

# Systematic Review of Female Infertility

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## Abstract

Infertility is a common reproductive health issue that deeply affects couples who experience it. It is defined as "a disorder of the reproductive system characterized by the inability to achieve a clinical pregnancy after 12 months or more of regular, unprotected intercourse." In recent years, the rate of infertility has significantly risen, affecting approximately 10-15% of the population. Conception relies on the fertility potential of both partners. Male factors account for around 32-40% of infertility cases, while female factors are responsible for 40-55%, and in 10% of cases, both partners contribute. The remaining 10% of infertility cases are unexplained, even with advanced diagnostic methods.

**Keywords:** Infertility, Endometriosis, Ovulation, Conception.

## Introduction

Infertility is an upcoming burning issue in current society and a big challenge for the medical field. Infertility not only indicates "failed conception" but, it also contributes as a very impactful factor for family disputes, socio-economic disturbances, and psychosomatic illnesses. Infertility is a disease of the male or female reproductive system defined by the failure to achieve a pregnancy after 12 months or more of regular unprotected sexual intercourse. According to Ayurveda, Vandhyatva (infertility) is a condition affecting the male or female reproductive system, characterized by the inability to conceive after one year or more of consistent, unprotected intercourse. The prevalence of

infertility in India is influenced by various factors<sup>1</sup>, including:

- **Lifestyle Factors:** Sedentary lifestyles, unhealthy diets, and excessive stress can contribute to infertility.
- **Environmental Factors:** Exposure to pollutants and toxins can impact reproductive health.
- **Medical Conditions:** Underlying health conditions like polycystic ovary syndrome (PCOS), endometriosis, and infections can affect fertility.
- **4.Cultural Factors:** Social pressures, delayed marriages and traditional practices can influence fertility rates.

## Background

Female infertility is a complex issue that can be caused by a variety of factors. It occurs when a woman is unable to conceive and carry a pregnancy to term. It can have a profound impact on

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individuals and couples, leading to emotional distress, social stigma, and financial strain. It can also have broader societal implications, affecting family structures and economic development

### Objective-

To review different causes of female infertility in brief.

### Discussion

Infertility can be caused by a variety of factors, affecting both men and women.

### Ovulation Disorders<sup>2</sup>

Irregular or absent ovulation can prevent fertilization. Ovulation disorders are a common cause of female infertility. They occur when the ovaries fail to release a mature egg each month or release an egg that is not of good quality. This can prevent fertilization from occurring.

### Types of Ovulation Disorders

1. Anovulation: ovaries do not release an egg at all.
2. Oligoovulation: ovaries release an egg infrequently.
3. Luteal Phase Insufficiency: lining of the uterus (endometrium) does not prepare properly for a fertilized egg to implant.

### Symptoms of Ovulation Disorders<sup>3</sup>

1. Irregular or absent periods
2. Difficulty conceiving
3. Weight gain or loss
4. Excessive hair growth on the face and body (hirsutism)
5. Thinning hair
6. Acne

### Fallopian Tube Blockages<sup>4</sup>:

Blockages in the fallopian tubes can impede the passage of eggs and sperm.

### Causes of Fallopian Tube Blockages :

1. Pelvic Inflammatory Disease (PID): Infections caused by sexually transmitted diseases (STDs) like gonorrhea and chlamydia leads to inflammation and scarring of the fallopian tubes.
2. Endometriosis: Endometrial tissue grows outside the uterus causes inflammation and blockages in the fallopian tubes.
3. Surgery: Previous pelvic surgeries, including those for endometriosis, ovarian cysts, or ectopic pregnancies, can damage or scar the fallopian tubes.
4. Ectopic Pregnancy: fertilized egg implants outside the uterus, often in the fallopian tube, it can cause scarring and blockage.
5. Hydrosalpinx: This occurs when fluid accumulates in the fallopian tube, blocking it.
6. Congenital Abnormalities: In rare cases, a woman may be born with blocked or malformed fallopian tubes.

### Symptoms of Fallopian Tube Blockage<sup>5</sup> :

1. Infertility
2. Pelvic pain
3. Abnormal bleeding
4. Pain during intercourse

### Endometriosis<sup>6</sup>

A condition where endometrial tissue grows outside the uterus can cause pain and infertility.

The exact cause of endometriosis is unknown, but there are several theories, including:

Retrograde menstruation: This occurs when menstrual blood flows backward through the fallopian tubes and implants on other organs.

- Genetic factors: Endometriosis is more common in women with a family history of the condition.
- Immune system dysfunction: Some research suggests that endometriosis may be related to an immune system disorder.

**Symptoms of Endometriosis<sup>7</sup>**

1. Pelvic pain: This is often described as a dull, aching pain that may worsen before or during menstruation.
2. Heavy bleeding: Periods may be heavier, longer and more painful than usual.
3. Painful intercourse: especially during or after menstruation.
4. Fatigue: Endometriosis can cause fatigue and other symptoms of chronic pain.

**Uterine Fibroids<sup>8</sup>**

These are non-cancerous growths in the uterus and interfere with fertility by -

1. Obstruction of Fallopian Tubes: Fibroids can grow large enough to compress or block the fallopian tubes, preventing the passage of eggs and sperm.
2. Distortion of the Uterine Cavity: Fibroids can distort the shape of the uterine cavity, making it difficult for a fertilized egg to implant.
3. Early Pregnancy Loss: In some cases, fibroids can increase the risk of miscarriage.

**Symptoms of Uterine Fibroids<sup>9</sup>:**

1. Heavy bleeding during periods
2. Pelvic pain or pressure
3. Frequent urination
4. Backache
5. Pain during sex

**Pelvic Infections<sup>10</sup>**

Pelvic infections, often caused by sexually transmitted diseases (STDs) like gonorrhea and chlamydia, can lead to infertility in both men and women. These infections can cause inflammation and scarring in the reproductive organs, which can interfere with fertility.

**Symptoms of Pelvic Infections<sup>11</sup>:**

1. Pelvic pain
2. Abnormal vaginal discharge

3. Painful intercourse
4. Fever
5. Fatigue
6. Lower abdominal pain

**Genetic Factors<sup>7</sup>**

These factors can affect the development and function of the reproductive organs, as well as the production and quality of sperm and eggs.

1. Chromosomal Abnormalities- Turner Syndrome: This condition affects females and is characterized by the absence of one X chromosome. It can lead to primary ovarian insufficiency and infertility.
2. Polycystic Ovary Syndrome (PCOS): While not solely a genetic condition, PCOS is often linked to genetic factors. It can cause infertility due to hormonal imbalances and the formation of cysts on the ovaries.

**Conclusion**

Female infertility is a complex issue that can be caused by a variety of factors. Determining the exact cause of female infertility often requires a comprehensive evaluation of previous medical history, Physical examination, Diagnostic tests, and Changing lifestyle factors. It's important to note that in some cases, the exact cause may remain unknown, even after extensive testing.

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