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Review Article

Declining fertility trends: a cause for concern

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ABSTRACT

Declining fertility, forecasted to reach 1.8 by 2100, has become a major concern in developed as well as developing countries. Low fertility rates have serious consequences in long run, posing a threat to social structures and economic stability along with creating burden on work force resulting in lack of labour and societal challenges. In various nations, fertility rates have fallen much below replacement levels, causing governments to fear adverse economic consequences. Concerned with shrinking population, governments throughout the world have responded to this by funding pronatalist policies like paid parental leave, tax breaks, and baby bonuses. Immigration policies have also been adopted by developed countries. However, the success of these initiatives is debatable, with research indicating impact to some extent on reversing the fertility reduction. It is important to recognize this as a complex phenomenon and impact of the pronatalist policies must be interpreted in light of the factors that underlie the wide-ranging and multifaceted disparities and influencing factors interacting among themselves. Strategies considering prevailing social norms, gender equality, women force participation and other contextual factors may lead to substantial improvement in increasing total fertility rate (TFR).

Keywords: Declining fertility, Total fertility rate, Pronatalist policies, Global population trends

INTRODUCTION

The World Health Organisation (WHO) defines the total fertility rate (TFR) as a widely used measure to determine the average number of children that a hypothetical group of women would have at the end of their reproductive years. This calculation assumes these women were exposed to the same fertility rates as a specific time period and were not affected by mortality. Over the last five decades, there has been an unparalleled reduction in global fertility patterns. On average, the number of live births per woman has decreased from nearly 5 in 1960 to 2.4 in 2021.[1] This decline is observed worldwide, even in economically disadvantaged areas in Asia, Latin America and Sub-Saharan Africa and was associated with increase in GDP per capita.[2] If this trend persists, projections indicate that the global fertility rate could further decrease to 1.8 by 2100.[3] While the decrease in fertility has been slower in the Arab states of North Africa and sub-Saharan Africa, it's predicted that these regions will also experience a decline.[4] It's important to note that these regional averages don't account for variations among individual countries. For example, in Asia, countries like Afghanistan, Iraq, and Yemen still have a fertility rate of around four births per woman, and above three in Pakistan. On the contrary, developed parts of East and Southeast Asia, such as Singapore, Hong Kong, and South Korea, have fertility rates below the replacement level.[5] The rapid decline in fertility rates is a significant societal change in human history. This narrative provides an overview of plausible reasons, consequences, initiatives that have been undertaken to address the decline and their outcomes.

METHODS

We conducted a literature search across academic databases, including PubMed and Google Scholar, using targeted keywords specific to the topic of interest. This search aimed to identify relevant peer-reviewed articles, reports, and policy documents pertinent to the subject. Studies were selected based on their relevance to socioeconomic determinants, cultural shifts, and policy impacts on fertility rates. We also reviewed the demographic and economic consequences of declining fertility, including potential impacts on population aging, labor market dynamics, and social services. Furthermore, a search of global initiatives, including fertility incentives, family support programs, and policy reforms, was conducted to understand their effectiveness and outcomes.

FINDINGS

What are the reasons for this rapid decline?

The main factors contributing to population growth are fertility rates and age structure dynamics. An increasing percentage of individuals in the reproductive age group results in a higher birth rate, even if the average number of children born per woman remains unchanged.[4] Some of the reported key factors influencing fertility are the level of education of girls and women, economic indicators like gross domestic product (GDP) per capita, the level of religiosity, the use of contraceptives and the implementation of family planning programmes.[6-9] The phenomenon of child bearing at delayed age and marginal increases in contraceptive adoption explains the rapid decline in fertility rates observed among the richest wealth quintile.[10]

A study among 136 countries suggested that reduction in TFR during 1970-99 in poor countries were not were not caused by economic growth (in terms of GDP) but increasing use of modern contraception.[11] A review on contributing factors in reduction in TFR in Middle East and North Africa reported govt's direct support policies for family planning programs, contraception use, women empowerment through employment and weakening of traditional norms, marriage at older age, high rate of inflation as well as high cost of child raising, increased GDP per capita, education levels, urbanization and restrictions for polygamy to be responsible for the decline.[12] The best documented example of phenomenal fertility decline from very high to low fertility is in Iran. A paper by Abbasi-Shavazi and McDonald in 2006 attributed this to the likely role of greatly improved female education.[13] In the historical context of the 1950s, it is noteworthy that women in Iran possessed a relatively limited average of three years of formal education, while simultaneously nurturing an average of seven offsprings. But by 2010, the average number of births per woman had dropped sharply to 1.8, and women had an average of nine years of schooling.[13]

An examination of global trend reveals a strong negative relationship between TFR and factors such as educational achievement, prevalence of contraceptive use, and GDP per capita. In Europe, a contrasting trend emerges, with TFR showing an upward trend in alignment with higher education but a negative relationship with religiosity.[2] Moreover, a complex interaction is observed between these determinants of TFR with education having a positive correlation with per capita GDP but, a negative correlation with religiosity. Reliogisity exhibits a negative correlation with contraceptive prevalence and per capita GDP.[2] Beyond the biological realm, cultural, healthcare-related, social, and political dimensions emerge as significant contributors to the discernible trajectory of falling fertility rates.[12] In Asia-Pacific region, women's participation in formal labour and expectations regarding household work, long and inflexible working hours, absence of quality child care services, economic pressure owing to intensive parenting are the reasons cited for low fertility levels.[14] In Bangladesh, one of the poorest countries in Asia, TFR has gone down owing to female education along with desire to have a small family.[15] The countries of Latin America showed class wise distinction with respect to determinants of TFR levels. The lower class didn't have access to modern contraceptive methods but women participation in labour force and sterilisation were observed. On the other hand, upper class had educational attainment for women.[16] In Africa, southern part reported TFR relatively lower as compared to whole continent which was attributed to contraceptive use.[17] Varied factors including education, contraception, desire to have small family, intense parenting, weakening of traditional norms, housing cost etc. were involved in decline of fertility a cross the world.

Consequences of declining fertility trends

Declining fertility will invert the population pyramid with large old aged population and much lower working population leading to economic ramifications.[3] Forecasted fertility rate will have economic, social and environmental consequences. The fiscal sustainability of national health insurance and social security programmes will be challenged in countries with slower economic growth and rising proportion of the retired population to those who are still working.[18] High fertility rate and economic growth has a negative relationship, especially in poor countries with decreasing TFR.[19] It has been acknowledged by scholars that economic growth as a result of fertility decline would not be enough for a developing country to attain the level of developed ones.[20] Over the period, per capita income will reduce and living standard will be low.[21]

Reduced fertility would lead to weakened social capital.[22] Social welfare schemes including pensions, health care and long term care comes largely from contribution of current population. Therefore, impending times will see high deficits.[21] Lack of sibling support and parental care are one of the impending societal issues which cannot be easily managed, unlike economic costs. Declining fertility means

there will be fewer families and smaller families.[22] Parenting requires community participation, so fewer parents indicate less community engagement. In addition to this, declining fertility will have negative impact on minority groups or ethnic groups. This may lead to ethnic nationalism, resulting in coercive pronatalism and human rights abuse.[23] Decreasing fertility trend will have a beneficial effect on environment owing to reduced consumption of natural resources and less environmental change.[21] Continuing to have a TFR lower than the replacement level will have environmental and geopolitical consequences.[18] This would mean "less carbon emission, less stress on global food systems, and a lower likelihood of transgressing planetary boundaries.[12] However, more profound and negative consequences of declining fertility will outweigh the positive effects.[18]

Examples of global strategies to address declining fertility trends

Declining birth rates in developing and developed nations have forced governments to reconsider fertility-boosting reforms. Although immigration as a solution to the demographic problem is appealing, increasing the birth rate will provide more stable and predictable results over the long term.[24]

Many governments throughout the world have resorted to family-supporting policies. Family policies encompass “everything that government does to and for the family” and include "health care provision, education policies, housing regulations, labour market regulations, provision of assisted reproduction or taxation policies".[25] Maternity protection policies are among the oldest and most fundamental elements of family policies in European societies, despite varying modes of implementation. While Switzerland, Austria, and Germany introduced mandatory maternity and care leaves for working women, France pursued a policy that supported all women as mothers, made motherhood compatible with wage labour, and helped women reconcile work. Maternity leaves and protective labour legislation for women only were met with greater scepticism in Scandinavian nations due to the possibility that they would increase gender segregation in the labour market and undermine efforts to achieve gender equality.[26]

During the 1970s and 1980s, parental leave programmes were implemented in many other nations, with the majority of nations providing some form of payment during parental leave.[27] Over the past two decades, parental leave reforms have undergone significant changes with the initial scope being reserved exclusively for mothers and later expanded to include monetary benefits and paternity leave.[28] The dimensions of family policy varies globally and include a variety of measures, such as financial benefits, support for larger families, childcare provision, mothers' employment, and greater flexibility in balancing work and parenthood. While Nordic countries have been extremely proactive in providing continuous and strong support for working parents with young children countries such as the United Kingdom, the United States, Australia, and New Zealand rely primarily on cash benefits to assist low-income families. Countries in Continental Europe (i.e. Austria, Germany, and Switzerland), have historically implemented policies that promote division of labour within family and provide financial assistance to families with children. This has gradually evolved into a greater emphasis on women's employment and work-family balance. Denmark, Sweden, the UK, Finland and France advocated for comprehensive public childcare support and has high spending on childcare as a percentage of GDP.[21]

Singapore, in Southeast Asia, has shifted from an anti-natalist to a selectively pro-natalist stance (in an attempt to reverse demographic decline) by involving intensely in provision of low cost and high quality formal child care along with providing "baby bonuses" for second and third child and covering the cost of paid maternity leave for third child.[29] Countries such as Japan and South Korea have taken drastic measures to halt this decline. South Korea's Explicit Family Policy is all about balancing work responsibilities and family caregiving through multiple leave options and child care assistance.[30] On the other hand, Japan's Implicit Approach to increase fertility "has been to assume policies must be adopted that target all children, and policy deliberations have taken children as their entry point".[31] Recent decades have witnessed a dramatic population decline in Russia, which has prompted the government to rely on socioeconomic policy reforms to aggressively encourage families to have a second child. A variety of policies were implemented to combat the demographic crisis, with the government investing heavily in increasing support for pregnancy and confinement grants, doubling monthly child support payments, improving family/child housing conditions, education, and establishing the contributory portion of the mother's labour pension.[25]

Richer countries have been able to attract large amounts of immigration, which has helped them deal with the problem to some extent in the short term, but this has resulted in further population decline and exacerbating labour force issues in the country of origin of migrants.[18]

Increasing current labour force participation, especially involving women force of the country can be an immediate solution.[18] Immigration policies have been adopted by certain developed countries but it is not an appropriate way to maintain population of a distinct cultural group. Technology including robotics and AI might be a short term solution in developed countries to manage labour force shortage but is not a solution to maintain adequate population size. Governments should encourage young couples to have children earlier in life through taxation reforms to reduce burden on family planning to have a baby. This can also be done through increasing availability of daycare, baby bonuses and revised superannuation schemes for not penalizing couple for spending time in child rearing.[32]

Have policy reforms been able to counter declining fertility?

In a number of nations, fertility rates have fallen below replacement levels, causing governments to fear adverse economic consequences. Concerned with a shrinking population and sudden, substantial declines in fertility, governments across the globe had adopted comprehensive policies pertaining to fertility. Policy reforms have been extensive, encompassing family policies ranging from family support services in the form of leave benefits, child care services, child-related cash transfers, childcare subsidies, financial support through the tax system, children's rights, social investment policy orientations, labour market regulations, and education policies, to policies promoting higher emigration in order to alleviate demographic pressures. While pronatalist policies intended to slow the fertility decline, they have failed to increase fertility above replacement levels.

Countries in Central and Eastern Europe enforced pronatalist policies and made considerable investments to encourage women to have multiple children. During the mid-1970s, the income of a family with three children in Bulgaria more than doubled due to childbirth-related benefits. Moreover, ten percent of the annual budget in Czechoslovakia was allocated to policies explicitly designed to benefit families with children. These generous investments have temporarily increased birth rates, but have had little effect on a woman's total number of children.[33] Inconclusive evidence exists regarding the effect of leave benefits on fertility. A recent systematic review of studies on European countries found renewal in entitlements doubling the length of leave while providing same flat rate of financial benefits. Reforms allowing women to automatically renew their leave period, for another birth within 27.5 months of the previous birth, created a strong incentive for post-reform mothers to have another birth quickly compared to pre-reform mothers (a "speed premium").[34] This review stated that leave can significantly increase fertility when generous increases in benefits are provided. Studies conducted in Austria and Canada to assess the effect of pronatalist measures observed 12-15% increase in fertility.[35,36]

Childcare that is widely available, easily accessible, and of high quality correlates closely with fertility and facilitates the educational attainment and labour force participation of women. The rapid expansion of high-quality child care slowed the fertility decline in Norway from the 1970s to the 1990s, with actual completed fertility exceeding two children per woman beginning in 1973. Preventing the decline of second and third order births was largely dependent on the expansion of child care.[25] In addition, between 2002 and 2018, modern policy initiatives in Germany, such as the expansion of all-day schools and childcare facilities for children under the age of three, led to a moderate increase in the total fertility rate.[25]

Russia's maternal capital fund in 2007, which was provided to mothers with a second or third child, contributed to an increase in the birthrate among women aged 25–29 from 78.4 births in 2006 to 99.9 births per 1,000 women in 2011.[33] In contrast, a quantitative analysis by Jeong et al found that South Korea's ambitious fertility promotion policies did not slow the rate of fertility rate decline. In fact, the cash policy as an incentive had no effect on the fertility rate, whereas the in-kind policy had a significant effect on the fertility rate's initial value.[19] The effectiveness of these diverse policies has been the subject of extensive debate.

CONCLUSION

Several socioeconomic factors including income, urbanisation, and female labour force participation, are associated with differences in fertility between nations. Although the magnitude of decline in fertility varies country wise, the downward trend is a global phenomenon. Population programmes were implemented which aimed at reducing the total fertility rate to combat post-war population explosion. However, the looming threat of a drastic population decline has prompted governments to enforce aggressive reforms to reverse this trend. Although initiatives implemented to address decreasing fertility rates led to increase in TFR to some extent, more is needed. It is important to recognise this as a complex phenomenon and impact of the pronatalist policies must be interpreted in light of the factors that underlie the wide-ranging and multifaceted disparities and influencing factors interacting among themselves. Strategies considering prevailing social norms, gender equality, women force participation and other contextual factors may lead to substantial improvement in increasing TFR.

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