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Factors Influencing the Need for and Access to IVF Treatment

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Introduction

Infertility is defined as the inability for a couple to become pregnant after 12 months of regular unprotected sexual intercourse. Infertility can stem from an issue with the female reproductive tract, the male reproductive tract, or both.¹ Individuals struggling with infertility seek medical assistance for a successful reproductive course. However, there are many aspects outside of pathology that may encourage or deter an individual to elect for medical assistance such as in vitro fertilization (IVF). In vitro fertilization is defined as a medical procedure in which an egg is fertilized outside the body. The increased usage of IVF demonstrates the need for equitable access to IVF care. The purpose of this literature review is to consider all the factors and challenges involved in one's decision to utilize IVF.

Medical Factors Influencing the Need for IVF Treatment

Factors Affecting Females

- Ovulation Disorders
- Uterine/Cervical Abnormalities
- Fallopian Tube Damage/Blockage
- Primary Ovarian Insufficiency
- Endometriosis/Early Menopause
- Pelvic Adhesions
- Cancer

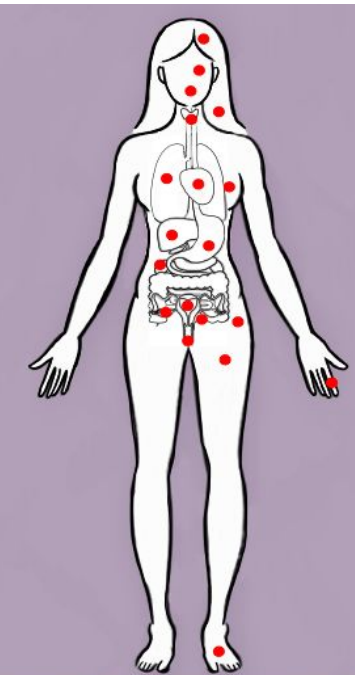
Both

- Age
- Tobacco use
- Alcohol use
- Being overweight
- Lack of exercise

Factors Affecting Males

- Abnormal sperm production/function
- Problems with delivery of sperm
- Overexposure to environmental factors
- Cancer

Figure 1. The factors increasing the risk of infertility in females, males, and both specifically.^{1,2}



Physiological

During pregnancy or with IVF treatment, a female's body undergoes a great deal of transformations including glucose^{3,4} and lipid metabolism impairment,⁴⁻⁶ stimulation of inflammatory response,⁷ gut microbiota reduction,^{4,8} and hormonal changes [Figure 2].⁹⁻¹¹ Post-IVF pregnancy, there are increased risks of ovarian disorders,¹² ectopic pregnancies,¹³ and cancers⁴ compared to non-post-IVF pregnancies. IVF treatment predisposes a person to intrauterine growth retardation¹² and autoimmune diseases relapses.¹⁴

Figure 2. Physiological Changes with Pregnancy and IVF. Red dots indicate areas of change seen during normal pregnancy and pregnancy with IVF.

Non-Medical Factors Influencing Access to IVF Treatment

RACE

Current literature suggests differences exist across races that affect access to IVF treatment. The most commonly impacted racial groups include African American and Hispanic women. African American and Hispanic women experience higher rates of infertility as compared to their White counterparts,¹⁵ but White women are more likely to seek out IVF treatment.^{16,17} African American and Hispanic women encounter significant disparities in accessing care which may account for the imbalance in IVF access among racial groups. These barriers include having to travel farther to reach IVF treatment centers,¹⁸ struggling to get time off work for treatment,¹⁹ and having lower incomes.¹⁸ African American and Hispanic women appear to have diminished access to IVF care compared to other racial groups.

EDUCATION

Education level is associated with the utilization of artificial reproductive technology. A 2021 study showed that 76% of women seeking fertility care had obtained a bachelor's or master's degree, while 19.1% had a professional degree.¹⁸ Women with a high school diploma or less experiencing infertility issues were only 33.1% likely to seek infertility care compared to those with college degrees, who were 80.8% likely.²⁰ Language and cultural barriers have been associated with increased challenges in accessing infertility care, particularly for Latino patients seeking care.²¹ Without a support system from the community, those experiencing infertility issues often experience anxiety and/or depression that may hinder them from receiving fertility care. Lower education level, language barriers, and cultural barriers are all associated with reduced access to fertility care.

INCOME

Due to the high costs of in vitro fertilization, access to infertility treatment may be limited to more affluent patients.¹⁸ A fresh cycle of IVF can cost about \$15,000, compared to a frozen transfer which costs approximately \$4,000.²² As discussed in the next section, many insurance policies do not cover the cost of infertility care or may limit the number of IVF cycles. Cost of IVF treatment in the United States is thought to be a determining factor influencing whether someone can pay for the standard treatment as opposed to substandard care or no care at all.²³ One study observed that 81.5% of those with an annual household income greater than \$100,000 were seeking fertility care.¹⁸ In another study, individuals experiencing infertility with household incomes below \$25,000 were nearly half as likely to seek infertility treatment compared to their peers with household incomes greater than \$100,000.²⁰ Ultimately, lower income is associated with decreased access to fertility care.

INSURANCE

Currently, 17 states mandate private insurance covers some level of fertility service²⁰ with many states including IVF in the mandate,²⁴ however, most insurances outside of these states exclude IVF from their plans due to perceptions of medical necessity.²⁵ Public and federally funded insurance plans do not cover infertility treatment, including plans such as Medicaid and those covering federal employees.¹⁸ In states which mandate IVF coverage, there has been an observed 2-3x greater utilization.²⁶ Overall, having insurance that covers some portion or all of IVF costs leads to an increase in access to and utilization of IVF services.



Figure 3. Insurance coverage of infertility by state.²⁷

Conclusion and Future Research

Although infertility is the main reason one undergoes IVF, many non-medical factors influence patient access to the treatment. Factors such as patient race, educational attainment, insurance status, and income level are some of the most researched factors shown to have a correlation with access to IVF treatment.

Due to the limitations of current literature, future research will be conducted in order to better understand the criteria under which people opt for IVF. In particular, the focus will be on assessing the factors involved in one's decision to choose IVF over other forms of fertility treatments.

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