

# THE CHALLENGES OF INFERTILITY AND THE ROLE OF ASSISTED REPRODUCTIVE TECHNOLOGIES: A PERSPECTIVE FROM THE REPUBLIC OF MOLDOVA

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## Abstract

Infertility is increasingly recognized as a demographic concern, given its potential influence on population dynamics. This study draws on qualitative data collected in September 2024 through interviews with experts and beneficiaries of assisted reproductive medicine in Moldova. The research highlights the gendered experience of infertility, revealing that women tend to experience higher levels of psychological distress compared to men. Assisted reproductive technologies (ART), particularly in vitro fertilization (IVF), provide essential solutions for infertility. However, access in Moldova is limited by high treatment costs, with state subsidies available to only a limited number of patients. Additionally, the study emphasizes the need for comprehensive psychosocial support alongside medical treatment. A key issue identified is the deviation from single embryo transfer (SET) protocols, as many couples prefer multiple embryo transfers despite the increased risks of multiple gestations. Legal and ethical concerns also arise regarding the cryopreservation of surplus oocytes and embryos, as Moldova lacks clear legislative guidelines on cryostorage duration. Despite these obstacles, advancements in reproductive technologies continue to offer promising solutions for addressing infertility. The study emphasizes the urgent need to strengthen both legal frameworks and support systems to ensure equitable access to ART and to safeguard patient welfare.

**Key words:** infertility, medically assisted reproduction technologies, in vitro fertilization

**JEL Code:** J11, J13

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## Introduction

Infertility is a condition that destabilizes couples, often causing emotional distress, social isolation, and a decline in quality of life. It has evolved from a private concern to a public health issue with significant demographic implications due to its rising prevalence. Global estimates from 2022 indicate that approximately one in six people experiences infertility at

some point in their lives, with a lifetime prevalence of 17.5% (World Health Organization, 2023). In the Republic of Moldova, data from the 2020 Generations and Gender Survey reveal that approximately 12% of individuals aged 15 to 49 reported difficulties conceiving within the preceding 12 months. Additionally, 9% of respondents indicated that they either certainly or probably could not have a child or another child (Rosenberg et al., 2022).

Assisted reproductive technology serves as a crucial intervention for couples experiencing infertility, enabling them to achieve parenthood. Its significance is amplified in the context of adverse demographic trends, particularly in the Republic of Moldova, where low fertility rates, an aging population, and depopulation pose significant challenges. As of 2023, the average maternal age at first childbirth in Moldova was 25.3 years, with 54.8% of live births occurring among women aged 25 to 34 (National Bureau of Statistics, 2024). This increasing trend of delayed childbearing is primarily driven by socioeconomic factors, including higher levels of female educational attainment, increased participation in the labor market, and rising income levels.

Assisted reproductive technology is increasingly influencing the fertility trends of high-income countries characterized by a pattern of delayed childbearing (Lazzari, et al 2023). Moreover, research highlights a reciprocal relationship between the postponement of childbirth and the utilization of ART, with each factor mutually influencing the other. Delaying childbirth emerges as a significant catalyst for the growing demand for ART. Conversely, the accessibility and efficacy of these reproductive technologies may also encourage women to increase the age at which they choose to conceive (Kocourkova, et. al. 2014).

## **1 Main results of the study**

This article presents the findings of a qualitative study conducted in September 2024 which engaged eight experts, including reproductive medicine specialists, gynecologists, representatives from the Ministry of Health and the Transplant Agency, alongside ten women who have experienced assisted reproductive medical treatments. The research utilized a semi-structured interview approach, guided by a comprehensive interview framework<sup>1</sup>.

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<sup>1</sup> The study was conducted as part of the project "Assisted Reproductive Medicine: Potential in Increasing Birth Rates" under the program "Stimulating Excellence in Research," implemented by the National Agency for Research and Development.

## **1.1 Social and emotional challenges of the infertility experience**

The intrinsic desire for parenthood is a universal trait across cultures. In the Republic of Moldova, children are integral to societal perceptions of family, leading to the view that childless families are often incomplete. Infertility is generally perceived as more psychologically distressing for women than for men, primarily due to social and familial pressures. Despite common assumptions attributing infertility largely to women, this perspective is not universally accurate.

Interviews conducted with women who have utilized ART reveal that the struggle with infertility is linked to considerable emotional distress and social isolation, significantly impacting their overall well-being. *"For me, discussing the issue of childlessness with my husband was a painful experience"* (Patient IVF). *"When my colleagues at work were talking about children, I would involuntarily start to cry and retreat to my office"* (Patient IVF).

## **1.2 Particularities of assisted reproductive medicine use in the Republic of Moldova**

In vitro fertilization is the most widely used assisted reproductive technology for couples facing infertility. It is accessible to couples and single women who have made an informed decision to pursue this option, provided they meet established medical criteria related to physical and mental health. The age limit for using autologous oocytes in IVF is 45 years, while the limit for donor oocytes is 50 years. Although some may view these age restrictions as barriers, the interviewed experts do not consider them prohibitive, as these are *"strict and align with the age limits within which a woman is considered fertile,"* (Expert in reproductive health). Studies in the field indicate that the probability of achieving pregnancy through assisted reproductive technologies decreases after the age of 35, while the rate of spontaneous miscarriage increases (Trappe, 2017).

Medical professionals emphasize the importance of parental age in relation to children conceived through IVF, noting that advanced parental age may significantly impact the well-being and development of these children. *"I encourage patients to reflect on how old they will be when their child turns 20. I am aware that I bear a certain responsibility for the child that will be born"* (Reproductive medicine specialist). Conversely, many believe that physicians should refrain from evaluating the impact of parental age on children's welfare and should not intervene in decisions regarding patients' personal and family lives. *"The physician should not be concerned with this aspect, as it is the woman's right to have children regardless of age"* (Gynecologist). International studies indicate that children generally prefer younger parents, citing concerns about premature parental loss and the psychological dynamics affecting the

parent-child relationship (Kocourkova, et al., 2022). Conversely, other studies suggest that the quality of parenting resulting from assisted reproductive technologies later in life does not negatively affect the child's well-being (Boivin, et al., 2009).

The safety of treatments is a fundamental aspect of modern medical quality. While IVF, like any therapy, may result in adverse effects, experts indicate that there are currently no national protocols governing its implementation in the Republic of Moldova. *"Clinics implement varying standards of practice, one clinic may adopt a specific approach, while another may follow a different protocol. Despite this variability, many aspects of medical practice, including treatment protocols, stages, and medications, are subject to clear regulations"* (Gynecologist). *"In our clinic, we adhere to international protocols; however, it is essential to develop our own protocols that are specifically adapted to the local context"* (Reproductive medicine specialist).

Multiple pregnancies represent a significant risk associated with assisted reproductive technologies, particularly IVF. They pose considerable complications for both mothers and children and incur substantial management costs. In Moldova, the legal framework permits a maximum embryo transfer of three for women under 35 and five for those aged 35 and older. Additionally, women under 35 with previous IVF failures may have up to five embryos transferred. As a result, some reproductive specialists may opt to implant multiple embryos to meet patient preferences, increasing the likelihood of multiple pregnancies and the associated health risks. *"I had three embryos implanted, all of which took. We did not give up on any of them; however, a tragedy occurred when my uterus ruptured, resulting in the death of one baby, and I had to undergo an emergency premature delivery. We were saved only because I was in the hospital at that time"* (Patient IVF). In cases of pregnancies involving more than two embryos, physicians frequently recommend embryo reduction. This decision can profoundly affect parents emotionally, as it is often viewed as a painful choice. *"I had five embryos implanted, all of which successfully developed. Later, I had to make the difficult decision to reduce the number to three. It was incredibly hard for me, but I understood that if I didn't do it, I risked losing all of them"* (Patient IVF). The American Society for Reproductive Medicine currently recommends the selective transfer of a single embryo for most patients under 35 years of age with a favorable prognosis. Experts interviewed in this study suggest that this practice could be adopted in Moldova, but only if infertility treatments were fully covered by the public funding system.

An important issue in assisted reproductive medicine is the management of unused oocytes and embryos, particularly in relation to cryopreservation. While the legal framework

in the Republic of Moldova has been recently updated, it inadequately addresses the minimum and maximum duration for embryo storage, as well as the disposition of frozen embryos in the event of a couple's death or divorce. Following an IVF program, patients may choose to cryopreserve embryos for future use, refuse further use leading to destruction, or donate them to another couple. Most patients do not pay attention to these aspects, typically choosing to have them destroyed after achieving pregnancy and giving birth, a view that aligns with the opinions of reproductive specialists. *"I know that the strongest embryos were selected. I don't know what happened to the rest, I suspect they did something... but they certainly didn't freeze them"* (Patient IVF).

While the legal framework in the Republic of Moldova permits both anonymous and non-anonymous donation of reproductive cells, the former is infrequently practiced due to specific challenges, mainly due to various associated costs. *"Before donating reproductive cells, donors must undergo a series of consultations and medical investigations, which can be costly. No one is willing to bear these expenses, that's why we currently lack such donors. This situation persists due to the absence of a clear mechanism for reimbursing these costs"* (Reproductive medicine specialist).

### **1.3 Difficulties in accessing assisted reproductive medicine in the Republic of Moldova**

The main issue identified by both experts and patients who have undergone assisted reproductive treatment is the **significant financial investment** required at both the diagnostic and treatment stages. The high costs pose a major barrier even for individuals with relatively high incomes, highlighting the inequalities in access to these specialized medical services. *"The most difficult and pressing issue was financial one, as I always had to find money for the next procedure. I spent over 26,000 euros"* (Patient IVF). The insufficient financial resources have caused some patients to interrupt their treatment and resume it after delays, leading to increased age and the loss of valuable time in the process of conceiving a child. This difficulty is exacerbated by the following factors:

- All procedures related to assisted reproductive medicine are currently conducted in the private sector, where the majority of reproductive specialists are employed. As a result, infertile couples and individuals often seek assistance directly from these specialists, bypassing public health services. Additionally, the commercial interests of private clinics may result in incomplete or biased information regarding available options. Patients may be encouraged to pursue expensive treatments without a comprehensive understanding of the associated risks, benefits, and alternatives.

- There is a significant lack of awareness and information about the possibility of accessing in vitro fertilization procedures through mandatory health insurance. This opportunity is not effectively communicated in the media, nor do family physicians adequately promote it to couples and individuals facing this challenge. *"I spoke with several patients at our hospital who conceived through IVF. When I asked them if they were aware of the government's support program, 80% responded that they were unaware of it"* (Gynecologist).

- The criteria for accessing IVF through mandatory health insurance are considered very strict. According to Ministry of Health Order No. 149 (2017), the medical criteria include primary factors (tubal infertility, endocrine issues like anovulation and polycystic ovarian syndrome, documented endometriosis, and unexplained infertility after five years of conventional treatments) and complementary factors (a normal uterus without pathology, normal ovarian reserve with anti-Müllerian hormone levels > 1.1 ng/ml, a body mass index of 20-25, and absence of extragenital diseases). Couples are eligible for IVF under mandatory health insurance if they meet one of the primary criteria and all complementary criteria. Most interviewed experts believe that the requirements for accessing IVF through mandatory health insurance are excessively strict. *"The regulations are quite complicated and burdensome; they could be significantly simplified"* (Gynecologist). *"Some criteria are exaggerated, particularly the one regarding body mass index"* (Reproductive medicine specialist).

- The process of obtaining IVF requires a significant amount of time. *"A person/couple need at least a year to complete all the required tests and investigations"* (Gynecologist). *"Starting the process of accessing assisted reproductive treatments through mandatory health insurance, including obtaining referrals and undergoing tests with a family doctor, can be very time-consuming"* (Patient IVF).

Another significant challenge is the **insufficient availability of counseling and advisory services** during the process of accessing assisted reproductive medical services. In-depth counseling is essential for patients to clearly understand the procedures, associated risks, and realistic success rates. Such guidance empowers patients to make informed decisions that reflect their personal values, particularly given the complexity of these choices. *"I have undergone four in vitro fertilization procedures in my country, switching clinics each time. Unfortunately, none of the clinics provided me with adequate information about the entire process. I often felt just like a client paying a substantial sum, with doctors lacking the time to address my questions. In contrast, during my last procedure two years ago in Kyiv, I*

was assigned a manager who spoke Romanian and was readily available to answer any questions, providing a much more supportive experience” (Patient IVF).

**The lack of psychological support services** is another issue identified by patients, as well as by the interviewed experts. Psychological support is crucial for managing stress and anxiety, as these interventions are often accompanied by profound emotional impacts due to the uncertainty of success, especially in repeated attempts, and the pressure to become parents. *”In my fourth pregnancy through IVF, I lost my babies at five months. I gave birth to them alive, saw them crying, but they did not survive because they weighed less than 500 grams. Can you imagine the pain I went through!?! We were alone with our grief. The doctor spoke to us for only 15 minutes, as time constraints did not allow for more. There was a complete lack of psychological support.”* (Patient IVF). Psychological support can assist patients in coping with grief and emotions following unsuccessful treatments, while also helping them develop effective strategies to alleviate anxiety. These services are essential, particularly for couples who lack support from their extended families. *”Parents expressed doubts about my success, insisting I would merely waste my money. As a result, after my first unsuccessful IVF attempt, I underwent 12 more procedures in silence, without sharing my experiences with anyone.”* (Patient IVF).

#### **1.4 Support from authorities for infertile couples**

According to the Regulation on the Organization of Assisted Human Reproduction Services within the Mandatory Health Care Insurance No. 149, dated February 23, 2017, infertile couples in Moldova are entitled to one free IVF procedure under their health insurance policy. However, it is important to note that the National Health Insurance Company of Moldova only partially covers the cost, excluding the price of medications, and the procedure is offered on an outpatient basis. The state-funded fee for in vitro fertilization is set at 31,729 lei (approximately €1,600), a figure that has remained unchanged since 2017. Many experts qualify this aspect as discouraging because *“what is offered does not currently cover even 50% of the IVF procedure”*. Even with the financial support provided by the state, there are individuals or couples who cannot afford to cover the remaining approximately 50% of the cost of the IVF procedure, including the cost of medications. This aspect is particularly important, as international studies have shown that in countries where the costs of in vitro fertilization are almost entirely covered by public resources, its utilization does not vary based on women's socioeconomic status. In contrast, in countries where the patient's out-of-pocket

contribution reaches 50% of the total cost, those with lower incomes are less able to afford the treatment, and therefore, do not have access to it (Keane, 2017).

There is also a municipal financial support program for assisted human reproduction in Chisinau for the years 2023-2025. According to this program, the amount of financial support for assisted human reproduction will not exceed 60,000 lei per couple (approximately 3,000 euros) to partially cover the expenses necessary for the IVF procedure. The funding for the municipal program is ensured by municipal budget sources and includes access to assisted human reproduction services for at least 100 couples in Chişinău.

In recent years, the number of requests from patients/couples for support has been low. As a result of this program, last year, 33 couples in Chisinau benefited from one of the 100 in vitro fertilization procedures covered by the municipal budget. An additional 40 IVF procedures were carried out through the national program, out of 60 available. ” *For this year, 2024, the National Health Insurance Company was supposed to cover the cost of 170 procedures. As of now (September), only 35 couples have had their files approved to benefit from a free in vitro fertilization procedure*” (Reproductive medicine specialist). Due to existing limitations, including the lack of full coverage for IVF-related expenses, many couples refrain from seeking state support. Another deterrent is the eligibility criteria, particularly the requirement for both partners to be state-insured. In the Republic of Moldova, significant migration and informal employment contribute to the lack of health insurance for many individuals.

## **Discussions and conclusions**

Assisted reproductive medicine is increasingly utilized, not only to treat biological infertility but also for social reasons, such as lack of a partner or delaying childbirth due to career or personal development. Despite its potential to become a key tool in addressing low birth rates, its contribution remains modest. In the Republic of Moldova, approximately 100 births annually, or 0.4% of total births, result from assisted reproduction technologies, compared to the European average of 2.6% (Lazzari et al., 2021). However, reproductive technologies cannot fully offset fertility declines or recover births lost due to delayed childbearing.

Some scientific findings suggest that in certain European countries, ART can have demographic significance when women utilize them at a younger age. Encouraging the use of ART earlier increases women's chances of fulfilling their reproductive goals, reduces age-related infertility, and improves the success rates of medical procedures (Kocourkova et al.,



2014). From a demographic standpoint, promoting ART solely to delay childbirth until advanced ages is less effective (Kocourkova & Fait, 2009). Therefore, it is crucial to promote ART use at younger ages by enhancing accessibility and raising awareness about the impact of age on fertility.

The increase in ART utilization is strongly linked to economic conditions, with a 1% rise in national GDP leading to an additional 382 ART procedures per million women of reproductive age. However, this number drops to 99 when adjusting for cultural and demographic factors (Präg & Mills, 2017). In the Republic of Moldova, where social norms and cultural values have minimal influence on ART acceptance, demographic factors are particularly crucial. Given the aging population and declining birth rates, economic growth alone may not be enough to boost ART use if the young population remains small or demographic decline continues.

The lack of national protocols for IVF procedures in the Republic of Moldova can result in inconsistent and inefficient practices across clinics. Therefore, it is crucial for the healthcare system to establish standardized protocols that ensure the quality and safety of treatments adapted to local conditions, safeguarding patients and optimizing outcomes. The substantial financial costs associated with diagnosis and treatment in assisted reproduction create significant barriers, limiting access even for individuals with relatively high incomes. Strengthened economic support is essential to ensure equitable access to assisted reproductive medicine for all, regardless of socioeconomic status. Limited awareness about the availability of in vitro fertilization through health insurance, coupled with insufficient media coverage of these options, contributes to the underutilization of available resources. Therefore, it is essential to promote assisted reproductive medicine and support programs for individuals facing infertility. The lack of adequate counseling and consultation services, as well as the absence of psychological support, results in a poor understanding of procedures and associated risks, leaving patients without the necessary tools to manage stress, especially after repeated failures. This underscores the need to improve counseling services and provide psychological support for those undergoing assisted reproduction treatments. Overall, a comprehensive strategy is required to enhance the quality of medical care and the support offered to infertile couples.

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