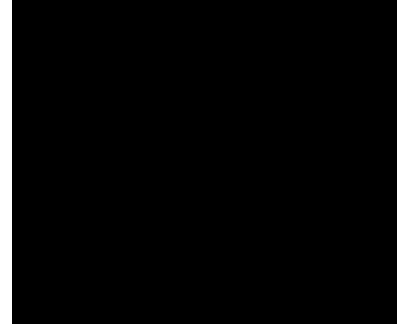


ROUNDTABLE DISCUSSION REPORT

**“Opportunities and Challenges for
Making Fertility Treatment
Accessible in India”**

11th JANUARY 2025
Crystal Ballroom
Radisson Blu Plaza, Mahipalpur,
New Delhi



EXECUTIVE SUMMARY

This report highlights the key insights and recommendations from the roundtable discussion on **"Opportunities and Challenges for Making Fertility Treatment Accessible in India"**, held in **New Delhi** on **11th January 2025**. The event, convened by **PAIR Academy**, brought together leading experts from medicine, public health, patient advocacy, and technology sectors.

Globally, infertility affects approximately 17.5% of the adult population—roughly one in six individuals—underscoring the urgent need for accessible, high-quality fertility care. Infertility is a significant health concern in India, affecting approximately 8% of currently married women, with the majority (5.8%) experiencing secondary infertility. The prevalence of primary infertility varies across states, ranging from 3.7% to 15%, and is influenced by factors such as age, lifestyle, and regional disparities. In the male population, infertility is commonly caused by issues such as low sperm count, poor sperm motility, or hormonal imbalances.

These statistics underscore the need for comprehensive reproductive health strategies in India, addressing both prevention and treatment to mitigate the growing burden of infertility among men and women.

This roundtable explored the opportunities and barriers in making fertility treatments more accessible across India. The discussions highlighted the urgent need for multi-stakeholder collaboration to address challenges such as high costs, uneven geographic distribution of clinics, limited awareness, and societal stigma. Participants emphasized leveraging technology, policy reform, and public-private partnerships to bridge gaps in accessibility and affordability.



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INTRODUCTION



SETTING THE CONTEXT

PURPOSE

Despite the proliferation of fertility clinics in India, access to Assisted Reproductive Technology (ART) remains uneven. A significant number of clinics are concentrated in urban centers, leaving rural and semi-urban populations underserved. Affordability is a major concern, with high treatment costs limiting access for many couples.

The Assisted Reproductive Technology (Regulation) Act, 2021, was enacted to regulate ART services in India, aiming to ensure ethical practices and improve accessibility. This roundtable discussion aimed to bring stakeholders together to explore barriers to access and identify innovative strategies to make fertility treatments more equitable.

BACKGROUND

According to the WHO, infertility is a global health issue affecting over 48 million couples worldwide. In India, societal norms and stigma disproportionately burden women, exacerbating their challenges in seeking treatment.

Infertility affects a significant portion of the Indian population. According to a study analysing data from the National Family Health Survey-5 (2019-20), the prevalence of infertility in India was 18.7 per 1,000 women who have been married for at least five years and are currently in union. This prevalence increases when considering shorter durations of marriage.

Factors contributing to rising infertility rates in India include:

- **Lifestyle Changes:** Sedentary habits, unhealthy diets, and increased stress levels.
- **Medical Conditions:** The prevalence of conditions such as Polycystic Ovary Syndrome (PCOS), endometriosis, and declining sperm quality in men contributes to infertility.
- **Societal Shifts:** Trends such as delayed marriages and parenthood, often due to career priorities, have been associated with decreased fertility.

FERTILITY TRENDS IN INDIA: RISING INFERTILITY AMONGST YOUNG COUPLES

India's fertility rate has experienced a sharp decline over the past several decades. In 1960, the average number of children per woman was 5.0; by 2015, this had dropped to 2.45 and is expected to fall below the replacement level of 1.7 births per woman by 2050. While this decline reflects improved healthcare, economic growth, and changing societal values, it has introduced challenges such as an aging population and workforce shortages. Simultaneously, infertility rates are rising, with approximately 10-15% of married couples, or 27.5 million couples, affected. This issue is gender-neutral, with both male and female factors contributing equally. The growing prevalence of infertility is not only a public health concern but also has implications for societal stability and economic development.

1

Lifestyle Factors

Stress from demanding careers, unhealthy diets, obesity, and sedentary habits adversely affect fertility. Additionally, excessive consumption of tobacco, alcohol, and recreational drugs further exacerbates fertility challenges. Additionally, delaying marriage and family planning due to career and financial priorities has become increasingly common among young Indians, leading to risks of complications like diminished ovarian reserve and reduced egg quality in women.

2

Medical and Biological Factors

Conditions such as Polycystic Ovarian Syndrome (PCOS), endometriosis, and thyroid disorders are common among Indian women and directly impact fertility. Male infertility is also on the rise, with only 30% of Indian men exhibiting normal sperm quality. Other contributors include untreated sexually transmitted infections (STIs) and genetic predispositions.

3

Environmental Factors

Exposure to pollutants, industrial chemicals, and hormone-disrupting substances in plastics and pesticides has significantly affected reproductive health. Urban pollution further compounds the issue by impacting both male and female fertility.

4

Cultural and Social Pressures

Infertility remains heavily stigmatized in India, with women disproportionately blamed. This stigma discourages timely medical intervention, delaying effective treatments. Gender biases and societal expectations place additional emotional and psychological strain on women.

IMPACT OF RISING INFERTILITY

Economic Implications: Infertility treatments, such as IVF, cost between ₹1.5 and ₹3 lakh per cycle, creating a financial burden for many families. Limited public funding and minimal insurance coverage exacerbate these economic challenges, making treatments inaccessible for middle- and low-income families.

Health and Emotional Toll: Infertility significantly impacts mental and emotional well-being. Women often face societal ostracism, anxiety, and depression, while men experience feelings of inadequacy and frustration. The lack of counselling and psychological support services compounds these issues, leaving couples without adequate emotional support.

Demographic Shifts: A declining fertility rate poses long-term demographic challenges, including an aging population and a shrinking workforce. These shifts may strain economic resources and social infrastructures, affecting the nation's growth and stability.

Rising infertility among young couples in India underscores the need for a multifaceted approach. Addressing lifestyle factors, raising awareness, implementing supportive policies, leveraging technology, and enhancing emotional support are key to overcoming these challenges and ensuring equitable access to fertility care.



"The rising prevalence of infertility among young couples underscores the need for awareness campaigns, lifestyle modifications, and early medical interventions."

– Col. (Dr.) Nikita Naredi

OVERVIEW OF FERTILITY TREATMENT IN INDIA

India has witnessed exponential growth in fertility treatments over the last two decades, driven by advancements in Assisted Reproductive Technology (ART), increasing awareness, and rising demand. With over 2,500 fertility clinics, India has become the second-largest market globally for ART cycles after the United States. Treatments such as In Vitro Fertilization (IVF), Intrauterine Insemination (IUI), Intracytoplasmic Sperm Injection (ICSI), and egg and sperm freezing are now widely available.

The market for fertility treatments in India is projected to grow from \$793 million in 2020 to \$3.72 billion by 2030, with a compound annual growth rate (CAGR) of 16.5%. This growth is fueled by private equity investments, technological advancements, and the implementation of the Assisted Reproductive Technology (Regulation) Act, 2021, which aims to standardize practices in the sector. However, fertility clinics are predominantly concentrated in urban centers like Delhi, Mumbai, and Bengaluru, leaving rural and semi-urban populations underserved.

COST OF FERTILITY TREATMENT IN INDIA AND IMPACT ON ACCESSIBILITY

India's fertility treatments are significantly cheaper compared to Western countries, attracting medical tourists. However, for many Indians, the costs remain prohibitive. A single IVF cycle costs ₹1-3 lakh, with additional expenses for procedures like egg freezing, genetic testing, and donor gametes. These costs often place fertility treatments out of reach for middle- and low-income families.



KEY COST DRIVERS:

- Advanced laboratory technologies and imported equipment.
- Shortage of skilled embryologists and ART specialists.
- Expensive hormonal medications and ovarian stimulation drugs.

Approximately 65% of India's population resides in rural areas, where healthcare spending prioritizes basic needs over specialized treatments. Insurance coverage for ART is minimal, leaving most patients reliant on out-of-pocket expenditures. Introducing subsidies and expanding insurance coverage could significantly enhance accessibility.



IVF SUCCESS RATES IN INDIA VARY BY AGE, CLINIC EXPERTISE, AND TREATMENT TYPE:

- Women under 35 years: 40–50% per cycle.
- Women aged 35–40 years: 30–35% per cycle.
- Women over 40 years: 15–20% per cycle due to reduced ovarian reserve and egg quality.

"Improving success rates requires advanced technologies like genetic screening, cryopreservation, and personalized care, alongside trained specialists and state-of-the-art labs."

– Dr. Leena Wadhwa

KEY FACTORS IMPACTING SUCCESS RATES:

- **Age:** Younger women have better outcomes due to higher egg quality and ovarian reserve.
- **Male Factor Infertility:** Poor sperm quality accounts for 40–50% of cases. Intracytoplasmic Sperm Injection (ICSI) has improved outcomes for such cases.
- **Type of Treatment:** Frozen Embryo Transfers (FET) yield better outcomes than fresh transfers due to enhanced embryo selection.
- **Clinic Expertise:** Experienced embryologists and advanced facilities improve success rates.
- **Lifestyle Factors:** Obesity, smoking, and stress negatively impact fertility, while a healthy lifestyle enhances success rates.

CURRENT STATUS OF ACCESSIBILITY FOR QUALITY FERTILITY TREATMENT IN INDIA

Infertility affects 10-15% of Indian couples, posing significant emotional, social, and economic challenges. Assisted Reproductive Technology (ART), including IVF, IUI, ICSI, and surrogacy, has revolutionized reproductive healthcare. With over 5,000 clinics nationwide, ART provides hope for many, offering success rates of 30-50% per IVF cycle depending on factors such as age and health conditions. Advanced options like egg and sperm freezing enable individuals to preserve fertility for future use. Despite these advancements, access remains inequitable across socio-economic and geographic spectrums.



"Economic disparities, compounded by high costs and limited public funding, make fertility treatments inaccessible for middle- and low-income families."

"The ART (Regulation) Act, 2021 is a significant step toward standardizing fertility treatments, but its implementation needs stronger enforcement to ensure ethical practices and patient safety."

– Brig. (Dr.) Prasad Lele

BARRIERS TO ACCESSIBILITY

Economic barriers are a major challenge, with a single IVF cycle costing ₹1.5 to ₹3 lakh. Many couples require multiple cycles, making treatments unaffordable for middle- and low-income families. Out-of-pocket expenditure dominates, as public funding and insurance coverage for ART remain limited. Geographic disparities further exacerbate accessibility issues. Fertility clinics are concentrated in urban centers like Delhi and Mumbai, leaving over 65% of India's rural population underserved and forced to travel long distances, incurring financial and emotional strain.

Quality and ethical concerns persist, with many clinics lacking regulation or standardized practices, putting patient safety at risk. The ART (Regulation) Act, 2021, aims to address these inconsistencies but faces challenges in enforcement. Social stigma also hampers access, with women often blamed for infertility, discouraging them from seeking medical intervention. Male infertility, which accounts for 40-50% of cases, is rarely discussed openly, perpetuating a culture of silence. Limited awareness about infertility and treatment options, particularly in rural areas, further delays medical intervention.

EFFORTS TO IMPROVE ACCESSIBILITY

India has introduced several initiatives to improve access to fertility treatments. The ART (Regulation) Act, 2021, establishes ethical guidelines and a national registry for ART clinics.[9] States like Maharashtra and Rajasthan have implemented subsidies for fertility treatments. Private clinics play a significant role, offering innovative solutions such as EMI-based payment plans and discounts for economically weaker sections. Corporate social responsibility (CSR) initiatives are also being leveraged to subsidize treatments for underprivileged couples.

Technological advancements are bridging access gaps. Telemedicine and mobile health platforms enable rural couples to consult specialists without traveling long distances. Low-cost IVF techniques and virtual consultations make treatments more accessible. Insurance coverage for ART is also gaining traction, helping reduce financial barriers.



GLOBAL COMPARISON

Globally, countries like Israel, Australia, and the UK offer robust public healthcare systems to support fertility treatments. In Israel, ART treatments are fully subsidized, ensuring universal access. Australia's Medicare program partially covers ART costs[10], while the UK's National Health Service (NHS) provides free ART services under specific conditions. In contrast, India relies heavily on private sector providers, with minimal public funding. Expanding public insurance schemes and adopting global best practices could significantly enhance accessibility in India, ensuring equitable fertility care for all.

THE ROLE OF TECHNOLOGY IN IMPROVING ACCESS TO FERTILITY TREATMENTS

INTRODUCTION TO TECHNOLOGY AND FERTILITY TREATMENTS

Infertility affects millions globally, with 10-15% of married couples in India experiencing challenges in conceiving. Assisted Reproductive Technologies (ART), such as IVF, ICSI, and egg freezing, have revolutionized fertility care. However, accessibility remains a major challenge, particularly in rural and underserved areas. Technology has become a vital tool in addressing these challenges, improving efficiency, affordability, and accessibility.

From telemedicine consultations to advanced embryo grading powered by Artificial Intelligence (AI), technological innovations are transforming fertility treatments. These developments are expanding access to underserved communities and offering couples more effective solutions to address infertility.

HOW TECHNOLOGY IS ENHANCING ACCESS TO FERTILITY TREATMENTS

- **Telemedicine and Virtual Consultations:** Telemedicine allows couples in remote areas to consult fertility specialists without the need for travel. Virtual consultations facilitate initial assessments, personalized treatment plans, and ongoing monitoring, significantly reducing time and financial burdens.
- **Artificial Intelligence (AI) in Diagnosis and Treatment:** AI is reshaping fertility care by enhancing diagnostic accuracy and treatment outcomes.



"AI-driven embryo screening and personalized treatment protocols are revolutionizing fertility care, improving success rates even for couples with previous IVF failures."

– Dr. Sonia Malik

KEY APPLICATIONS OF TECHNOLOGY IN FERTILITY TREATMENT INCLUDE:

- Sperm Quality Analysis: AI tools assess motility, morphology, and count with greater precision.
- Embryo Grading: AI algorithms evaluate embryos for viability and genetic health, improving IVF success rates.
- Personalized Protocols: AI-driven systems create individualized treatment plans based on a couple's health data.

CHALLENGES AND ETHICAL CONSIDERATIONS

- Ensuring data privacy is critical as digital platforms expand, requiring robust protocols to safeguard sensitive patient information and build trust. While technology has advanced fertility treatments, it must prioritize affordability and accessibility to prevent disparities. Gene-editing technologies, though promising, raise ethical concerns about unintended consequences and designer babies. With continued innovation, regulatory support, and equitable practices, technology holds the potential to make parenthood accessible to all.



KEY TAKEAWAYS

ECONOMIC CONSTRAINTS

Economic constraints are a primary obstacle to accessing fertility treatments in India. With procedures like IVF costing between ₹1.5 and ₹3 lakh per cycle, affordability remains a significant challenge, particularly for middle- and low-income families. Many couples require multiple cycles, further increasing the financial burden. The lack of substantial public funding and limited insurance coverage exacerbates this issue, leaving economically disadvantaged groups with limited options.

GEOGRAPHIC DISPARITIES

Over 65% of India's population resides in rural areas, but fertility clinics are concentrated in urban centers like Delhi, Mumbai, Bengaluru, and Chennai. This urban concentration forces rural couples to travel long distances, incurring significant emotional and financial costs. The uneven distribution of ART specialists and advanced technologies creates a substantial accessibility gap.

AWARENESS

Awareness about infertility, its causes, and treatment options remains alarmingly low, particularly in rural regions. Societal stigma surrounding infertility disproportionately affects women, often blaming them for a couple's inability to conceive. This stigma discourages couples from seeking timely medical interventions.

GOVERNMENT INITIATIVES

India has made significant strides in regulating fertility treatments through the Assisted Reproductive Technology (Regulation) Act, 2021, and the Surrogacy (Regulation) Act, 2021. These acts aim to standardize practices, ensure ethical compliance, and establish a national registry for ART clinics. However, implementation gaps remain a challenge.

TECHNOLOGY

Technological advancements have been a game-changer in improving accessibility and success rates for fertility treatments. Innovations like Artificial Intelligence (AI), telemedicine, and cryopreservation are breaking down traditional barriers.

RECOMMENDATIONS AND ACTION POINTS

1- POLICY INTERVENTIONS AND PUBLIC FUNDING

- Introduce subsidies and financial aid for ART to alleviate economic barriers.
- Expand Ayushman Bharat to cover fertility treatments, ensuring affordability for low-income families.
- Strengthen enforcement of the ART (Regulation) Act, 2021, and surrogacy regulations to standardize practices and eliminate unethical clinics.
- Promote partnerships between private and public sectors to fund research and enhance service delivery.

2- INFRASTRUCTURE DEVELOPMENT

- Establish fertility clinics in Tier 2 and Tier 3 cities to address geographic disparities.
- Develop training programs for healthcare professionals in reproductive medicine, addressing the shortage of skilled embryologists and specialists.
- Invest in advanced technologies to improve success rates and reduce costs, especially in underserved areas.





3. AWARENESS AND EDUCATION

- Launch nationwide campaigns to destigmatize infertility and raise awareness about treatment options.
- Integrate reproductive health education into school and college curricula to foster early awareness.
- Use digital platforms like YouTube, Instagram, and podcasts to educate the public on fertility-related topics.
- Create support networks and counselling services to address the emotional toll of infertility.

4. TECHNOLOGICAL ADVANCEMENTS

- Expand the use of telemedicine and virtual consultations to provide accessible care for rural populations.
- Adopt AI-driven innovations in embryo selection, treatment customization, and diagnostic accuracy.
- Enhance cryopreservation technologies to make egg and sperm storage more reliable and affordable.
- Promote automation in labs to reduce manual errors and operational costs, driving down treatment expenses.
- Use blockchain technology to secure patient data and foster trust in digital healthcare services.

5. HOLISTIC PATIENT CARE

- Address emotional challenges through psychological counselling and community-based support groups.
- Encourage male participation in infertility discussions to reduce gendered stigma and emotional burden.
- Incorporate workplace support policies, such as flexible schedules and medical leave for fertility treatments.
- Encourage holistic approaches that combine lifestyle modifications, medical interventions, and emotional support.



CONCLUSION

The advancements in fertility treatments, coupled with technological innovations, offer new hope to millions of couples facing infertility. India's Assisted Reproductive Technology (ART) landscape has grown exponentially, with improved success rates and expanded treatment options. However, significant challenges persist, including high costs, uneven geographic distribution of clinics, societal stigma, and limited awareness. Bridging these gaps requires a multi-pronged approach that combines policy reforms, financial support, technological integration, and public awareness campaigns.

Key initiatives such as the ART (Regulation) Act, 2021, telemedicine, and fintech solutions are already making strides in improving accessibility and affordability. Expanding insurance coverage, subsidizing treatments under public health schemes, and strengthening regulatory enforcement will further enhance equitable access. Technology, from AI-driven embryo selection to cryopreservation and digital platforms, continues to revolutionize fertility care by reducing costs and bridging rural-urban divides.

Addressing infertility demands collaboration among stakeholders, including the government, private sector, and civil society. Raising awareness, destigmatizing infertility, and fostering emotional support for affected individuals are equally critical. With sustained innovation and inclusive policies, India can ensure that fertility treatments are accessible, ethical, and affordable, enabling more couples to achieve their dream of parenthood while fostering a healthier, more balanced demographic future.