Use of family planning services and fertility transition in Tanzania

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Abstract

Introduction: Under the Sustainable Development Goals (SDGs), modern contraceptive use in East Africa is expected to increase from 43 to 56 per cent between 2017 and 2030. As a result, unmet family planning needs and birth rates are expected to decline. While Tanzania has seen improvements in contraceptive access and use in recent years, the impact on fertility remains unclear. We examined contraceptive use and fertility patterns in Tanzania over the past thirty years.

Methods: Nationally representative cross-sectional data from seven Demographic and Health Surveys (DHS) conducted between 1992 and 2022 were used. The unit of analysis was women of childbearing age (15–49 years). Fertility trends, modern contraceptive use, and unmet needs were analyzed and compared using STATA version 15 for Windows. Some independent variables were included: age in 5-year groups, de jure region of residence, highest level of education, and current contraceptive use by method type.

Results: Between 1992 and 2022, 84,264 women were interviewed in the seven surveys. DHS-2022 included 29,143 eligible women of childbearing potential (mean age: 35.2 ± 8.2). Of these, 84.15% (n=24,524) lived in rural areas, and 52.85% (n=15,402) had no education. Only 38% of currently married women used contraception. The total fertility rate in Tanzania fell from 6.2 to 4.8 (-22.6%). Fertility rates varied regionally between 2.8 (Dar es Salaam) and 6.6 (Simiyu) children per woman (mean: 4.96). Of current nonusers, 23.1% expressed intention to start using contraceptives, while 66.01% did not.

Conclusion: The total fertility rate in Tanzania has fallen significantly. However, many women of childbearing age still do not use contraceptives and have no intention of doing so. Further improvements in access to modern contraceptives and education will have a positive impact on the country's rapidly growing population.

Keywords: Fertility rate, Contraception, Population, Literacy, Tanzania.

Introduction

The global total fertility rate (TFR) has fallen by more than half, from 4.84 in 1950 to 2.38 in 2021. The TFR is the average number of children a woman would get during her reproductive years (United Nations, 2019). It is based on the assumption that a given woman will give birth to a child and live to the end of her childbearing years (15-49 years) at the current age-specific fertility rate. Fertility rates vary significantly between and within countries. Strict birth control measures and other factors have brought some countries to the brink of population renewal or population decline. The Republic of Korea, for instance, currently has the lowest birth rate in the world (it fell below 0.84 in 2020) and is

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in a period of population decline (Yun et al., 2022). Between 1950 and 2015, the TFR in Africa fell from 6.6 to 4.7 children per woman (United Nations, 2015). However, in the early 2000s, the ongoing fertility transition was interrupted by no significant change (so-called fertility standstill or fertility arrest) in most African countries, starting in Ghana, Kenya and other sub-Saharan countries (Schoumaker, 2019). Nevertheless, the global population is expected to increase by 1.9 billion between 2020 and 2050, with sub-Saharan Africa (SSA) accounting for more than half of the increase (John & Adjiwanou, 2022).

Compared to other developing regions, sub-Saharan Africa has the highest TFR. The recently reported pooled TFR in urban and rural sub-Saharan Africa was 3.90 and 5.82 children per woman, respectively (Tesfa et al., 2023). The slow fertility transition and rapid population growth in SSA are attributed to high rates of teenage and premarital childbearing, inadequate access to modern contraceptive services, interrupted women's education, preference for larger families, and low knowledge of contraceptive methods (Hertrich, 2017; Finlay et al., 2018). While higher levels of women's education are associated with low TFR, differences in fertility are also reported in countries with similar levels of education, highlighting the impact of family planning (FP) programs (Schoumaker, 2019; Kebede et al., 2019). Most countries in sub-Saharan Africa are experiencing population growth, increasing demand for social services such as education and health care, and hindering economic progress (Cruz & Ahmed, 2018).

The United Republic of Tanzania has a rapidly growing population and is one of the 15 fastest in the world. It strives to achieve the 2030 Agenda for Sustainable Development by ensuring that women of childbearing age have access to and are satisfied with modern contraceptive methods. Between 2004 and 2016, the country's population grew at an annual rate of 2.75%, faster than the global and sub-Saharan population growth rates of 2.5% and 2.55%, respectively (WHO, 2010). There was also little uptake of family planning: only 20%, 27% and 32% of all eligible women used services in 2004-05, 2010-11 and 2015-16, respectively (MoH, 2016). The 1999 Tanzania Reproductive and Child Health Survey (TRCHS) reported a gross fertility rate of 41 births per 1,000 population and a TFR of 5.6 children per woman (TRCHS, 1999). The rural and urban TFRs were 6.5 and 3.2, respectively. Within Tanzania, contraceptive prevalence and fertility rates vary significantly between regions. A study conducted in the northwest of the country found a contraceptive prevalence rate of 15.0% (Safari et al., 2019). Another study found an 11% increase in modern contraceptive use, from 23.0% in 2004 to 34.3% in 2016 (Yussuf et al., 2020). Significant zonal differences have also been reported, ranging from 14% on the island of Zanzibar to 50.5% in the southern zone (MoH, 2016).

In general, it is estimated that the increasing use of modern contraceptives has prevented unwanted pregnancies (approximately 1,054,000 cases), unsafe abortions (approximately 313,000 cases), and maternal deaths (approximately 3,000 cases) (MoH, 2016; Brasileiro, 2018).

Methods

We used data from the Demographic and Health Surveys (DHS) conducted in Tanzania between 1992 and 2022. The unit of analysis was women of childbearing age (15–49 years). Written permission was obtained, and data were downloaded from www.dhsprogram.com. The DHS is a nationally representative household survey. It collects information on population demographics, maternal and child health, and various health indicators such as contraceptive use. DHS data's quality, coverage, and comparability are well-suited for studying population health indicators. The DHS sampling design and procedures are available on the program website: www.dhsprogram.com/methodology/surveytypes/DHS. It uses a two-stage clustering methodology

in which the sampling frame is allocated proportionally in the first stage. In the second stage, households with equal probability are selected using a methodological approach.

Study variables

The focus was on current fertility rates and contraceptive prevalence among women aged 15 to 49. The variables examined in this study are respondents' age at 5-year intervals (15–19, 20–24, 25–29, 30–34, 35–39, 40–44, and 45–49) and the highest level of education (none, primary, secondary, and tertiary), legal residence, and method and type of contraceptive use.

Data analysis

The current study's data analysis used STATA version 15 for Windows. Data were collated and cleaned before analysis. The analyses did not include missing data for the outcome of interest. Rates and percentages are presented in bar charts, and frequencies and ratios are presented in summary tables. Statistical significance was defined as a p-value less than or equal to 0.05.

Ethical approval

This study did not require ethical approval because it used secondary data. However, before accessing the data, written consent was obtained from the DHS program.

Results
Socio-demographic characteristics of participants

84,264 women of reproductive age (15-49 years) participated in the seven population and health surveys conducted in Tanzania between 1992 and 2022. 29,143 women took part in DHS 2022. Their mean age was 35.2 ± 8.2 years. Of these, 84.15% (n=24,524) lived in rural areas, and 52.85% (n=15,402) had no education. Many of them, 34.19% (n=9,965), were from the Lakes Zone, Table 1. Only 2.12% (n=618) of the 2022 DHS participants were ≤ 19 years old.

Table 1. Socio-demographic characteristics of the participants

Characteristics	Freq.	Per cent	Cum.
Age: 5-year groups			
15-19	618	2.12	2.12
20-24	2729	9.36	11.48
25-29	4702	16.13	27.62
30-34	5036	17.28	44.9
35-39	5922	20.32	65.22
40-44	5182	17.78	83
45-49	4954	17	100
Highest educational level			
No education	15402	52.85	52.85
Primary	13160	45.16	98.01
Secondary	540	1.85	99.86
Higher	41	0.14	100
Region			
Coastal	6950	23.85	23.85
Northern Highlands	2382	8.17	32.02
Lake	9965	34.19	66.21
Central	2415	8.29	74.5
Southern Highlands	3875	13.3	87.8
South	3556	12.2	100
Type of place of residence			
Urban	4619	15.85	15.85
Rural	24524	84.15	100

Contraceptive use by method and region

The pooled prevalence of any contraceptive use was 38% among currently married women participating in the 2022 DHS and 45% among sexually active, unmarried women. In these groups, the prevalence of modern contraceptive use was 31% and 36%, respectively. The most commonly used contraceptive methods were implants (17%) and injections (13%), Figure 1. The least used methods were IUCD (1.5%) and female sterilization (5%). About 7% of currently married women and 8% of sexually active unmarried women used traditional contraceptive methods. There were large regional differences in the prevalence of modern contraceptives, ranging from 9% (Simiyu and Kaskazini Unguja) to 56% (Mjini Magharibi). The unmet needs for family planning also varied widely, ranging from 6% (Lindi) to 39% (Simiyu), Figure 2. 66.01% of current non-users have no intention of starting contraceptive use.
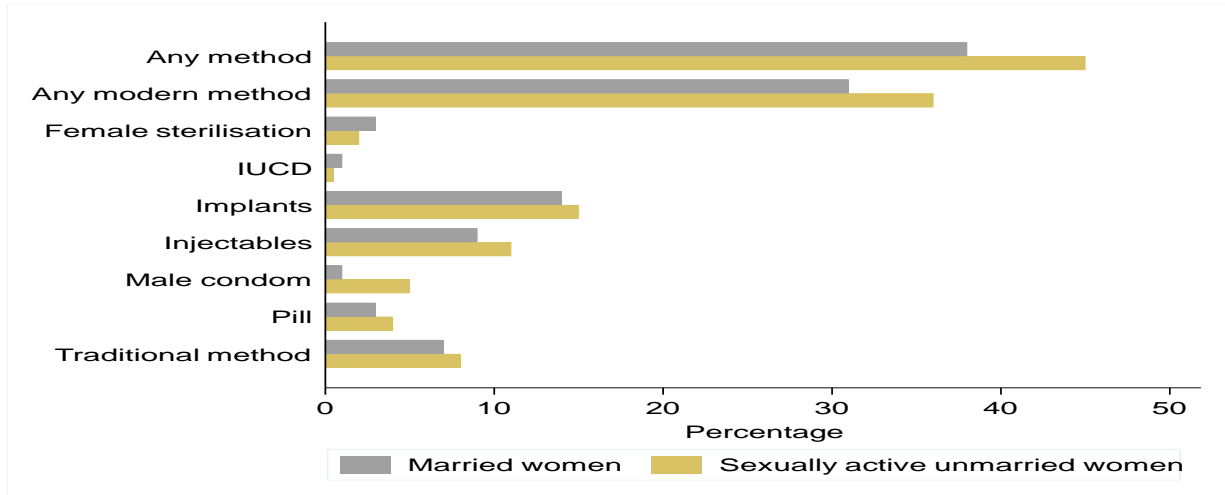
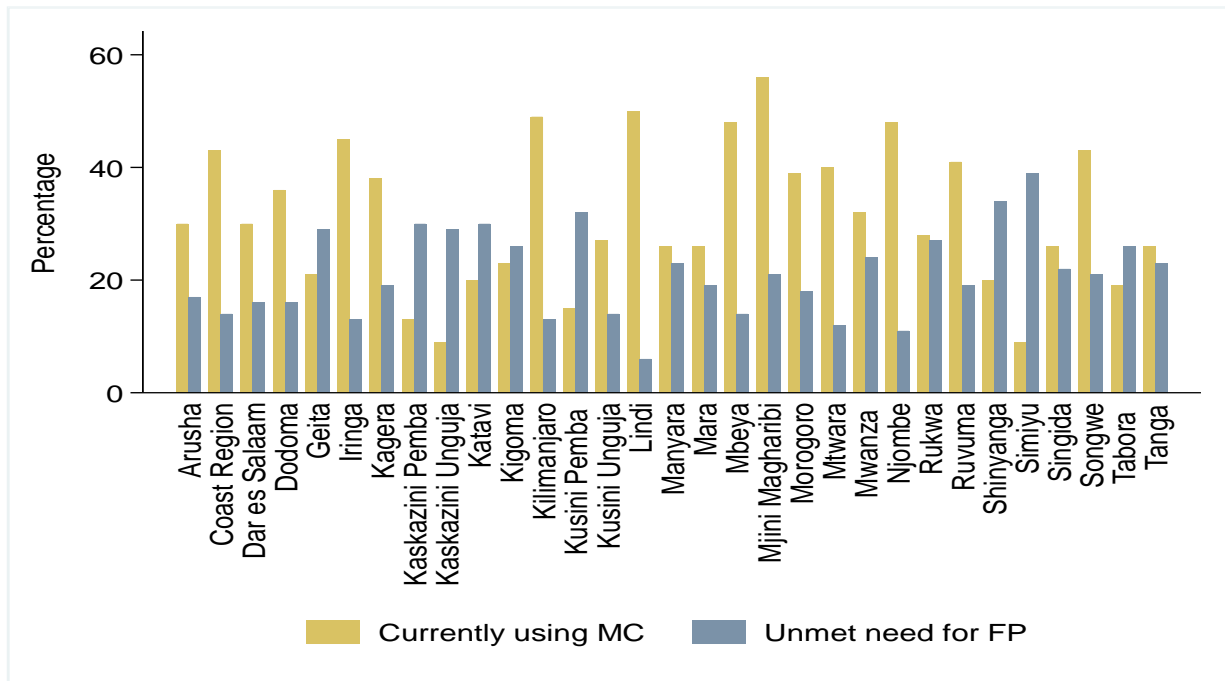Figure 1. Contraceptive use by method type. IUCD: intrauterine contraceptive device

Figure 2. Modern contraceptive (MC) use and unmet needs for family planning (FP) by region

Patterns of fertility

Between 1992 and 2022, the total fertility rate in Tanzania fell from 6.2 to 4.8 (-22.6%). This was due to the decline in urban and rural fertility rates from 5.1 to 3.6 and 6.6 to 5.5, respectively, Figure 3. Regional fertility is between 2.8 (Dar es Salaam) and 6.6 (Simiyu) children per woman. In 54.8% of regions (17/31), the birth rate was above the national average, Figure 4.
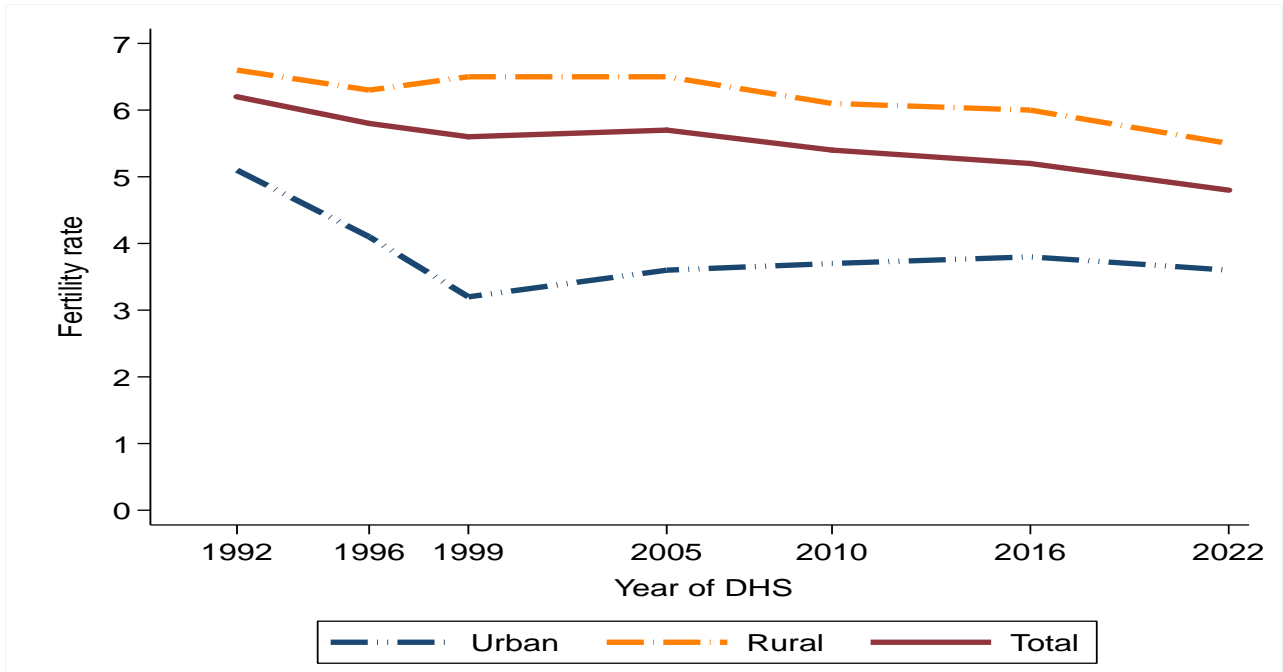
Figure 3. Total fertility rate (TFR) transition in Tanzania over the past thirty years
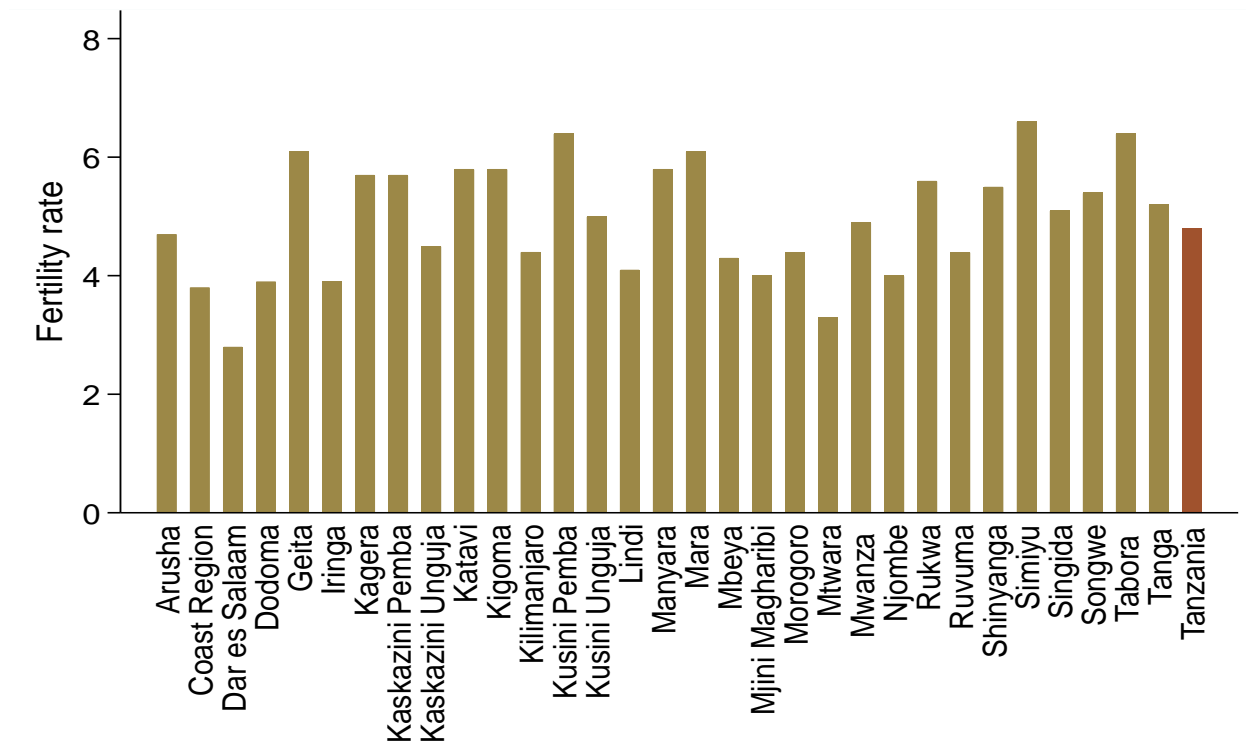

Figure 4. The fertility rate in Tanzania's 31 regions (Source: DHS-2022

Discussion

The current study examined trends in total fertility rates and contraceptive use in Tanzania over the past thirty years. The results show an increase in the prevalence of modern contraceptives and a significant decline in the total fertility rate in Tanzania. While the current total fertility rate is 4.8 children per woman, regional fertility varies significantly within Tanzania, ranging from 2.8 (Dar es Salaam) to 6.6 (Simiyu). The national average is slightly above the World Bank's projected TFR of 4.7 children per woman by 2022 and also above the fertility rates of Uganda (4.5) and Kenya (3.3) (World Bank, 2022).

The main reason for the slow fertility transition in Tanzania is the low use of family planning due to low partner participation and poor access and knowledge of modern contraceptives, especially among rural women. A recent study in northern Tanzania found that only 33.2% of women of childbearing age surveyed (n=1,184) used family planning methods, and 79% of these required prior consent from their partner (Massenga et al., 2021). Only 10% of respondents said their partner had attended family planning counselling. Limited decision-making power over contraceptive use and low literacy (perceived risks of modern contraceptive methods) have already been reported in Tanzania (Söderbäck et al., 2023).

The results also show that implants and injections were the two most commonly preferred contraceptive methods. This is similar to the results of a study using data from the 2015-2016 TDHS (Busse, 2022). Implants and injections are the two most effective long-term contraceptive methods. With a failure rate of less than 1%, these low-cost reversible contraceptive methods provide over 99% effective contraception when used appropriately (Bairagya et al., 2021; Rocca et al., 2021; Tufa et al., 2022). Tanzania introduced a policy of free family planning services. Unfortunately, implant and injection users in the country have reported having to pay for their current method in some healthcare facilities.

The average costs reported by injectable contraceptive users were 1,420 and 1,930 Tanzanian shillings (approximately US$0.54 and US$0.73) in government and private healthcare facilities, respectively (Busse, 2022). The average costs reported by users seeking implant services were as high as 4,127 and 6,194 Tanzanian shillings in government and private facilities, respectively. As observed in the current study, 84.15% of women of reproductive age live in poor rural areas and are unable to afford such costs. This, among other factors, contributes to low contraceptive uptake and high unmet family planning needs, resulting in a slow fertility transition and rapid population growth. Reinforced policies are needed to improve access to and use family planning services.

This study has some limitations. The data used are self-reported, which may be subject to recall bias. Our analysis is also limited to the variables presented in the DHS dataset, and some potential factors, such as the quality of family planning services, attitudes of health workers, and cultural beliefs that may influence modern contraceptive use, were not captured. Finally, the sampling approach used in the DHS may limit the generalizability of the findings to specific subpopulations within the country that are unlikely to have been adequately sampled. However, the DHS data are suitable for examining the country's population health indicators because of their overall quality, coverage and comparability.

Conclusion

Tanzania's total fertility rate has fallen significantly. However, many women of reproductive age still do not use contraception and have no intention of doing so. Further improvements in access to modern contraceptives and education will have a positive impact on the country's rapidly growing population.

Conflict of Interest: Authors have no conflict of interest to declare.

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