



Solving The Fertility Riddle: Decipher It or We Will All Be Devoured

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INTRODUCTION

Fertility rates have reached the lowest level in recent years all over the world, even in traditionally overpopulated nations such as China and India, with detrimental results in various aspects of our lives, including the economy, politics, environment, and society.¹ Infertility, on the other hand, is on the rise and may reach one in every six people worldwide, according to the report released by the WHO in 2023.² Infertility is defined as the inability to achieve a successful pregnancy after 1 year of unprotected intercourse and may be caused both by male and female factors and, in some instances, by a combination of both. According to the WHO, it is a global problem that affects millions; however, sadly, there is a lack of investment in research and funding, making access to proper treatment a privilege for very few people.²

UNDERSTANDING THE FERTILITY CRISIS

Explanations to the current situation may lie in the changing roles women have attained over the past 70 years, both in the workplace and society.¹ Increased access to contraception, education, and the never-

ending battle to narrow the gender gap have contributed to this new scenario in which women have the choice to either postpone pregnancy or decide against motherhood in order to pursue other roles.¹ Men, on the other hand, have also experienced relevant challenges such as job instability, and unemployment which adversely affects male fertility.³ Moreover, the decline in sperm parameters has been persistently observed all over the world and has sparked concerns in the medical community and the general public.⁴ Such a decrease in sperm counts may be related to a number of factors, including hazardous environmental exposures and climate change.⁵

In fact, family building has changed tremendously in the past years due to a number of factors, including the ever-increasing demands on the job market, affecting both men and women, which means young people must invest a great deal of time and effort to find and maintain a job, leaving little time to important aspects of personal life such as finding a suitable partner, building a family, and actually spending time with them. The current unstable post-pandemic world situation with wars and economic uncertainty aggravates the problem.²

In addition, many women are giving up motherhood even in societies where traditional values prevail, and having children is deeply tied to a woman's societal status.⁶ Reasons for women being without children are not clear, yet but may reflect a deep cultural and social change in the way women perceive themselves and pursue their goals and dreams, as well as the heavy burden many associate with childcare as there is a dearth of supportive policies for working mothers.⁷

Women who choose to balance career and motherhood do pay a price called the 'baby penalty' or 'motherhood penalty'.^{8,9} In fact, mothers apparently are expected to be less available and devoted to work as they need to care for their children.⁹ Consequently, these women are left with a Sophie's choice: their careers or their families. This usually results in reduced opportunities for career advancement as they are forced to work less hours, and some even abandon the labour force for good.¹⁰ In some areas, such as medicine, female physicians face huge challenges when it comes to juggling motherhood and the massive demands at work. Thus, quite a few end up either postponing or sacrificing family building so as to progress in their career.^{8,9}

Delaying pregnancy creates another problem as women have a fixed, non-renewable number of oocytes, which results in decreased chances of pregnancy and elevated odds of infertility and miscarriage in their late 30s and early 40s.¹¹ The reasons why the ovaries age so early are not completely understood. Women, however, often seem to be unaware of this and postpone pregnancy, not only to study and build a career but also because of economic instability, the absence of mother- and child-friendly policies at work, as well as the lack of a partner to share childcare responsibilities.¹¹ Moreover, Nobel laureate Claudia Golding has shown motherhood affects women's paycheques and further deepens the gender gap.⁷ Therefore, women should be granted support to face these challenges; otherwise, the gender gap will keep growing.

Social oocyte cryopreservation would be the alternative for those deciding to postpone pregnancy; but sadly, it is not available to all. In addition, there remain questions related to the adequate number of oocytes that should be preserved to obtain a live birth, as well as concerns regarding the risks involving pregnancies at later ages and offspring health. Social and ethical implications of freezing eggs, along with cost-effectiveness analysis and the development of public health policies, should also be taken into consideration.¹² There is no doubt, however, that women should be properly counselled and educated on ovarian ageing and the real efficacy of current assisted reproduction techniques to obtain a live birth according to female age.

For those facing infertility, life may be even harder as access to modern assisted reproductive technologies (ART) remains a privilege for a few.¹³ In low- and middle-income countries, the situation may be worse as the costs involved are high, insurance coverage is rarely available, and public ART options are scarce or absent.¹⁴ Moreover, the workplace is usually not supportive of those needing to undergo fertility treatments, which entail several doctor's appointments, ultrasounds, and medical procedures such as IVF, which may compromise their work schedule, thus increasing stress and job resignation.¹⁰ Data shows that almost half of the infertile couples may never seek any treatment, and around 25% will forsake it due to emotional stress.¹⁵

Although women frequently carry the heaviest burden as far as fertility treatment is concerned, one should not forget that males may account for up to 50% of the causes of infertility. Sadly, care for male reproductive health is often overlooked, receiving little attention in terms of funding and attention in the public fertility health agenda.¹⁶ Male age also appears to affect both fertility and the progeny's health, with increased chances of congenital anomalies as well as autism, schizophrenia, bipolar disorders, and paediatric leukaemia.¹⁷

Eliminating the inequities in reproductive healthcare is a herculean task, which fortunately has attracted the attention of

several entities, such as the International Monetary Fund and the World Economic Forum, as well as medical organisations such as the International Federation of Fertility Societies (IFFS), which launched the International Fertility Education Initiative to increase awareness on reproductive health and relevant issues such as ovarian ageing, preconception care, and preventable causes of infertility.¹⁸ IFFS has recently launched a global campaign called 'More Joy'¹⁹ to increase public awareness and encourage family-building policies. The aim is to involve companies and policymakers to increase the provision of affordable, accessible, and equitable fertility care, as well as provide support at work for those facing fertility treatments. IFFS has also released a consensus report discussing the reduced global fertility rates and its consequences on reproductive health and family-building as the number of children per woman has decreased far below the replacement level.²⁰

Following this lead, the Economist Impact has recently published a report, 'Fertility policy and practice: a Toolkit for Europe',²¹ which contains essential recommendations to beat the fertility crisis, including the need to develop a long-term plan, place investments in parenthood support and family services, as well as increase research and collaboration in all areas involved, from policymakers to communities and healthcare workers. Furthermore, gender equality at home and in the workplace is a key element in the fertility equation, which should be prioritised so that women can balance work and motherhood if they wish to do so. Although such reports should be praised, the document concentrates only on European countries, leaving out low income regions where fertility diagnosis and treatment are most needed.

Despite major technological advances in assisted reproduction, proper diagnosis and care are not available to anyone who might need it. In low and middle-income countries,

the direct costs of ART make it unaffordable to the majority who need it. Therefore, the implementation of public health policies that prioritise reproductive healthcare is of the utmost importance.¹⁴ Everyone should be entitled to decide if and when to build a family. Moreover, when ART is indicated, it should be available; however access to sophisticated ART treatments remains a barrier even in developed countries such as the USA and the UK. In America, almost 19 states have issued laws to increase fertility treatment coverage, but adequate access to care remains limited, mainly for underserved individuals. Thus, the American Society for Reproductive Medicine (ASRM) set up the Diversity, Equity, and Inclusion Taskforce to study and find solutions to reduce the inequities in fertility care.²² The pro-fertility wave has spread to countries such as Sweden and Japan, resulting in interesting family-friendly actions. While the Japanese are developing dating apps to boost marriage rates, Swedish grandparents may now be eligible to receive paid parental leave. Although such initiatives should be praised, there is much more to be done to overcome the fertility crisis.

CONCLUSION

In summary, considering all this evidence together makes it easy to understand why global fertility rates and live births have been dropping since 1950. Reasons to eradicate health inequities in the provision of reproductive care seem crystal clear if we are to respect basic fundamental human rights such as if and when to have a child and build a family. In the mythical Greek Sphynx tale, Oedipus saved the city of Thebes by solving the riddle and was crowned King. There is no doubt the current fertility riddle is more formidable, complex, and challenging, but it must be solved or populational ageing combined with plunging birth rates and increased infertility may create the perfect demographic and economic storm which will spare no one.

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