

Demographic and fertility transition in Nigeria; the progress made so far: a literature review

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Abstract

Background: Nigeria, since its inception as a sovereign nation, has been plagued by population explosion. This may be due to factors that need to be addressed by the government and individuals alike such as fertility desires.

Main body: In the course of this review, we drew our resource information from the Nigerian Demographic and Health survey of 2018, PubMed, and African Journals Online (AJOL, Scholarly publications on sub-Saharan Africa and Nigeria in particular that dwell on the area under review.

The total fertility rate (TFR) meaning the number of children a woman would bear in her lifetime is high, at a rate of 5.3 Children per woman. Population explosion is also a consequence of the low contraceptive use in Nigeria which stands at a rate of 17 % amongst married couples. Other factors that could be responsible for this population explosion include a lack of good population policies and few or non-existent national family planning programs. These negative effects on the Nigerian population made it grow at an annual rate of 2 %. Fifty percent (50%) of the Nigerian age distribution is under 19 years. This means that the Nigerian demography may not transit (change) readily.

Conclusion: A community or country is said to undergo demographic transition when the death rate and fertility rate balance each other, and the age distribution is made of working-class people against the young and the aged who are dependent on others for a living. The economy of such a country is industrialized, with good health systems and a long life span for its citizens. Fertility transition on the other hand means a situation where a community or national fertility rate shows a substantial decline compared to industrialized countries of Europe, The USA, and Latin America in the contemporary world.

Keywords: Demographic transition, Fertility transition, contraceptive prevalence, Nigeria Population policies.

Background

In this review, we attempt to assess the success and failures of Nigeria's Demographic and fertility transition using information gathered from past and current demographic health surveys. We will also evaluate the Nigerian Government Population policies from their debut in 1988 to their termination in 2015. We will also examine the level of contraceptive patronage, literacy level generally in the country especially women's education, and how this impacted on Fertility transition. We will conclude by examining the age

structure of Nigeria, as to the productive capability of Nigerian society.

The original concept of Demographic transition predisposes that "this change can only take place in communities with a high level of modernization" which in modern times can be regarded as a high level of industrialization. However, Coales in his widely quoted article in 1973 challenged this definition. He "opined that the original definition said there must be some level of modernization in a society before Demographic change can take place without mentioning the degree of change" (1, 2, 3). To support Coale's criticism of the

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demographic transition theory, Bangladesh a developing nation achieved fertility transition secondary to a high level of contraceptive use without a concomitant high level of modernization in her society (4). We will also use the concept of "Readiness, Willingness, and ability" to contraceptive use modeled after Lesthaeghe and Vandehoef as a reaction to Coale's criticism of Demographic transition theory to appraise the level of contraceptive patronage in Nigeria (5). Fertility transition necessarily means the total fertility rate of a country will show a substantial decline as obtained in industrialized countries of Europe and Latin American countries in the eighteenth century (6). On the other hand, demographic transition means a population or a nation in which the age distribution of the population is made of working-class persons, where mortality and fertility rates almost balance each other. Dependents like children and very old people who are not productive are excluded from this characterization of demographic transition. Modernization of society (industrialization) and family planning programs are forerunners of Demographic transition (2, 6).

Main text

The reproductive health indexes and population profile of Nigeria

In 2021, the population of Nigeria was projected to be about 213 million people, with a population growth rate of 2 % compared to the previous year (7). With this growth rate, the Nigerian population will double every 27 years and by implication, the Nigerian population is projected to double by the year 2050 to a population of 401.3 million people when this happens, Nigeria will be the 3rd most populous country in the world (8). If this trend continues by 2100, The United Nations project Nigeria's population will be over 728 million people (9, 10). The good news is the Total Fertility Rate of Nigeria (TFR – the total number of children per woman in her childbearing years of 15 – 49 years) fell slightly from 5.5 (DHS 2013) to 5.3 (DHS 2018) as a result of an increase in contraceptive uptake. The total fertility rate decreases as the education of the intending mother and wealth status increase across the board in Nigeria (11). The WHO recommended birth spacing intervals of 24 months between two consecutive births, but currently, Nigeria's birth spacing has improved to Birth intervals of 30.9 months, an area of reproductive Health where Nigeria had also made progress (11, 12). The total fertility rate and desire for family planning and consequently the birth rate vary according to the region of the country. In the

North West of Nigeria, the Total Fertility rate is 6.6 children /woman. In the South West, the TFR is 3.9 children per woman. These differences are due to the variable educational acquisition in different regions of the country and consequently the degree of contraceptive uptake. With this population explosion, the human population will outstrip food supply, and employment opportunities, creating environmental issues and competitive utility services as it occurs in present-day Nigeria. Thomas Malthus's theory "that overpopulation can reduce the standard of living of inhabitants of a nation by outstripping food supply and that improvement can only be achieved by strict fertility regulation" still applies in Nigeria as our Gross National Product, Gross Domestic Product (GNP, GDP) and per capita income are some of the lowest in the world (13). Nigeria needs to focus on birth control measures that will encourage contraceptive uptake and also embark on population policies that can restrict the high fertility rate prevalent in the country and consequently reduce the fast-growing population rate.

Nigerian population policies

The first Nigerian population policy was enacted in 1988-2003 (14). The Objective was to 1) reduce the rapid population growth rate and indirectly reduce or stabilize the Nigerian population 2) improve the standard of living of the people, 3) improve employment opportunities, and 4) encourage rural migration as against urban migration. The policy aimed to reduce the total fertility rate of the country from 6 children per woman to four. The policy recommended the minimum age of marriage for women to be 18 years and 24 years for men. The policy also wanted pregnancies to be restricted to the 18-35 years age group and with birth intervals of two years. The policy also advocated US 100 million Dollars for family planning programs. It was written in partnership between the Ministry of Health and the World Bank. To make this policy succeed, the policy formulators thought it wise to manipulate the beliefs of the two major religions in the country-Islam, and Christianity to achieve their objective. Since Christians usually marry one wife, they thought it wise to limit the number of children per family to four. Since Islam recommended four wives, the project recommends four children per family.

Drawbacks of the 1988-2003 National population policy

There was poor implementation by the National Population Program, the operator of the National policy, and also financial constraints.

The Policy implementation was more successful in Southern Nigeria due to social advancement ahead of the Northern parts of the country. Christians especially the Catholic Church posed some barriers as they don't believe in family planning. So, the implementation of the policy in Northern Nigeria was not very successful due to their cultural averseness of contraceptive use. However, some level of success was recorded after the implementation of the policy, there was a statistically significant positive shift in the demography of Nigeria (14).

Nigeria's 2004 National policy on population for sustainable development

In 2004, Nigeria launched The National Population Policy (NPP) with an end date of 2015. The endpoint of this policy was to improve the living conditions of the Nigerian people. The objective of this policy among others was grouped into sections with execution strategies which include "Uplifting health standards of the people, improving environmental conditions, education, and communications, reduce maternal and child health morbidities and mortalities, all aspects of population reduction including family planning and ameliorate the living standards of the people"

Success and failures of the NPP which was part of the larger global Millennium Development goals

While the target endpoint of 2015 has come and gone, the Millennium development goal succeeded in lifting millions out of poverty globally but failed in other areas like sub-Saharan Africa, Nigeria inclusive where it was not able to meet the poverty reduction target of 12.5 percent by 2015 (15, 16, 17, 18).

Family planning programs in Nigeria.

WHO definition of Family planning: "Family planning allows individuals and couples to anticipate and attain their desired number of children and the spacing and the timing of their births. It is achieved through the use of contraceptive methods and the treatment of involuntary infertility. A woman's ability to space and limit her pregnancies has a direct impact on her health and well-being as well as on the outcome of each pregnancy" (19).

Family planning programs literature is scarce in Nigeria as they were virtually none –existent. When these programs occurred, they were clandestine and experimental to test the uptake

and acceptance of contraceptive methods in an area with multiple barriers to contraceptive use like culture, religion, and traditional taboos. A typical example of these experimental contraceptive methods acceptance studies was the Ibadan City case study (20).

The NURHI Family Planning Program

The Nigerian Urban Health Initiative (NURHI) is a Non-governmental, Non-Profit organization run by the John Hopkins University Centre for Communication Programs (JHUCCP) that was launched in 2009 in Nigeria and was sponsored by Bill and Melinda Gates foundation. The objective of the foundation was to make contraception a commodity accessible to every childbearing-age girl or woman in Nigeria. The program was earlier targeted to last 5 years in Nigeria, but because of the success achieved, the program was extended to twenty years. The NURHI just marked two decades of successful family planning execution in Nigeria (21).

London Family planning Summit 2012

There is low contraceptive prevalence in 69 poorest countries of the world (sub-Saharan African countries and Nigeria inclusive). There was a London summit on family planning in 2012, hosted by Bill and Melinda Gates Foundation and other world donors. This summit had hoped to double the annual contraceptive use in the world's poorest countries with an additional 120 million contraceptive users as a positive effect post-conference. This feat was to be achieved by doubling the pre-conference annual increments of 0.7 points to 1.4 percentage points for contraceptive users. The Nigerian Government was fully represented at the 2012 family planning Summit in London (22). At the end of the conference, they made an impact on recruiting new acceptors to contraceptive use in low-income countries, their original target. However, they were criticized for making their endpoint numeric as this appears to critics as coercing women to take contraception and deviating from the original idea of the International Conference on Population and Development (ICPD 1994) which was held in China. This Conference in China advocated human rights and reproductive health rights for Women as against the London conference they thought was using coercion to recruit women to take contraception in low-income countries (23).

As a response to the London conference, the organizers hoped by the year 2020, the majority of childbearing women in the target countries will be able to access contraception. Due to the success

achieved by the London Summit in recruiting new acceptors in low-income countries, after the conference ended, they were named after the acronym FP 20020. FP2020 is currently renamed FP2030. It is a global partnership that started at the London summit of 2012, trying to promote Rights-based family planning globally with headquarters in the USA (24).

Contraceptive use in Nigeria and its implication on maternal mortality ratio.

We use the Nigeria DHS 2018 to analyze the level of contraceptive use in Nigeria, a prerequisite to fertility transition, and make our inferences. Contraceptive use is higher for unmarried women (28%) than for married women (12%). The demand for contraception among currently married women is 17% (11). Nigeria's contraceptive uptake may be too low to impact fertility transition and the maternal mortality ratio (MMR) of the country which currently stands at 814 maternal deaths per 100,000 live births in 2018 (25, 26).

Contraceptive discontinuation rates in Nigeria

Contraceptive discontinuation means users who stopped the contraceptive method after 12 months of its inception or switched to another contraceptive method type. If contraceptive discontinuation cuts across the board generally for a particular method type, the prevalence of women taking this method will fall. However, women who persisted with a method type are more likely to enjoy the benefits of that method over time. The 12-month Contraceptive discontinuation rate in Nigeria is high generally at 41% (11). This means that almost 1 in 2 women discontinue the method within 12 months of starting. This behavioral tendency of high contraceptive discontinuation may be associated with one of the many reasons why Nigeria has a low contraceptive prevalence of 17%. High contraceptive discontinuous rates are associated with inconsistent use with consequent mistimed and unwanted pregnancies. Most discontinuation rates are more for the injectable and the pill which coincidentally is the most used contraception in Nigeria (11). Most women while using contraception attribute all and sundry ailments to contraception. However, both the injectable and the pill have a progestin component as does a host of other contraceptives like implants, dermal patches, some IUDs, LARCs (Long-acting reversible contraceptives), vaginal contraceptive rings, and POPs. Progestin has a lot of side effects and consequently, most contraceptives that have

a progestin component have high discontinuation rates. According to evidence-based studies, contraceptive method type is the most important factor in discontinuation. It is also noted from studies that methods that are provider dependent are not easily discontinued (27, 28).

The Trends in family planning in Nigeria

The total demand for family planning in Nigeria among married women increased from 27 % in 1990 to 36% in 2018. Over the same period, the demand met by modern contraceptives increased from 14 % to 34%. The unmet need for contraception decreased from 22% in 1990 to 16% before rising to 19 % in 2018. The unmet need for family planning currently among married women is 20 % in urban areas and 18 % in rural areas. The demand met by modern contraceptive methods is 39 % in urban areas and 28% in rural areas (11).

What determines the use of family planning amongst Nigerian Couples?

The decision to use family planning among married couples in Nigeria is usually influenced by many factors including the individual age of the couples, whether it was a joint decision, the number of living children, place of residence, whether urban or rural or the state in Nigeria where the couple lives. Injectables, Implants, and IUDs are among the most commonly used contraceptive method among Nigerian women. These three contraceptive methods belong to the group of modern contraceptive methods known as 'Long-Acting Reversible Contraception (LARC)'. This group of contraceptives is gaining popularity worldwide because some members of the group have a long duration of action from the US FDA. The drawback of this group of contraception is that removal needs the assistance of the Health care provider (11).

The pragmatic use of readiness, wiliness, and ability to contraceptive use as applied in NHDS of 2018

The 'ability' to use contraceptives means the percentage of women who know about pills and injectables if they were to seek family planning services. The DHS used the pills and injectables to explain the ability of contraception use because they are the most commonly used contraceptive methods in Nigeria (11). The ability to seek contraceptive use is higher among sexually active unmarried women at 98% prevalence as against 94% for married women. The former knew about nine (9) modern contraceptive methods as against

7 methods for married couples (11). The most commonly known methods among currently married women are injectable (88%), and pills (87%), followed by implants (78%), condoms 77% and lactation amenorrhea 58%. However, while the ability or knowledge of modern contraceptive methods was high, this did not transcend into practice, as the contraceptive prevalence rate (CPR) among currently married women is 17% in Nigeria. This poor contraceptive uptake may be one of the many reasons why Nigeria has a high maternal mortality ratio of 814 maternal deaths per 100, 000 live births in 2017 (11). The readiness or desire for currently married women aged 15-49 years who want to have another child within 2 years is 34 % and for those who want to postpone childbearing for at least 2 years 30% (11). Currently, married women (24 %) are more likely to limit childbearing or undergo sterilization compared to 19 % of men who would want to do the same (11). However, the desire to limit childbearing by couples in Nigeria and most sub-Saharan African countries are usually cut short by the desire to have more children (11). Willingness or the act in favor of certain contraceptive methods as expressed in the NDHS of 2018, showed that most currently married women favor injectables (88%), pills (87%), implants 78 %, and male condoms 77% (11). African cultures are usually averse to contraceptive use. Willingness to choose a contraceptive method must be associated with benefits or stimulus that will accrue to the individual for her choice of contraception. These benefits should be able to surmount negative factors like fears and traditional beliefs society has against contraceptive use. The individual woman seeking contraceptive services must be counseled by care providers, laying bare the benefits and side effects of these contraceptive methods to the client at the inception of contraceptive intake, Measures like this will increase the uptake of contraception in Nigeria and sub-Saharan Africa at large.

The Nigerian high maternal mortality rate (MMR) Scenario and contraception use in Nigeria

On 25 June 2019, The World Health Organization (WHO), created an arm "Maternal health in Nigeria: generating information for action" The belief of the World body on health was that Nigeria has some of the worst maternal mortality ratios in the world. The objective of this arm of the WHO is to disseminate information in particular about the Nigerian high maternal mortality to the world and what (action) can be taken. It is a clarion call for action on the Nigerian high mortality ratio (MMR),

calling for solutions (25). The current Nigeria Demographic and health survey 2018 report of maternal mortality was still one of the highest maternal mortality rates in the world at 814 maternal deaths per 100,000 live births. This report is in the agreement with or justifies the creation of an arm of the WHO to disseminate news about Nigeria's high maternal mortality ratio (11, 25).

The British Journal of Obstetrics and Gynecology published a supplement on these subjects titled: Application of the maternal near-miss approach to audits of severe maternal complications in low-resource countries. Low contraceptive prevalence, none-or functional population policies, and non-enduring national family planning programs are some of the forerunners to this high maternal mortality ratio which are the core points of this review (29). Nigerian Demographic and health survey reports of 2018 are in agreement with the Maternal Health in Nigeria: generating Information for action, an arm of the WHO, where the Maternal Mortality Ratio of Nigeria was over 814 maternal deaths per 100,000 live births and 58, 000 maternal deaths in 2015, one of the highest MMR in the world (4, 29).

Who are the providers and marketers of contraceptive products in Nigeria?

Knowing the source of the contraceptive supply is essential to providers running family planning clinics and their clients alike. Knowing the contraceptive source may help to plan programs (7). This may not only assure qualities of contraceptives and may also be helpful in programs and training providers, While the public sector is a major provider of contraception in Nigeria, DKT International is the largest private provider and distributor of reproductive health products in Nigeria (11). Most female sterilization as a permanent form of contraception is usually provided by the public sector (54%). The private sector provides 41 % of modern contraceptive methods. The public sector provides the following modern contraceptive methods including intrauterine contraceptive devices (79%), Implants (75%, Injectable (93%), and female condoms, (80%). The modified Pomeroy method of tubal ligation is usually the choice of Obstetricians and clients alike. However, the drawback of tubal sterilization is that it is not easily reversible. The pill is used by 67% of women. Most modern contraceptive methods are sourced through the public sector, International non-Governmental organizations like the Planned Parenthood

Federation of Nigeria apart from DKT International (11, 30).

The unmet need for contraception in Nigeria

The unmet need for contraception is high at 18.9% of women aged between 15-49 years. This means 1 in 5 women in their childbearing years who desire one form of contraception or the other do not have access to it either because it is not available or cannot purchase it because of cost (11).

Conclusion

With a contraceptive prevalence of 17%, 50% of the age distribution of Nigeria's population is under the age of 19 years, high poverty level low life expectancy, low per capita income, and a high Fertility rate of 5.3 (TFR) /Woman in her childbearing years: With all these poor vital statistics, Nigeria may be far from demographic and fertility transition.

List of abbreviations

WHO: World Health Organization.
UNICEF: United Nations Children Fund
DESA: Department of Economic and Social Affairs.
TFR: Total Fertility Rate.
GDP: Gross Domestic Product.
GNP: Gross National Product.
USA: United States of America.
AJOL: African Journals Online
PubMed: Medline database
NPC: National Population Commission
DHS: Demographic and Health Survey
FP2030: London Family Planning Conference 2012
LARC: Long Acting Reversible Contraception
POP: Progestogen Only contraception.
FDA: Food and Drug Administration

Declarations

Ethics approval, and Consent to Participate
Not applicable.

Consent for publication

The authors give consent for the publication of the work under the creative commons Attribution-Non-Commercial 4.0 license.

Availability of data and materials

This is a review article and all the data and materials used were drawn as shown in the body of the text on the source of information for the article. Also, the links for references were duly

cited for review if needed and the dates cited are available in the text.

Competing interests

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Authors' Contributions

AAO conceptualized the review and wrote the review. IEH participated in data extraction and synthesis, and manuscript writing. All authors approved the final manuscript version.

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