medically assisted reproduction, an analytical approach to examine and discuss their arguments (clearly distinguishing between legal, ethical, and religious levels of analysis) and a comparative approach to examine legal stances across several legal systems, including Anglo-Saxon and Latin traditions.

Jurisdictions Selected:

France, the United Kingdom, Belgium, Switzerland, Germany, Italy, Austria, Ireland, the United States, Spain, Sweden, and Arab legislations in Syria, Tunisia, Morocco, Algeria, Bahrain, Saudi Arabia, and the UAE.

Selection Criteria:

1. **Representativeness of major legal families:** Latin system (France, Belgium, Spain), Anglo-Saxon system (UK, US), and Germanic system (Germany, Austria, Switzerland).
2. **Legislative pioneering:** Early adopters of assisted reproduction and embryo research legislation (e.g., France, UK, Sweden).
3. **Diversity of legal positions:** Jurisdictions with contrasting stances—from absolute prohibition to conditional or broad permissibility.

4. **Regional significance:** Arab countries with recent legislation (Morocco 2019, Algeria 2018, UAE 2019), alongside Syria (still relying on regulatory decrees).

5. **Cultural and religious representation:** Systems reflecting cultural and religious diversity, with a dedicated section on Islamic jurisprudence given its pivotal role in shaping Arab legal positions.

Limitations of Comparative Legal Analysis:

The constitutional traditions, legal cultures, and bioethical frameworks of the examined jurisdictions vary considerably, making direct comparison challenging. Differences in the embryo's legal status, constitutional protections of life, and the role of religious norms in legislative processes mean that findings from one jurisdiction cannot be mechanically transposed to another. This study acknowledges these limitations and treats the comparison as revealing underlying diversity in conceptions of human dignity and embryo protection, rather than establishing a single normative model.

1.5. Research Plan

We divided this research into an introductory section and two chapters, in addition to an introduction and a conclusion, according to the following plan:

- **Introduction:** It included the research problem, its importance, objectives, methodology and plan.
- **Preliminary Section:** Conducting research on human embryos at the international level.
- **Chapter One:** Prohibiting research on human embryos created within the scope of medically assisted reproductive processes.
- **Chapter Two:** Permissibility of conducting research on human embryos created within the scope of medically assisted reproductive processes.
- **Conclusion.**

2. Preliminary Section: Conducting Research on Human Embryos at the International Level

2.1. The Legal Status of the Embryo

Jurists remain divided on the legal status of the embryo, mirroring broader philosophical and moral debates. Some grant the embryo "person" status from the moment of fertilization, whether inside or outside the womb. Others contend that personhood cannot be biologically assigned until the embryo can no longer split into identical twins—around the thirteenth day after fertilization—and thus permit research on embryos prior to that stage.

Another point of contention is the embryo's potentiality. Opponents of research argue that because the embryo has the capacity to become a person, no action should hinder that potential. Proponents counter that potentiality does not confer actual status; otherwise, sperm and eggs would also require personhood protection, which is not the case.

Despite these disagreements, there is consensus on the need for embryo protection. The measures and level of protection vary, however, depending on the embryo's developmental stage and whether it is part of a parental project. In all cases, protection begins from fertilization, requiring appropriate conditions and adherence to good medical practices, with the key aim of preventing any experimental procedure that could harm the embryo or jeopardize its future development.

2.1.1. The Embryo Enjoys Progressive Protection

From the point of view of the proponents of this view, eggs and sperm are living organisms even before fertilization, and the fertilized egg gradually develops into a human being (L. Ravez, 2006, p.234). The embryo, in their view, enjoys great importance, but it is not absolute. The proponents of this view differ among themselves regarding the embryo's right to life. Some of them grant the embryo this right, while others believe that the embryo has the right to grow. The proponents of this view believe that the rights of the embryo increase during its growth. However, other rights such as the mother's right to health may prevail over them.

The proponents of the first approach believe that growth is a continuous process, so the rights of the embryo, especially the right to life, increase in proportion to its growth, and that it enjoys maximum protection from the moment the embryo becomes viable. However, the interests and rights of the other parties involved must be taken into account. In this case, research on the embryo may be permitted, if certain conditions are met. While the supporters of the second approach, similar to the first approach, believe that the rights of the embryo, especially the right to life, gradually increase during its development, but that it can only be fully recognized after birth. Therefore, the interests and rights of other parties concerned can be taken into account, and therefore the continuation of research on the embryo can be justified in some cases (Saleh, 2016, p.27).

2.1.2. The Embryo is a Thing

The supporters of this view believe that the embryo has no protection and has no right to life (P. Singer, Paris 1997, p.324). As a result, they permit research on the embryo, even if it could lead to its destruction. They also permit selection between embryos or fertilized eggs.

2.1.3. The Embryo is a Human Being from the Moment of Fertilization

The supporters of this opinion believe that the embryo must be considered a human being from the moment of fertilization, and therefore it cannot be attacked (H. Wattiaux et R. Renaer, Mai 1987), and it has the right to life. As a result, it is not permissible to carry out any action that would prevent the growth of the embryo. Since every embryo has the same value, any selection, in any form, between fertilized eggs or embryos is unacceptable. The supporters of this opinion reject conducting any research on the embryo that would lead to its destruction.

2.2. The Legitimacy of Conducting Research on Human Embryos at the International Level

2.2.1. International General Texts

There are several legal texts, at the international level, that guarantee the right to life in general, such as Article 3 of the Universal Declaration of Human Rights of 1948, and Article 1 of the International Covenant on Civil and Political Rights of 1966, which entered into force in 1976, and some regional human rights agreements (such as the European Convention, the American Convention and the African Convention...). In addition, Article 4 of the American Convention on Human Rights of 1969 stipulates the protection of life from the date of conception (Bassiouni, al-Daqqaq, Wazir, 1988, p. 34).

Despite this, there are international texts that have addressed the freedom of scientific research in general.

Article 12/b of the Universal Declaration on the Human Genome and Human Rights, adopted by UNESCO in 1997, states the following:

"(b) The freedom of research necessary for the advancement of knowledge is a freedom stemming from freedom of thought. The applications of research on the human genome, especially its applications in the fields of biology, genetics and medicine, should aim to alleviate suffering and improve the health of the individual and of humanity as a whole..."

Article 14 of the aforementioned declaration states that: "States should take appropriate measures to create intellectual and material conditions conducive to the free exercise of research activities, and to take into account the ethical, legal, social and economic implications of such research within the framework of the principles set forth in this declaration."

Article 10 of this declaration placed a fundamental restriction on the freedom of scientific research in the field of the human genome, as it states: "No research on the human genome, nor any applications of research, especially in the fields of biology, genetics and medicine, may take precedence over respect for the human rights, fundamental freedoms and human dignity of any individual or group of individuals."

2.2.2. Regional Texts (European Level)

There is no binding global instrument regulating the permissibility of research on human embryos. At the European level, the Council of Europe adopted the Oviedo Convention (1997) on human rights and biomedicine, yet it did not settle this issue. Article 15 affirms the principle of freedom of scientific research, subject to the convention's provisions and other legal safeguards protecting the human being. The explanatory report clarifies that this freedom is not absolute but limited by fundamental rights.

In some European states, research freedom enjoys constitutional status, whether explicitly through terms like "research" and "science," implicitly through "scientific freedom," or via state obligations to promote science. In others, it derives from broader protections of individual liberty, opinion, intellectual creativity, or academic freedom. However, experimental research cannot be equated with the expression of opinion.

On embryo research specifically, the Oviedo Convention left regulation to member states due to deep divisions, while imposing two conditions: prohibiting the creation of embryos for research purposes, and requiring rules ensuring appropriate embryo protection.

The European Parliament issued a decision on 7 September 2000 prohibiting the creation of surplus embryos. Additionally, the European Commission on Ethics in Science and New Technologies, in Opinion No. 15 (14 January 2000), stated that it is morally unacceptable to create embryos from donated gametes solely to obtain embryonic stem cells (Report of the International Bioethics Committee on the Use of Embryonic Stem Cells for Therapeutic Research, p. 4).

2.2.3. National Legislation

At the national level, legislation varies considerably on the beginning of human life and the legal status of the embryo. Two main trends can be distinguished:

First Trend: Maximum Protection from Fertilization

The embryo is considered a human being and must be granted maximum protection from the moment of fertilization. Proponents prohibit any manipulation of the embryo not directly aimed at its preservation, prohibit the creation of embryos for any purpose other than procreation, and exclude research on embryos or extraction of embryonic stem cells. Removal of totipotent stem cells is also prohibited. If voluntary termination of pregnancy is permitted, the level of protection granted to the embryo may appear disproportionate compared to that granted to implanted fertilized eggs.

Second Trend: Permissive with Protective Measures

Protective measures do not prevent the practices referred to above. Proponents hold varying views on pre-implantation genetic diagnosis, as embryo cells at an advanced stage are not fully capable. The number of embryos created during a treatment cycle may be unlimited, and non-transferred embryos may be preserved by freezing. Special protective measures ensure appropriate freezing/thawing methods and continuous liquid nitrogen supply.

Embryos no longer part of a parental project and not donated to another family may be subject to different protective measures than those still part of a project. Preservation by freezing is generally limited to a specific period, primarily in the embryo's own interest—not to remain frozen but to grow into a complete human being.

Some States permit donation of embryos no longer subject to a parental project for scientific research, including stem cell extraction. Protective measures in such cases ensure research objectives are appropriate and embryos are preserved under suitable conditions for the entire period necessary to achieve project goals, with research objectives strictly defined.

Effects on Research Rules:

Supporters of the first approach demand prohibition of research on human embryos, while supporters of the second approach permit research on embryos in early stages of development.

3. Prohibition of Research on Human Embryos

3.1. Prohibition of Research on Human Embryos in Some Foreign Legislations

Some foreign legislations prohibit research on human embryos. In some countries, this prohibition has a constitutional character.

3.1.1. Constitutional Prohibition of Research on Human Embryos

3.1.1.1. Prohibition in the Swiss Constitution

The new Swiss Constitution issued in 1999 prohibits resorting to medically assisted reproductive methods for the purpose of conducting research. Article 119/1 of this constitution stipulates that human beings must be protected from abuses in the context of medically assisted reproduction, as well as against genetic engineering in the human field. Based on this, Article 119/2 of the aforementioned constitution prohibits all forms of human cloning, as well as the donation of embryos. The Federal Law issued on December 18, 1998 and its amendments related to medically assisted reproduction regulates research on embryos. This law prohibits conducting research on existing embryos, as well as prohibiting the creation of embryos for the purposes of scientific research.

3.1.1.2. Prohibition in the Irish Constitution

The Irish Constitution of 1983, under paragraph 3 of Article 40, implicitly prohibits research on embryos, because this paragraph includes the right to life of the child to be born.

3.1.2. Legislative Ban on Conducting Research on Human Embryos

3.1.2.1. German Law

The German Embryo Protection Law of 13 December 1990 prohibits research on human embryos, tending to liken the embryo from its beginning to a person. Article 8 defines the embryo as a fertilized human egg capable of growth from the first moment of nuclear union. However, the law contains loopholes, notably the absence of a prohibition on importing stem cells into Germany, which researchers exploited to import embryonic stem cells.

In 2002, the German parliament authorized the import of genetic stem cells for therapeutic research after heated debates revealed deep divisions within the political class. The Central Stem Cell Research Ethics Committee examines and evaluates research projects to determine compliance with legal requirements and ethical justification. Research must allow for significant therapeutic progress and cannot be carried out with equally effective alternative methods.

3.1.2.2. Austrian Law

In Austria, the 1992 law on artificial insemination and embryo transfer (and its amendments) prohibits research on embryos. The law stipulates that cells capable of growth—fertilized eggs and embryonic stem cells extracted from them—may only serve medically assisted reproduction. Research, treatment use, and nuclear transfer are prohibited, as is any intervention on germ cells. Austria refused to sign the 1997 Oviedo Convention, considering its laws stricter and more explicit than the convention's provisions.

3.1.2.3. Italian Law

Italian law prohibits experiments on embryos in principle, permitting them only for therapeutic and diagnostic purposes to treat the embryo's health and development if no alternative methods exist. Law No. 40 of 19 February 2004 prohibits therapeutic cloning and the production of embryonic stem cell lines from surplus embryos from medically assisted reproduction. However, embryonic stem cell lines may be isolated from embryos resulting from voluntary termination of pregnancy.

The law permits the import and use of embryonic stem cell lines produced before July 2001, while prohibiting the use of lines produced after this date.

3.2. Prohibition of Conducting Research on Human Embryos in Some Arab Legislations

3.2.1. Prohibition by Virtue of a Legislative Text

3.2.1.1. Tunisian Law

The Tunisian Republic adopted Law No. 93 of July 8, 2001 related to reproductive medicine, which prohibits obtaining human embryos through in vitro fertilization or other techniques for scientific research purposes, according to the provisions of Article Nine of the aforementioned law. Article 13 of this law confirmed this prohibition, stating that:

"A human embryo cannot be obtained through in vitro fertilization or other techniques except within the framework of reproductive medicine and in accordance with its purposes as defined by this law."

3.2.1.2. Algerian Law

Algerian Health Law No. 18-11 of July 2, 2018 prohibits experiments on embryos that exceed the prescribed number and are fertilized within the scope of medically assisted reproduction operations, as stipulated in Article 374 of this law. Article 435 of the same law punishes anyone who violates the prohibition stipulated in Article 374 referred to above with imprisonment from ten to twenty years, and a fine of one to two million Algerian dinars.

3.2.1.3. Moroccan Law

Law No. 47.14 of 2019 on medical assistance in reproduction was issued in the Kingdom of Morocco. Article 7 of this law prohibits any research on human fertilization or embryos. This article also prohibits the creation of human fertilization or embryos for research purposes or for experimentation. Article 40 of this law punishes anyone who violates the provisions of Article 7 referred to above with imprisonment from ten to twenty years, and a fine from five hundred thousand to one million dirhams. Article 26 of the same law stipulates that, after the expiry of the five-year storage period, the fertilization must be destroyed, after the person in charge of the center or the medical assistance unit for reproduction notifies the spouses of this at least three months before the expiry of the period by registered letter with acknowledgement of receipt.

3.2.2. Prohibition by Virtue of a Regulatory Decision – Syrian Law

As for Syria, the legislator has not intervened to date to regulate the issue of medically assisted reproduction, although Syria is one of the first Arab countries in which IVF centers appeared, and the birth of the first test-tube baby in Syria dates back to the nineties of the last century. These centers were organized by virtue of regulatory decisions issued by the Ministry of Health. The first decision issued in this context was Regulatory Decision No. 18/T dated June 17, 2008. Article 9 of this decision prohibited medically assisted fertilization with the aim of obtaining fertilized eggs for the purposes of studies and research. After that, Regulatory Decision No. 2/T dated January 27, 2015 was issued, which regulates medically assisted fertilization. Article 12 of this decision stipulates that the director of the medically assisted fertilization center or department must destroy fertilized and unfertilized sperm and eggs if a spouse dies or the spouses divorce. Article 22 explicitly states that "assisted fertilization with the aim of obtaining fertilized eggs for the purpose of using them for commercial or industrial purposes or for the purpose of studies and research is prohibited." Article 26 also prohibits the donation of fertilized eggs. These provisions were amended again by virtue of Regulatory Resolution No. 18/T dated December 21, 2022. It can be concluded from the provisions of this regulatory resolution that it is prohibited to conduct research on human embryos created within the scope of medically assisted reproduction operations, even if they are no longer the subject of a parental project.

It should be noted that as of the date of this research (2026), no new regulatory decision has been issued amending the above provisions, and the prohibition remains in force.

3.3. The Islamic Legal Ruling on Research Involving Human Embryos Created Through Medically Assisted Reproduction

Jurists agreed that life begins after 120 days of pregnancy, at which point the embryo enjoys personhood status and rights, including the right to life. Their evidence is the hadith of Abdullah bin Masoud: *"The creation of each of you is gathered in his mother's womb for forty days as a drop of semen, then he is a clot for a similar period, then he is a lump of flesh for a similar period, then the angel is sent to breathe the spirit into him..."* (Al-Buti, 1999, p. 128).

Divergence on the Pre-Enoulment Stage (First 120 Days):

- **Some Hanafi jurists, Ibn Rushd (Maliki), and some Hanbalis:** Held that the embryo before ensoulment is not a living human being, so abortion is not forbidden even without a legitimate excuse.
- **Other Hanafi scholars:** Believed abortion is forbidden from the moment of conception.
- **Third group (Hanafi):** Held that the embryo is not a human being before 40 days, so abortion is permissible during this period (Al-Buti, 1988, pp. 76-77).
- **Majority of Shafi'is and some Hanbalis:** Held that abortion is not forbidden before the embryo is formed (appearance of features and organs), which occurs after 40 days. Their evidence is the hadith of Hudhayfah ibn Asid: *"When forty-two nights have passed over the sperm, God sends an angel to it who shapes it and creates its hearing, sight, skin, flesh, and bones..."* They also rely on linguistic evidence. Al-Shafi'i defined an embryo as only when human features appear (a finger, nail, eye, etc.), so the early sperm is not called an embryo and carries no sanctity or expiation (Al-Buti, p. 78).
- **Sheikh Al-Bouti:** The pregnancy product in its first days (before 40 days) enjoys only a simple plant-like or bacterial life, for which Islamic law established no rights or duties. The sperm itself enjoys simple life but has no capacity and is not subject to rulings (Al-Bouti, p. 206).
- **Imam Al-Ghazali:** Disagreed with the majority of Shafi'is, holding that abortion is forbidden from the moment pregnancy begins—when the sperm is ready to transform into a human being. He stated that the crime has levels: corrupting the sperm is a crime, becoming a clot is more heinous, breathing the soul is worse, and the most heinous is after birth alive.
- **Malikis:** Consider abortion forbidden at any stage once the sperm settles in the uterus (Munajjid, 2013, p. 306).

Islamic Fiqh Council of the Muslim World League (12th Session, Makkah, 1410/1990) – Abortion Ruling:

- **After 120 days:** Not permissible to abort even if deformed, unless continuing pregnancy poses a definite risk to the mother's life (permissible to avoid the greater harm).
- **Before 120 days:** If proven by a trusted medical committee that the embryo is seriously deformed, incurable, and would have a painful life, abortion is permissible based on parents' request.

Ruling on Research on Embryos (Muhammad Ali Al-Bar, 1994, p. 23):

- Research aimed at ensuring embryo safety and treatment is permissible while in the womb.
- Purely scientific research on embryonic growth may only be conducted on dead embryos (spontaneously discarded or medically aborted), with parents' prior consent.
- It is not permissible to attack a living embryo while signs of life are apparent.
- No surplus embryos should be kept; only three eggs should be extracted, fertilized, and returned to the woman who owns the egg with her husband's sperm.

Islamic Fiqh Academy (OIC–Jeddah) – Resolution No. 56 (7/6), 6th Session, 1990 – Embryos as Organ Transplant Source:

1. Not permissible to use embryos as organ sources except under controls:
 - o Abortion not induced for this purpose; limited to natural abortion or legitimate excuse. Surgical extraction only if necessary to save the mother's life.
 - o If the embryo is capable of continuing life, treatment should preserve it, not exploit it. If not capable, benefit only after death in accordance with Resolution No. 26/1/4.
2. Organ transplantation for commercial purposes is prohibited.
3. Supervision assigned to a reliable specialized body.

Excess Fertilized Eggs (Same Session):

1. Fertilization should be limited to the required number to avoid surplus.
2. If surplus occurs, they are left without medical care until life ends naturally.
3. It is forbidden to use a fertilized egg in another woman.

Islamic Fiqh Council – Resolution on Stem Cells (17th Session, Makkah, 2003):**Permissible Sources (Treatment or Permissible Scientific Research):**

1. Adults with their consent and no harm to them.

2. Children with guardians' consent, for legitimate interest, without harm.
3. Placenta or umbilical cord with parental permission.
4. Embryo aborted spontaneously or for a Sharia-permitted therapeutic reason, with parental permission.
5. Surplus fertilization from IVF projects, if found and donated by parents.

Forbidden Sources:

1. Embryo intentionally aborted without Sharia-permitted medical reason.
2. Deliberate fertilization between donor egg and donor sperm.
3. Therapeutic cloning.

The 2003 decision permits obtaining stem cells from surplus IVF fertilization if donated by parents. This contradicts the 1990 decision on excess fertilized eggs (No. 55/99/6), which required leaving them without medical care until natural demise. However, the 1990 decision did not explicitly address embryonic stem cells, as they were first isolated and cultured in 1998.

4. Permissibility of Research on Human Embryos

Sweden is the world leader in embryonic stem cell research, possessing the largest number of stem cell lines globally. Swedish legislation—the 1988 In Vitro Fertilization Act and the 1991 Act on Measures in Research or Treatment Involving Fertilized Human Eggs—permits research on embryos up to 14 days post-fertilization. The law requires destruction of the embryo after research concludes and prohibits its re-implantation. Research aimed at genetic modification is forbidden (Fiori, 2001, p. 324).

In 2001, basic principles governing stem cell research were established, permitting the use of human embryos only when no alternative exists and when the project is essential for advancing embryonic stem cell research. These principles stipulate:

- Embryos used must be non-viable for IVF or surplus after the five-year preservation period, with parental consent.
- Embryonic stem cells must be produced within 14 days of fertilization.
- Nuclear transfer research requires an ethics committee license and is subject to the same restrictions as research on fertilized eggs.
- Production of stem cell lines must comply with human tissue bank laws, granting donors the right to refuse use.
- Research may be conducted on stem cells extracted from surplus embryos with donor consent.
- Importation of stem cell lines is permitted.

4.1. In the Latin System

4.1.1. Spanish Law

Spain was among the first countries to pass special legislation on embryo research. In 1988, the Spanish legislator issued a law regulating assisted reproductive techniques, allowing research on embryos up to 14 days old with parental consent, while prohibiting the creation of embryos for scientific research purposes.

Until 2003, Spanish law prohibited the creation of embryos for research purposes. However, the law of 21 October 2003 permitted research on stem cells extracted from excess frozen embryos no longer subject to a parental project.

4.1.2. Belgian Law

In Belgium, the law of 5 November 2003 regulates research on embryos and embryonic stem cells. Article 3 permits research on in vitro human embryos subject to several conditions:

- Therapeutic goal or advancing knowledge in fertilization, infertility, transplantation, or disease prevention/treatment.
- Based on modern scientific knowledge and sound methodology.
- Conducted in an accredited laboratory linked to a university program, with university ethics committee approval.
- Carried out within the first 14 days of development (freezing period not counted).
- No equally effective alternative method exists.

- Supervised by a specialist physician or doctorate holder, with qualified personnel.

Article 4 prohibits in principle the creation of embryos for research purposes, with an exception allowing such creation only if the objective cannot be achieved using surplus embryos, and provided legal conditions are met. Permits induced ovulation in adult women with written consent and scientific justification.

Article 5 prohibits implantation of human embryos into animal wombs; creation of hybrid embryos; implantation of research-subjected embryos into human wombs (except for therapeutic purposes or non-invasive monitoring); creation of embryos, fertilized eggs, or stem cells for commercial purposes; and sex selection, except to eliminate embryos affected by sex-linked diseases.

Article 6 prohibits reproductive human cloning.

The law requires prior approval from both the local ethics committee and the Federal Commission for Medical and Scientific Research on In Vitro Embryos.

4.1.3. In French Law

4.1.3.1. The Ruling in the 1994 Laws

In 1994, the French legislator adopted Law No. 653/94 of 29 July 1994 (amending the Civil Code) and Law No. 654-94 of 29 July 1994 (amending the Public Health Law). The first concerns respect for the human body, genetic characteristics, protection of the human race, and protection of the human embryo. The second provides restricted embryo protection.

Article L. 2141-8 of the Public Health Law prohibits in principle the creation of in vitro human embryos for study, research, or experimentation. As an exception, a couple may consent in writing to studies on their embryos, provided the purpose is medical, does not constitute an assault on the embryo, and is approved by a specialized committee.

National Advisory Committee on Ethics, Opinion No. 53 (5 November 1997): Proposed replacing "experiments" with "research" in Article 8-L.2141, and stated that the law must distinguish between research on frozen embryos donated by their owners (permitted) and research on embryos destined for implantation (prohibited).

French Council of State, Report of 25 November 1999: Noted that continued prohibition of embryo research faces serious objections. Unlike in 1994, when research was limited to developing assisted reproductive techniques, its purpose has now expanded to developing treatments for currently incurable diseases.

4.1.3.2. The Ruling in the 2004 Law

French Law No. 800/2004 of 6 August 2004 on bioethics introduced significant changes. Article 25 added Chapter Five to Book One of Part Two of the Public Health Law. The law prohibits in principle research on human embryos, with exceptions:

- Studies that do not constitute an assault on the embryo, with family consent and legal conditions observed.
- Research on embryos or embryonic cells if it would lead to significant therapeutic progress, with no alternative method of similar effectiveness, within a five-year period from publication of implementing decrees by the Council of State.

4.1.3.3. The Ruling in the 2011 Law

Law No. 814/2011 of 7 July 2011 on bioethics amended provisions on embryo research:

1. Emphasized the prohibition of research on human embryos in principle, extending to embryonic stem cells (Article L.2151-5), with exceptions:
 - a. Studies that do not constitute an assault on the embryo, with family consent and legal conditions observed.
 - a. Research on embryos or embryonic stem cells likely to achieve important therapeutic achievements, with no alternative method of similar effectiveness (the five-year period was cancelled).
2. Prohibited: fertilization of embryos in vitro for scientific research; creation of embryos through cloning; creation of genetically modified embryos; and creation of chimeric or hybrid embryos from human and animal cells (L.1252-2 of the Public Health Law).

4.1.3.4. The Ruling in the 2013 Law, Amended by the 2016 Law

The French legislator intervened again in 2013, pursuant to Law No. 715/2013 of 6 August 2013. This law reflected the principle of prohibiting research on human embryos and embryonic stem cells, allowing it only in exceptional cases within a narrow framework.

Law No. 41/2016 of 26 January 2016 (modernization of the health system), under Article 155, paragraph 3, added a new paragraph to Article L. 2151-5 of the Public Health Code, permitting biomedical research conducted within assisted reproduction on gametes obtained for creating embryos, or on in vitro embryos before or after transfer for pregnancy purposes, provided each party in the family agrees.

4.1.3.5. Proposals of the National Ethics Advisory Committee – Opinion No. 129 (18 September 2018)

On the occasion of reviewing the Bioethics Law of 2011, the Committee issued proposals regarding research on surplus embryos:

1. Allow research on surplus embryos from medically assisted reproduction no longer subject to a parental project.
2. Prevent the creation of embryos for scientific research purposes.
3. Not subject research on embryonic stem cells to the same legal system as research on human embryos.
4. The new legal framework should be clear on: (a) creating genetically modified embryos; (b) creating chimeric/hybrid embryos; (c) the temporary limit for embryo implantation.
5. Reconsider conditions for conducting embryo research.
6. Conduct in-depth reflection on notification and approval procedures.

4.1.3.6. The Ruling in the 2021 Law

Law No. 1017-2021 of 2 August 2021 amended bioethics provisions. Article L. 2151-5 (as amended for 2021) stipulates:

- No research on embryos without consent of the parties concerned.
- Research protocols may be approved if: scientific importance is proven; research falls within a medical purpose or aims to improve human biological knowledge; it cannot be carried out without resorting to human embryos.
- Protocols are approved by the Biomedical Authority after verifying the above conditions.
- Embryos subjected to research for pregnancy purposes cannot be transferred; in vitro growth must be stopped on the 14th day of creation at the latest.

Article L.2151-9 (added in 2021): Any entity preserving embryos for research must obtain Biomedical Authority approval.

Article L.2151-10: No researcher, engineer, technician, doctor, or medical assistant is obligated to participate in any way in research on human embryos permitted under Article L.2151-5.

Article L.2163-6 (new version for 2021): Initiating research on a human embryo without prior written consent and authorization under Article L.2151-5, or failing to comply with legal provisions, is punishable by seven years' imprisonment and a fine of 100,000 euros.

4.2. In the Anglo-Saxon System

4.2.1. In English Law

The Warnock Report (1984) is considered the first important study on embryo research and its social, legal, and ethical consequences.

The English Fertilization and Embryology Act 1990 permits the creation of embryos for scientific research, particularly in reproduction and genetic disease diagnosis. Research must aim to: develop infertility treatments; advance knowledge on reproductive diseases and miscarriage; develop contraceptive techniques; and identify abnormal genes or chromosomes before implantation.

On 22 January 2001, the House of Lords adopted a law (previously passed by the House of Representatives in December 2000) allowing the creation of human embryos through cloning, while preventing their use in any other field (Belhaj Al-Arabi, Jordan 2012). The law requires that growth of cloned embryos be stopped on the fourteenth day.

In February 2002, a special committee in the House of Lords authorized research on embryonic and adult stem cells under certain conditions.

4.2.2. In American Law

In the United States, there is no federal law regulating embryo research; however, federal authorities prevent funding for such research. In August 2001, the US government restricted financial aid to laboratories to include only existing stem cell lines, prohibiting federal funding for research on new embryonic stem cell lines.

At the state level, laws vary widely: nine states prohibit research on human embryos. Private laboratories may conduct such research. Some states prohibit the sale of embryos but allow the sale of stem cell lines.

National Bioethics Advisory Commission (1999): Recommended federal legislation allow research on embryonic stem cells from surplus embryos.

US National Institutes of Health (August 2000): Adopted general principles regarding conditions for federally funded research.

18 July 2006: The Senate voted on a bill (previously passed by the House of Representatives in June 2005) to include federal funding for newly developed embryonic stem cell lines. However, the President used his veto power on 19 July 2006.

9 August 2001 – President George W. Bush's Decision: Federal funds would allow research on human embryonic stem cells, but only on existing cell lines. Conditions:

- Stem cells must have been extracted before 9 August 2001 from an embryo created for reproduction.
- The embryo shall not be used for its original purpose.
- Informed consent of donors.
- Donation shall be free of charge.

4.3. Legislation of Some Arab Countries

4.3.1. Saudi Law

The Law of Fertilization, Embryos and Infertility Treatment Units was issued by Royal Decree No. M/76 dated 13 January 2004. Article 13 permits units to conduct research on sperm, eggs, zygotes, and embryos after obtaining donor consent and Supervisory Committee approval. Another article punishes violations with: a warning, a fine of 20,000–200,000 riyals, imprisonment up to two years, and/or license cancellation.

A draft of a new law was prepared in 2021 but has not been approved to date.

4.3.2. UAE Law

Law No. 11 of 2008 (licensing of fertility centers) prohibited the use of fertilized eggs for research under Article 14, with penalties of imprisonment (2–5 years) and/or fines (200,000–500,000 dirhams) under Article 29.

Federal Law No. 7 of 2019 amended these provisions:

- **Article 13/1:** Fertilized eggs not implanted in the wife must be destroyed in cases of: death of a spouse, end of marital relationship, spouses' request, or expiration of preservation period without extension.
- **Article 14/2** (new provision): Centers are prohibited from conducting research on unfertilized or fertilized eggs and sperm except after the written consent of the parties concerned or spouses, in accordance with terms specified by executive regulations or ministerial decisions.

5. Conclusion

Scientific progress in medicine, genetics, and biology has produced new applications, including medically assisted reproduction. This study has shown that such procedures raise significant ethical problems, most notably determining the fate of surplus embryos no longer subject to a parental project. The root of these problems lies in determining the legal status of the embryo and the moment at which it is considered a person.

5.1. Findings

The main findings of this research can be summarized as follows:

1. **Ethical and religious divergence:** Ethics and religious scholars differed in determining the embryo's legal status, influencing the permissibility of research on surplus embryos, with positions ranging from absolute prohibition to full permissibility.

2. **Legislative reflection:** This divergence was reflected in national legislations, with some countries prohibiting such research and others permitting it under conditions.
3. **Constitutional prohibition:** In some countries, such as Switzerland and Ireland, the prohibition on embryo research is constitutional in nature.
4. **Permissive legislation:** Some legislations, such as English law, went further by permitting not only research on surplus embryos but also cloning of human embryos for scientific research.
5. **Scarcity of international regulation:** No specific global text regulates embryo research. At the European level, the Oviedo Convention (1997) did not settle the issue due to divergent positions among EU member states.
6. **Islamic legal positions:** Jurists in Islamic law are divided on the embryo's status. The Islamic Jurisprudence Council (OIC–Jeddah) issued a 1990 decision that surplus fertilized eggs should be left without medical care until natural demise. However, a 2003 decision permitted obtaining and using stem cells for therapeutic or permissible scientific research, provided the source is lawful—including surplus IVF fertilizations donated by parents.
7. **Syrian position:** The Syrian legislator has not yet regulated assisted reproduction, despite Syria being among the first Arab countries to establish IVF centers, governed by Ministry of Health decisions. The current governing instrument, Decision No. 18 T/ dated 21 December 2022, prohibits research on embryos created within assisted reproduction, even when they no longer form part of a parental project.

Answering the Central Research Question: Is Embryo Research Lawful?

Based on the comparative analysis, there is no uniform answer across jurisdictions. The lawfulness of embryo research depends entirely on the legal status accorded to the embryo in each legal system. Where the embryo is recognized as a person or potential person from fertilization, research is prohibited or severely restricted. Where it is considered a biological entity subject to progressive protection, research is permitted under strict conditions. The diversity of approaches reflects underlying differences in constitutional traditions, legal cultures, and bioethical frameworks. While international instruments (such as the Oviedo Convention) provide general principles, they leave specific regulation to national legislators, resulting in a fragmented international landscape.

5.2. Proposals

Based on the findings, the following proposals are made:

1. **Intervention by the Syrian legislator:** A legal framework for medically assisted reproduction should be established, including:
 - o Prohibiting the creation of human embryos for scientific research purposes.
 - o Prohibiting research on human embryos that leads to their destruction.
 - o Avoiding the creation of surplus fertilized eggs; in the event of surplus, they may be donated for research that ultimately contributes to advancing assisted reproduction technologies.
2. **International regulation:** UNESCO, through the International Bioethics Committee, should work toward developing an international declaration establishing a regulatory framework for medically assisted reproduction.

Broader Implications for the Proposed Legal Framework:

Future bioethical regulation should consider:

- **Proportionality:** Balancing embryo protection against potential therapeutic benefits.
- **Human Dignity:** Respecting the embryo's unique biological status without necessarily granting absolute personhood from fertilization.
- **Reproductive Autonomy:** Respecting parents' rights and choices regarding surplus embryos, including donation for research.
- **Scientific Freedom:** Permitting research with potential to alleviate suffering and treat incurable diseases, within a framework of ethical oversight and transparency.
- **Moving Towards Convergence?:** The comparative analysis suggests a gradual movement toward conditional permissibility in many jurisdictions, provided strict safeguards are in place (e.g., 14-day limit, prohibition on creating embryos for research, informed consent). This may indicate potential for future international harmonization around a "middle ground" approach.

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