THE DEMOGRAPHIC TRANSITION THEORY: APPLICATION TO CONTRACEPTION IN NIGERIA-YESTERDAY AND TODAY

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INTRODUCTION

Every nation moves through developmental stages, either progressively or regressively. Though sometimes it may seem the nation is fixated at some stages, she would eventually either move up or down.The demographic transition theory seeks to explain these developmental stages that are determined by the population growth rate. According to the theory, some nations have completed the transition and are maintaining a stable economy and growth rate. However, some countries are still staggering between stages and some others are fixated. In all these, the theorist relates economic affluence to ability to control population growth rate.

Population growth rate has a huge influence on availability of resources. A nation whose growth rate is greater than economic progression is heading for recession. Growth rate can be affected by birth, death, and migration rates. Birth rate is the most common means of increasing population size. Measures have been developed to control birth rate. One of the means is contraception.

Contraception is any means intended to prevent pregnancy by interfering with the natural process of ovulation, fertilisation and implantation (Tuteur& Wells, 2018). The traditional methods of withdrawal and abstinence date as far back as the bible. However, more sophisticated methods

(e.g. condoms, intra uterine devices, pills, etc) have been developed and are now available and used globally.

Though there was a limitation in contraception options available in Nigeria in the past, the birth rate was balanced with sufficient resources. However, recently, Nigeria is experiencing economic recession but birth rate has not been successfully controlled. Studies (Fayehun, 2017; Oye-Adeniran, Adewole, Odeyemi, Ekanem&Umoh, 2005) have shown there is an increase in availability and awareness of modern contraceptive methods but use is still considerably low.

OBJECTIVES

The paper aims specifically to:

1) Discuss the Demographic transition theory (DTT)
2) Review the past and current use of contraception in Nigeria
3) Relate the Demographic transition theory to contraception in Nigeria
4) Suggest ways forward
5) Enumerate the implications of DTT and contraception to Midwifery practice

DEFINITION OF TERMS

The following terms will be used often in this paper and would imply the following:

- Birth rate: The number of births per 1,000 in a year.
- Death rate: The number of deaths per 1,000 in a year
- Population growth rate: the crude birth rate minus the crude death rate
- Contraceptive prevalence rate (CPR): percentage of sexually active women (15-49years) who are practicing or whose partners are practicing any form of contraception childbearing years

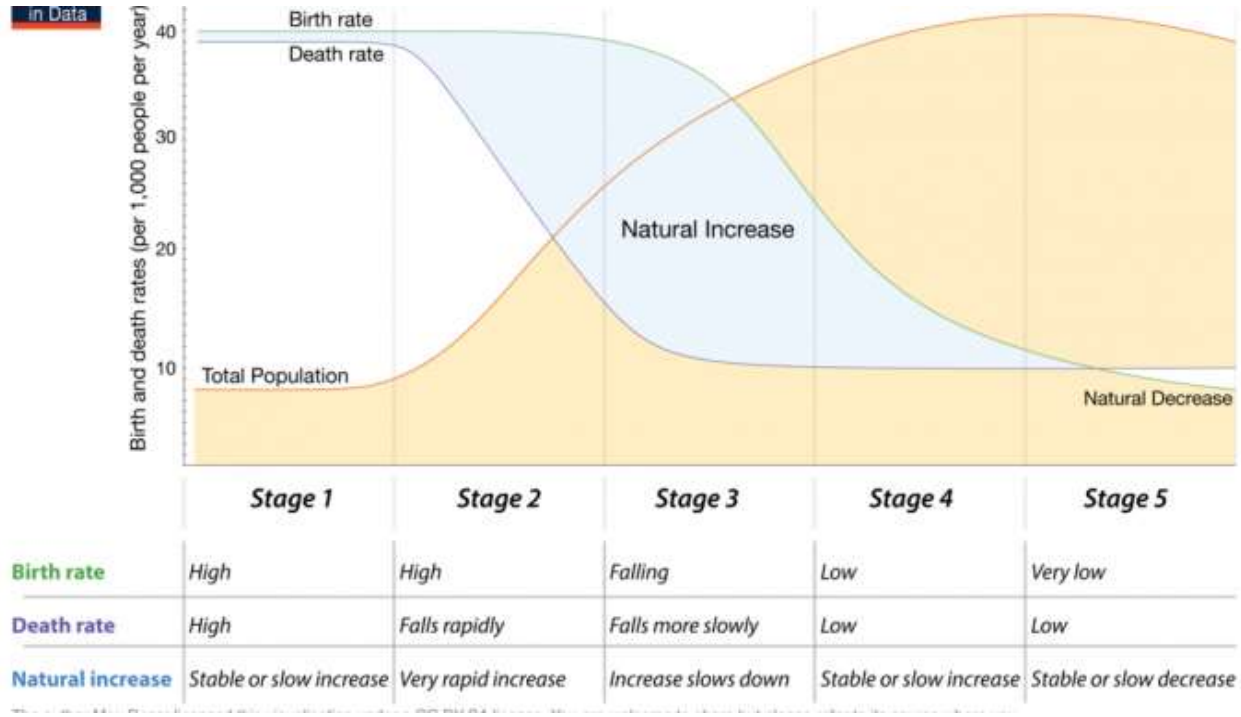
- Total fertility rate: the number of children a woman would give birth to at the end of her reproductive years.
- *Yesterday:* years before Nigeria's independence (1960)
- *Today:* from 1960 to 2017

DEMOGRAPHIC TRANSITION THEORY

The Demographic transition theory describes the dynamism of every population. It was proposed by Warren Thompson in 1929 (Montgomery, n.d.). It represents the advancement of a nationfrom period of high birth and death rates marked as pre industrial era to low birth and death rates (industrial era). Warren proposes that the birth rate and death rates of every nation change over time and these affect the economic development and vice versa (Weber, 2018).It also suggests that there is a relationship between birth rate and death rate which varies with economic development (Lloyd, 2012). As the nation advances in technology in all spheres, its birth and death rates are affected leading to a shift in population growth rate. Therefore, economic development can reduce the death rate. According to Warren, every nation passes through different stages of population growth (Yelnick, 2018).

There are usually 4-5 stages for categorizing demographic transition. Earlier categorization was done in 4 stages. However, with the change in population pattern which could not be addressed by 4 stages, a new 5^{th} stage has been added to it (Divisha, 2017).Every country can be placed within these stages, but not every stage of the theory has a country that meets its specific definition. For example, there are currently no countries in Stage 1, nor are there any countries in Stage 5, but the potential is there for movement in the future (Grover, 2014)

Stages of Demographic Transition Theory



	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5
Birth rate	*High*	*High*	*Falling*	*Low*	*Very low*
Death rate	*High*	*Falls rapidly*	*Falls more slowly*	*Low*	*Low*
Natural increase	*Stable or slow increase*	*Very rapid increase*	*Increase slows down*	*Stable or slow increase*	*Stable or slow decrease*

Source: Grover (2014)

Stage 1:This stage is referred to as "pre industrial" period or "high stationary". It is characterised by high birth rate and high death rate which results in a relatively stable sized population with a slow growth rate (Yelnick, 2018).Montgomery (n.d.) mentioned that this situation was applicable to all human populations until the late 18th century when Western Europe broke the balance.

According toDebasish (2017), at this stage the citizens are predominantly in the rural areas and have agriculture as their main occupation while the tertiary sectors (e.g. transport, banking, commerce, etc.) remain underdeveloped. He adds that the high death rate was due to lack of

knowledge of disease prevention and cure and occasional food shortages. The high birth rate was attributed to limited birth control, economic benefits of numerous children and attempt to replace lost children (Lloyd, 2012).

Stage 2:This stage is called "early transition", "early expanding" or "population explosion stage". It is marked by precipitous decline in death rate while birth rate remains high (Grover, 2014). The total population is bound to increase since birth rate exceeds death rate. Significant progress in healthcare, education, gender equality, sanitation and technological advances in agriculture has been identified as contributory factors to the decrease in death rate. At this stage, economic development speeds up due to individual and government efforts. However, the advancement has been noted not to affect the populace attitude which results in high birth rate (Debasish, 2017).

Most countries since the mid 20th century have transited from stage 1 to stage 2 and continue to advance. However, Eidevall (2018) noted that there countries that have remained in this stage due to some socioeconomic factors; Nigeria, Congo, Afghanistan, Yemen, etc.

Stage 3:At this stage, there is increasing economic development and people migrate from rural to urban areas. People become more conscious of family size; numerous children are not seen as asset but burden and early marriage is discouraged (Kwat, 2017). This results in decrease in birth rate while death rate is still low owing to economic advancement. The decline in birth rate varies among countries, as well as the time frame in which it is experienced (Grover, 2014). The population growth rate is said to be slow because though the birth rate has reduced, death rate is still lower than birth rate.

The fall in birth rate in developed countries started in the late 19thcentury in northern Europe (Shiva, 2015). He noted that the decline in birth rate may be due to access to contraception (in recent years), increase in wages and investment on education, mechanized farming, urbanization, increase in number of educated women, reduction in child labour, etc Countries at this stage include South Africa, Kenya, Mexico, Egypt, etc.

Stage 4:At this stage, the birth and death rates are low andmaybecome equal. The population growth rate is therefore low owing to increased interest in career pursuit by both sexes (Lloyd, 2012). It is worthy of note that the people born during the stage 2 would have aged at this stage. This implies an increase in dependent population. Also, death rate may increase slightly due to increase in diseases linked with unhealthy lifestyle like low exercise levels (Crossman, 2017).Argentina, Australia, Canada, China, Brazil, most of Europe, Singapore, South Korea, and the U.S. are some countries at this stage of transition.

Stage 5: Crossman (2017) says that this stage is not universally accepted. It is marked by a further decrease in birth rate to an extent where it falls below death rate causing a negative population growth rate. However, it is not an immediate effect and Grover (2014) noted that it will take a one or two generations before this is observed. This is because countries like Croatia, Estonia, Germany, Greece, Japan, Portugal and Ukraine have birth rates lower than death rate yet, they don't have a negative population growth rate.

Strengths of the Demographic Transition Theory

According to Jackson (2015), the theory has the following strengths

- It is easy to understand

- It can be used as baseline in explaining demographic changes over time
- It can be applied to all countries
- It provides a basis for comparisons between countries
- It recognised countries' variation by not allotting specific time frame to the stages

Weaknesses of the Demographic Transition Theory

Despite the easy applicability of this theory, it has some limitations:

- It did not include others factors that may influence population growth e.g. migration
- It did not consider other possible causes (outside poor industrialization) of increased death rate like war, insurgence, and terrorism.
- Decline in birth rates are so diverse and differ from country to country unlike the explanations provided in stage 3 (Divisha, 2017).

REVIEW OF CONTRACEPTION IN NIGERIA

One of the physiological needs identified in the Maslow's hierarchy is 'Sex". This is because humans as well as some other animals require it to procreate and avoid extinction. Sexual intercourse is the most popular means of achieving pregnancy. However, there are times pregnancy may be undesirable by a partner or both partners. This results in need for contraception.

Contraception also known as birth control is any means intended to prevent pregnancy by interfering with the natural process of ovulation, fertilisation and implantation (Tuteur& Wells, 2018). According to the WHO (2018), it allows people to achieve their desired number of children and spacing between pregnancies. Contraception can be traced back to ancient times

with introduction of pessaries. By mid-1800 condom use was wide spread after France was faced with an epidemic of Syphillis (Shi, 2018).There are various methods of contraception: natural (traditional) and artificial (conventional). These methods have associated precautions for users, benefits and risks which influence choice.

In the past, Nigerians attempted to inhibit pregnancy and achieve child spacing with douching, abstinence, *coitus interuptus* (withdrawal method), use of charms and concoctions, etc. (Anyanwu, Ezegbe&Eskay, 2013). These methods have been associated with high failure rates. A study revealed that withdrawal method had 7.8 to 17.1% failure rate and periodic abstinence: 6.1 to 20.9% (Polis, Bradley, Bankole, Onda, Croft & Singh, 2016). Use of these traditional methods instead of modern methods may be attributed to poor knowledge, lack of technological advancement, unavailability and inaccessibility to modern methods, patriarchic society, etc.

Traditional means continued to thrive until the early 1950s when a group of women saw a need to advocate for more effective ways of achieving contraception and family planning. The group (Federation Women Council of Nigeria) inaugurated the Planned Parenthood of Nigeria (PPN) (Umameiya&Erua, 2016). The PPN was charged with a duty of promoting family planning through hospitals, maternity and media. Since then, new methods have been introduced and old methods improved upon. Caldwell and Ware (1977) noted that contraception continued to spread and increased rapidly during the 1960s and early 1970s.

Contraception was identified as a means of curbing some challenges facing the developing countries like Nigeria (Fayekun, 2017). He mentioned it as a key factor in achieving the Sustainable development goals (SDGs) because in addition to preventing unintended and high risk pregnancies which can lead to maternal and foetal mortality, it can also increase women's

economic power by allowing them more opportunities to work. This reasons led to provision of multiple options to these countries.

Recently, the awareness of contraception (traditional and modern methods) is widespread across the nation. A study conducted in 2013 by National Population Commission among men and women across the federation showed that 85% of women and 95% of men are aware of at least one method of contraception (Nigeria Demographic and Health Survey (NDHS), 2013). The survey also showed that women usedinjectables more often and men were more open to use male condoms. However, the good knowledge of contraception has not translated to a high prevalence rate (Fayehun, 2017). This has been attributed to factors that are related to religion, culture, ethics, economics, etc.

Factors Influencing the Use of Modern Contraceptives in Nigeria

Peculiar factors that may contribute to poor use of contraception in Nigeria include the following:

Level of education: Ogboghodo, Adam and Wagbastoma (2017) identified education as a necessary factor in the use of contraceptives. It is believed that an individual that is educated will understand the means and rigors of contraception.

Earning power:According to the Cambridge dictionaries online (2018) Earning power refers to the "ability of a person to earn money". It is often understood that money confers some power and authority. This is not different in families where the women have greater earning power or as much as the man. Blackstone and Iwelunmor (2017) reported that women with less earning power than their male partners were less likely to use contraceptives

Male involvement:Similar to birth preparedness, involving the male partners in contraception is essential to achieving substantial use of contraceptives. In Nigeria (especially in the North), strategies towards promoting contraceptive use that are focused on only women are more less likely to achieve little or nothing (Duze& Mohammed, 2006). Their study showed that Nigerian men were more likely to restrict their partners from accessing contraceptives due to desire for large family size. Also, Blackstone, et al. (2017) mentioned that some men perceived contraceptives as a gateway for promiscuity and so were reluctant from giving consent. These indicate a need for programmes channeled towards achieving attitudinal change in the male folks.

Religious obligations:Various religions have their reservations on contraception. While the Anglicans, Protestants and Muslims approve of use of modern contraception, they have restricted them for only married couples (Klaus & Cortes, 2015; Ajani, 2013). The Catholic denomination refutes all forms of artificial methods of contraception. These stances have played a role in limiting the uptake of contraceptives among Nigerians (Richert, 2018).

Myths and misconceptions: Ankomah, Anyanti and Oladosu (2011) identified three myths/misconceptions that have significant negative effect on use of contraceptives among Nigerians. They include that contraceptives make women promiscuous, may cause cancer and are expensive. Achieving change of these perceptions will certainly increase use of contraceptive in Nigeria.

Others include perceived high cost of contraceptives, quality of health services, availability of service providers, etc.

APPLICATION OF DEMOGRAPHIC TRANSITION THEORYTO CONTRACEPTION IN NIGERIA-YESTERDAY AND TODAY

Contraception plays an important role in the demographic transition of countries (Solanke, 2017). According to the theory, there is a variation in death rate and birth rate as nations transit from one stage to another. This is attributed to a lot of factors resulting from level of technological and economic advancement of the country. Eidevall (2018) identified Nigeria as one of the countries stagnated at the second stage of the DTT. This stage is marked by high birthrate and slight decline in death rate due to improved public health, better nutrition, etc. (Lloyd, 2010). To either disprove or agree with Eidevall, we have to review some vital statistics (birth rate, death rate and contraceptive prevalence rate, etc.) to understand how Nigeria has fared.Though the early 1950s marks the introduction of modern contraceptives, the review of statistics will be done using the year of independence (1960) as the bench mark due to paucity of data before 1950.

Table showing Nigeria's statistics (Birth, death and Contraceptive prevalence rates)

Years	**Birth Rate**	**Death Rate**	**Contraceptive Prevalence Rate (%)**
1955	46.1	*Unknown*	*Unknown*
1960	46.3	26.38	*Unknown*
1970	45.8	22.81	*Unknown*
1980	47.2	19.41	6.8
1990	44.9	18.58	15.3
2000	43.3	17.89	32.1
2011	41.9	13.99	14.1

2016	40.5	12.5	20.4
2017	36.9	12.4	*Unknown*

From the table above, the United Nations' historical and forecast data showed a decline in birth rate from 46.1 (1955) to 36.9(2017) (Factfish, 2015). Also, there is a reported decrease in death rate from 26.38 (1960) to 12.5 (2016) (Indexmundi, 2017). Nigeria's contraceptive prevalence rate has also increased from 6.8% (1980) to 20.4% (2016). It can therefore be deduced that there is an increase in contraceptive prevalence with a resultant decrease in birth rate. There is also a decrease in death rate as the years pass by which may have been due to economic development, improved health technology, etc. Merely looking at these data, it is difficult to understand why Nigeria is still placed at stage 2 of the DTT since the birth and death rates are both decreasing and there is access to contraception which are features of countries in stage 3.

Nigeria's estimated population in 1960 was 45.14 million people and 190.89million in 2017 (Trading Economics, 2018b). Also, Population.City (2018) has demonstrated a 13,075/day population growth rate, 19,587/day birth rate and 6,512/day death rate. The aforementioned figures do not agree with the earlier posited decrease in birth rate. This may due to wrong forecasts, forgery, etc. From the later data, it can be deduced that Nigeria population rate is far from decreasing though the death rate is somewhat low. This therefore provides a justification for placing Nigeria in stage 2 (decreasing death rate but high birth rate).

There is rapid increase in Nigeria's population growth rate without corresponding increase in development, resources, etc. required to sustain the population (Nigeria Health Watch, 2016). This indicates an urgent need to achieve a successful population control. As suggested by Lloyd

(2010), a workable means of achieving a low birth rate is access to contraceptive methods with high success rates.

South Africa and India are typical examples of countries that have achieved a remarkable increase in contraceptive prevalence and are now counted among nations in stage 3 of the DTT. While South Africa has achieved a CPR of 49.1% in 2017 from 26.3% in 2002/2003 (Chersich, et al, 2017), India has advanced from 36.1% in 1990 to 52.2%(2015) (New, Cahill, Stover, Gupta &Alkema, 2017). This is in agreement with Lloyd's suggestion that use of contraceptive methods ensures a successful transition.Therefore, in order to achieve a remarkable decrease in birth rate that will balance with the available resources and advance Nigeria into stage 3, the targeted 36% CPR (Ifijeh, 2016) is optimal.

SUGGESTIONS TO WAY FORWARD

Following the review of literatures on Demographic transition theory and its application to contraception as it pertains to Nigeria, we recommend:

1) Regular review of existing policies by the government after evaluation to accommodate achievable outcomes and better means of achieving them
2) Considerations of religious and social norms when making policies and programmes
3) Establishment of more programmes to achieve national coverage and availability of contraceptive options
4) Provision of free contraceptive services
5) Involvement and education of men on the benefits of maintaining a sustainable family size
6) Further education of the public to correct myths and misconceptions about contraceptives

7) Community education to enable them appreciate the importance of the girl child as much as the male because search of a male is one of the reasons for large family size

IMPLICATIONS TO MIDWIFERY PRACTICE

The Midwife is in the fore front of reproductive health and has a core duty to promote it through advocacy, education, etc. A grip of the economic, health, social benefits of contraception would enable the midwife to enhance and support the uptake of contraceptive methods. Also, adequate preparation and training of midwives through rigorous education and practice will enable them deliver quality reproductive (contraceptive) services. Since contraception is a means of progressing along the DTT stages, a midwife has a role to play in ensuring advancement of the nation by promoting contraception. The Midwife can promote use of contraceptives by:

1) Advocating for favorable policies that take cognizance of bio psychosocial and spiritual aspects of man
2) Health educating about contraceptive methods to help correct misconceptions
3) Creating public awareness of the benefits and different methods of contraception
4) Encourage active participation of male partners in family planning
5) Incorporating use of contraceptive in pre and post conception counseling
6) Rendering quality contraceptive services so as to win the confidence of the public and encourage patronage.

CONCLUSION

The Demographic transition theory provides an overview of stages a country is expected to pass through as she advances towards optimal and stable economy and technology. It helps one

understand the variations that exist among nations and therefore provides a basis for comparisons. The theory summarised the stages into four or five with depicting features and suggestions as to factors that can bring about progress. Despite the theory's advantages, it has some flaws.

Nigeria has been notably placed in stage 2 with reasons pertaining to its birth rate and death rate. One of the factors identified as playing a key role in advancing nations to stage 3 is access to contraceptives. Contraception is a means of preventing pregnancy. It has various methods. Nigerians have been sufficiently exposed to contraceptive methods. However, the adequate knowledge has not translated to use and this has brought about a ripple effect of stagnation at the second stage of DTT due to her high birth rate.

Therefore, all hands are expected to be on deck as regards controlling population growth rate of Nigeria. Since one veritable means is contraception, the midwives have a key role to play in promoting not just knowledge of but use of contraceptives. This will help the available resources satisfy the populace.

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