



“Infertility: An International Health Problem.”

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ABSTRACT

Infertility is a significant global health issue that affects millions of individuals and couples worldwide. It is defined as the inability to conceive after one year of regular, unprotected sexual intercourse and can result from a variety of medical, environmental, and lifestyle factors. The prevalence of infertility has been rising in both developed and developing countries due to factors such as delayed childbearing, increased prevalence of lifestyle diseases (like obesity and diabetes), and environmental pollutants. Despite its widespread impact, infertility remains a sensitive and often stigmatized issue, which limits open discussions and access to care. This paper explores the global burden of infertility, examining its causes, socioeconomic impact, and the challenges faced by individuals seeking fertility treatment. Additionally, it highlights disparities in access to fertility services, particularly in low- and middle-income countries, where cultural, financial, and infrastructural barriers significantly hinder treatment availability. The paper also reviews advancements in assisted reproductive technologies and their potential to address infertility, alongside the ethical considerations surrounding these treatments. Addressing infertility as an international health problem requires a multifaceted approach that includes improved awareness, better access to healthcare services, and global collaboration to reduce the stigma and barriers to treatment.

Keywords: Infertility, International health problem

INTRODUCTION

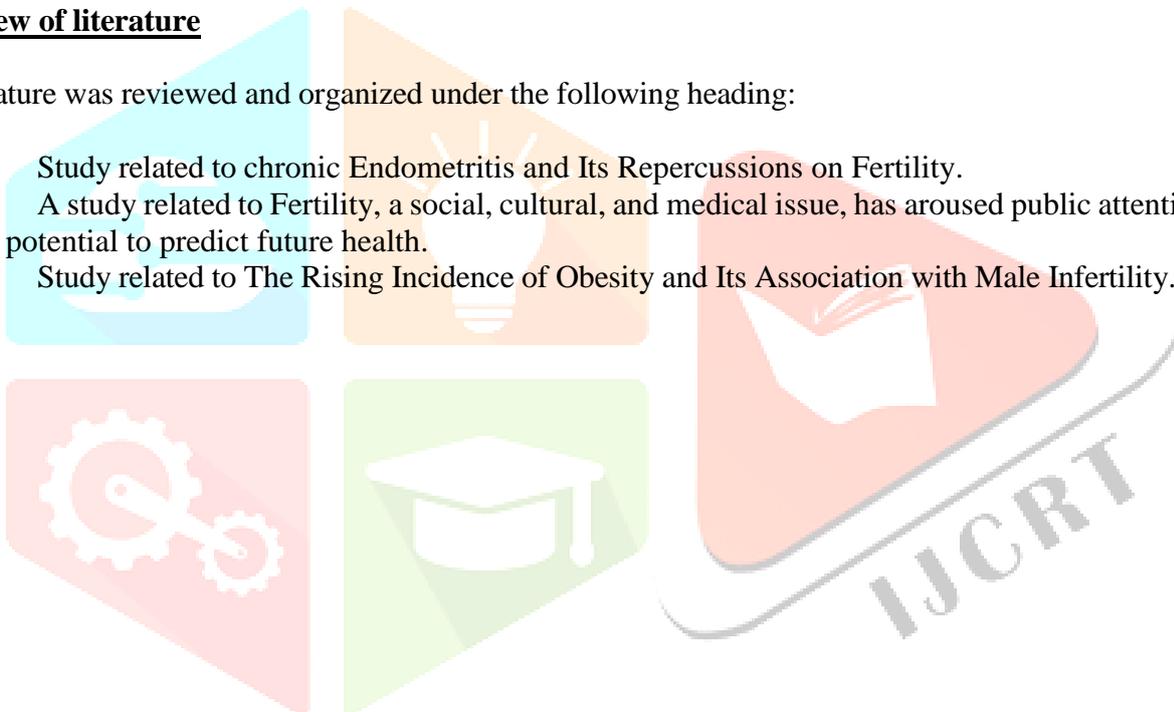
Infertility is estimated to affect as many as 186 million people worldwide. Although male infertility contributes to more than half of all cases of global childlessness, infertility remains a woman's social burden. Unfortunately, areas of the world with the highest rates of infertility are often those with poor access to assisted reproductive techniques (ARTs). In such settings, women may be abandoned to their childless destinies. However, emerging data suggest that making ART accessible and affordable is an important gender intervention. To that end, this article presents an overview of what we know about global infertility, ART and changing gender relations, posing five key questions: (i) why is infertility an ongoing global reproductive health problem? (ii) What are the gender effects of infertility, and are they changing over time? (iii) What do we know about the globalization of ART to resource-poor settings? (iv) How are new global initiatives attempting to improve access to IVF? (v) Finally, what can be done to overcome infertility, help the infertile and enhance low-cost IVF (LCIVF) activism?[1]. Reproduction is known as an essential human desire so that infertility may cause a great deal of psychosocial impairment. According to WHO, infertility is defined as a disease of the reproductive system in which pregnancy does not occur after 1 year of continued intercourse. Infertility is considered as a global concern which affects many aspects of life in both genders the rates even go up to 186 million people around the world. About 10 percents of couples are currently suffering from infertility in Iran.[2]. Infertility may work as a painful emotional experience. It can cause a lot of psychological issues including stress, anxiety, depression, diminished self-esteem, declined sexual satisfaction, and reduced quality of life. The resulted psychosocial issues affect the female gender adversely more than her spouse, especially in societies where there are prejudices against women. As such, an infertile woman may show a relatively high level of frustration and anger which affect her relationship with family, friends and even her spouse. Likewise, infertile women are more likely to develop mental illnesses, marital dissatisfaction, and impaired quality of life compared to the individuals of fertile group.[3]. According to WHO, quality of life is a concept used to describe development, growth, and well-being which reflects

individuals' perceptions of their position in the community as well as their goals, expectations, standards, and priorities. Attitudes toward women's infertility are often influenced by ethnic and cultural groups. In the eastern societies, the community mainly expects women to play a role as a mother. This will cause many psychosocial concerns if pregnancy does not occur for any reason. Therefore, more studies are required among eastern societies to reveal the impact of social, cultural and individual factors on an infertile woman's quality of life.[4]. Studying the quality of life among infertile women alarms the health authorities and subsequently let them spend a great deal of effort to help the infertile couples in one way or another. There are already a few studies on the quality of life among infertile women in Iran; although those are largely descriptive and just follow a cross-sectional method which lacks a comparison group to analyze the impact of infertility on different aspects of life. Most of these studies have been conducted using SF-36, a quality-of-life assessment questionnaire which evaluates the physical aspects of life quality. There are multiple ethnical groups living in the country which requires researchers to run further studies in different regions as well. This study basically aimed to investigate the effect of infertility on a woman's quality of life among population of Lorestan, Iran.[5]

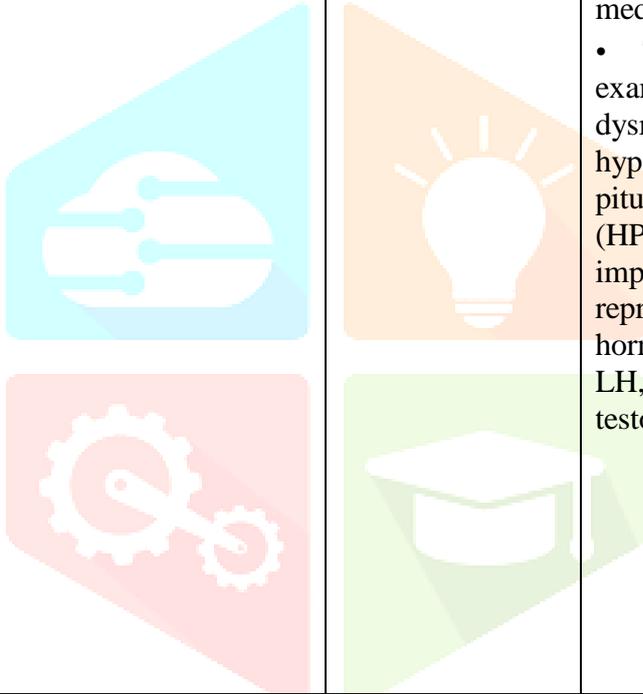
Review of literature

Literature was reviewed and organized under the following heading:

- 1) Study related to chronic Endometritis and Its Repercussions on Fertility.
- 2) A study related to Fertility, a social, cultural, and medical issue, has aroused public attention because of its potential to predict future health.
- 3) Study related to The Rising Incidence of Obesity and Its Association with Male Infertility.



Study Title	Name of the Author	Methodology	Major Findings	Conclusion
Chronic Endometritis and Its Repercussions on Fertility.	Juan J. Espinós, Francisco Fabregues, Juan Fontes, Juan A. García-Velasco, Joaquín Llácer, Antonio Requena, Miguel Á. Checa, José Bellver; Spanish Infertility SWOT Group (SISG)	- To assess the impact of chronic endometritis (CE) on fertility.- Followed Oxford criteria for evidence evaluation to minimize subjectivity.- Literature review to analyze the role of CE in repro.	- No clear consensus on whether CE should be included in the initial infertility assessment.- Routine screening for CE before assisted reproduction may delay treatment without clear benefits.- CE screening is advisable in cases of repetitive implantation failure (RIF) and pregnancy loss after IVF with viable embryos.- More randomized studies are needed to evaluate: - The effectiveness of antibiotic treatment for CE.	- Chronic endometritis should not be included in the initial infertility evaluation to avoid unnecessary lays in assisted reproduction treatments.- Screening is recommended for patients with repeated implantation failure and pregnancy loss to improve outcomes.- Further randomized clinical trials are needed to establish.
Impact of Chronic Endometritis on IVF Outcomes: A Systematic Review and Meta-Analysis”	Xiaoming Liu, Qiang Li, Yiming Zhao, et al. (2020)	Systematic review and meta-analysis of observational studies- Assessed the association between chronic endometritis (CE) and outcomes in IVF cycles (implantation rates, clinical pregnancy rates, etc.)- Evaluated the effect of antibiotic treatment on CE-related reproductive outcomes	Women diagnosed with chronic endometritis had significantly lower implantation and clinical pregnancy rates compared to those without CE- Antibiotic treatment for CE was associated with an improvement in IVF outcomes, suggesting a potential therapeutic benefit	Chronic endometritis appears to negatively impact IVF success rates. The findings support the consideration of screening for and treating CE—especially in cases of recurrent implantation failure. However, further randomized controlled trials are needed to confirm these benefits and refine clinical guidelines.

Study Title	Name Of The Author	Methodology	Major Findings	Conclusion
<p>The Rising Incidence of Obesity and Its Association with Male Infertility</p> 	<p>Biji Thomas George, Malay Jhancy, Rajani Dube, Subhranshu Sekhar Kar, Lovely Muthiah Annamma (2023)</p>	<ul style="list-style-type: none"> The study reviews existing research on the molecular mechanisms linking obesity and male infertility. It focuses on the roles of insulin resistance, hyperglycemia, adipokines (leptin, adiponectin, resistin, ghrelin), and inflammatory mediators. The study also examines the dysregulation of the hypothalamic-pituitary-testicular (HPT) axis and its impact on reproductive hormones (GnRH, LH, FSH, testosterone). 	<ul style="list-style-type: none"> Obesity contributes to male infertility through insulin resistance, hyperglycemia, and changes in adipokine levels. Disruptions in the HPT axis lead to decreased GnRH, LH, and FSH, causing lower testosterone levels and increased adiposity. Inflammatory cytokines (TNF-α, interleukins), sirtuins, and reactive oxygen species (ROS) negatively impact sperm production and quality. 	<ul style="list-style-type: none"> Obesity and male infertility are interconnected through hormonal and inflammatory pathways. The vicious cycle between hypogonadism and obesity worsens reproductive health outcomes. Addressing obesity through lifestyle changes and medical interventions may improve male fertility.
<p>The rising incidence of obesity has coincided with rising levels of poor reproductive outcomes</p>	<p>Biji Thomas George, Malay Jhancy, Rajani Dube, Subhranshu Sekhar Kar, Lovely Muthiah Annamma (2023)</p>	<ul style="list-style-type: none"> The study explores the molecular mechanisms linking obesity to male infertility. It reviews existing literature on insulin resistance, hyperglycemia, adipokines, hormonal dysregulation, and inflammatory mediators affecting reproductive health in obese males. 	<ol style="list-style-type: none"> Obesity contributes to male infertility through multiple pathways, including metabolic and hormonal disruptions. Insulin resistance and hyperglycemia negatively impact sperm function and reproductive hormones. Altered 	<ul style="list-style-type: none"> Obesity plays a critical role in male infertility through metabolic, hormonal, and inflammatory pathways. Addressing obesity-related hormonal imbalances and inflammation could improve reproductive outcomes in males. Further research is needed to

			<p>levels of adipokines (leptin, adiponectin, resistin, and ghrelin) influence testicular function.</p> <p>4. The hypothalamic-pituitary-testicular axis is disrupted in obesity, leading to reduced GnRH, LH, and FSH, ultimately lowering testosterone levels.</p>	<p>develop targeted interventions for obesity-induced male infertility.</p>
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CONCLUSION

Infertility is a significant international health problem affecting millions of individuals and couples worldwide. It has multifactorial causes, including genetic, environmental, lifestyle, and medical factors. Conditions such as obesity, hormonal imbalances, infections, and exposure to environmental toxins contribute to rising infertility rates. Beyond physical health, infertility has profound psychological, social, and economic impacts, particularly in societies where parenthood is highly valued. Addressing infertility requires a global approach, including improved healthcare access, early diagnosis, lifestyle interventions, and advancements in assisted reproductive technologies. Public health initiatives and education are essential to reducing risk factors and improving reproductive health outcomes worldwide.

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