Chapter One

Introduction

1.1 Background to the Study

It is widely believed that intentions predict behaviours. The intention of using contraceptive method is imperative to understanding a woman's future needs and improving her chances of converting those intentions into action[1]. Across the globe, contraception has been linked with the reduction of unintended pregnancies, unsafe abortion, maternal and child mortality as well as improving maternal and child health and wellbeing[2]. Generally, uptake of contraception is crucial for drastic decline in fertility and population growth rate which are essential for attaining Sustainable Development Goals (SDGs)[2]. High fertility and rapid population growth have remained hot topics for many national governments and the international community[3]. High population growth rates particularly in the face of low productivity has been associated to a variety of social problems, ranging from poverty, land scarcity, hunger, environmental degradation and political instability[4].

Modern contraception is vital for protecting women health and human rights[5]. Despite the benefits of modern contraceptive use, its prevalence is very low in sub-Saharan Africa countries compared to the other regions of the world. According to the United Nation, about 48.5 percent of women of reproductive age were using modern contraceptive worldwide. The prevalence of modern contraceptive use among women aged 15-49years varies across the regions of the world: Eastern and South-Eastern Asia (60%), European and America (58.2%), Latin America and the Caribbean (58%), Australia and New Zealand (57.7%), Central and Southern Asia

(41.8%), Northern Africa and Western Asia (34.3%), and sub-Saharan Africa (28.5%).

Even though 68% of Nigerian women are familiar with at least one contemporary method of birth control, only 9% of women in the reproductive age range (15-49 years) make use of it[9]. Traditional methods such as withdrawal (coitus interruptus), abstinence from sex, and lactation amenorrhea, which are less effective than modern methods, are more prevalent among Nigeria women[8].

Despite widespread awareness and rising contraceptive usage globally as a whole, there are still significant gaps between intentions to use contraceptive and the actual use of it, this is particularly true in the case of developing countries. In sub-Sahara Africa, the prevalence intention to use contraceptives was 45.76%. Another study revealed that nearly four in ten women had intention to use contraceptives. Of the high fertility countries, Burkina Faso had the highest intentions of contraceptive use with 59.20%, while Chad and Gambia had 20.30% and 20.64% respectively. In Nigeria, the intention to use contraceptives among women was 29%. A study conducted in Lagos Nigeria shows that the women intentions to use modern contraceptive was 37%.

Several factors have been identified to be associated with intentions to utilize contraceptive methods amongst women in various circumstances. These include socio-economic factors such as, peer influence, age at marriage, place of residence, educational level, employment and income status, religious factors, women's parity,

gender of children, husbands' educational and employment status, family and socio-demographic cultural factors[10, 11, 12]. Another study in East Africa documented that contraceptive use was also correlated to parity and attitude of women. Those socio-demographic factors were common in most African countries to affect the intentions to use contraceptives. Religion and the environment of the family were found to be the most significant socio-demographic drivers of ever using contraception[13, 14]. It was discovered that women's educational attainment, their exposure to the media, and their access to medical services are all positively correlated with their use of modern contraception[15].

Women in Nigeria would be in a better position to make decisions about their reproductive behavior if they were more knowledgeable about modern methods of contraception and even more likely to use them[16]. Long-acting reversible contraceptives, such as contraceptive implants and intrauterine devices are now available for women to use. These methods of modern contraception are exceedingly effective and practical, and they have the additional benefit of being long-lasting and requiring very little to no maintenance[17]. However, it has been observed that most Nigeria women, especially in rural areas, don't have adequate knowledge of what these contraceptives are all about, thus, are not able to utilize them. Studies show that there are several facilitators and barriers that affect the perception and use of contraceptives among married women[18, 19, 20]. According to a large number of studies, Nigerian women of reproductive age, particularly those who live in rural regions, frequently do not have knowledge about or access to contemporary contraceptives as a result of a number of supply- and demand-side

challenges[21, 22]. Less than 12 percent of women and men in Nigeria are users of some form of contraception; yet the country is one of the countries with the highest overall fertility rates in both the world and in Sub-Saharan Africa is Nigeria[23]. This is because it has a significant unmet demand in terms of family planning (21.8 percent).

Women attending antenatal healthcare clinics are known to have good knowledge about modern contraceptives; however, there is overwhelming evidence that there are several important factors influencing utilization of contraception. Adeoyo Maternity Teaching Hospital (AMTH) was chosen for this study because more than 2,000 women visit the antenatal clinic every single month, and a monthly delivery rate of approximately 900 newborns are being recorded. Also the location of the hospital, which is at the center of Ibadan community, is accessible to the lower and middle class women. Understanding the intention to use a modern contraceptive among antennal care attendees is vital in designing family planning programme and service delivery for future modern contraceptive users. Thus, this study seeks to investigate the intention to use modern contraceptives among pregnant women attending antenatal clinic at the Adeoyo Maternity Teaching Hospital.

1.2 Statement of the Problem

Pregnancies that are unplanned are a challenge that many women had to contend with. There are around 44% of pregnancies that are unwanted all throughout the world, and approximately 56% of those unintended pregnancies end in an abortion that was induced[24]. According to estimates from 2017, 214 million women in poor nations who are of reproductive age still do not have access to contraceptive. This is

due to a number of issues, including restricted access to contraceptive, a limited selection of techniques, adverse effects that are feared or experienced, opposition from cultural or religious groups, substandard quality of services supplied, and restrictions based on gender[25].

The prevalence of contraceptive use, remain low in Nigeria, which explains the proportion of reproductive aged women using modern contraceptives being below 15%[26]. Conversely, factors including cost, difficulty accessing services, and procurement difficulties have been linked with its reduced intake despite the increased knowledge on contraception. Low availability and stock-outs of preferred modern contraceptive methods are considered to be major drivers of unmet need among women of reproductive age, especially in Nigerian Public health facilities who experience long strikes of such[27].

Globally, each year nearly 350,000 women die while another 50 million suffer illness and disability from complications of pregnancy and childbirth, and Nigeria is listed among the top six countries that contribute to about 50% of maternal death annually. Despite several interventions by the federal government, Ibadan North local government still recorded a maternal mortality rate (MMR) 444/100,000 live birth in 2022, which is linked to poor adoption of the spaced childbirth programs in Oyo state. With a projected increase in Nigeria's population to 392 million by 2050, a total fertility rate (TFR) of 5.3 children per woman, and a national average annual population growth rate of 2.53 percent[28]. The country will be on track to preventing thousands of neonatal deaths in the next three decades by improving on contraception knowledge[29].

1.3 Justification of the Study

The prevalence of unwanted pregnancy and abortion continues to rise in sub-Sahara Africa[30]. Intention to use a modern contraceptive shows the proportion of childbearing women who are not currently using a modern method but who desire to utilize modern contraceptive in the future. Documenting this information is important for designing an effective family planning delivery service. Establishing and maintaining effective supply chain management is essential to making modern contraceptives available and thus helping individual achieve their reproductive goal[31]. To address the issue of unavailability of some modern contraceptives in public health facilities, understanding the pregnant women intention to use a modern contraceptive is crucial. This underscores the importance of this study[32].

It was observed in a study conducted in 6 local governments of Oyo state that the average maternal and mortality rate was 489/100,000 live births ranging from 346 to 756/100,000. The highest maternal mortality rate was found in Iseyin (756/100,000 live births) followed by 586/100,000 from Saki, 444 from Ibadan South, 430 from Ogbomosho, 374 from Atiba, and the least value of 346/100,000 live births in Ibadan.

Efforts to document intention to use contraceptives among women have been made; however, antennal care attendees in public health facilities have not been included in such studies, where as their population is important because they have higher propensity to want to use modern contraceptives[33].

Women attending antenatal healthcare clinics are known to have a lot to do with the idea of contraceptives; however, there is overwhelming evidence that there are

several important factors in influencing utilization of contraception[34]. This is a major issue affecting the use of contraceptives in Nigeria among women, and this makes a study like this very important as it will further examine and unpack hidden facts on the social phenomenon, in other to come up with pragmatic recommendations. Findings have suggested that there are significant socio-demographic and economic disparities in the methods of contraception uptake[35]. The aim of this current study will give insight how women characteristic affect intention to use modern contraception within the context of antenatal clinic. This makes a study like this very important, as it will further broaden knowledge of modern contraception.

1.4 Aim and Objectives of the Study

The aim of this study is to investigate the intention to use modern contraceptives among women attending antenatal clinic at Adeoyo maternity hospital.

Specific Objectives are to:

i. ascertain the knowledge of modern contraception among antenatal care attendees in Ibadan,
ii. determine the prevalence of ever used modern contraceptives among antenatal care attendees in Ibadan,
iii. examine the modern contraceptives use intention among antenatal care attendees in Ibadan,
iv. identify factors influencing the modern contraceptives use intention among antenatal care attendees in Ibadan.

1.5 Research Questions

The following research questions were answered in the study;

i. What are the socio-demographic characteristics among antenatal care attendees in Adeoyo Maternity Hospital Ibadan?

ii. What is the level of knowledge of modern contraception among antenatal care attendees in Adeoyo Maternity Hospital Ibadan?

iii. What are the intentions to use modern contraception among antenatal care attendees in Adeoyo Maternity Hospital Ibadan?

iv. What are the factors influencing the intention to use modern contraception among antenatal care attendees in Adeoyo Maternity Hospital Ibadan?

1.6 Significance of the Study

It is critical to gain better knowledge of socio-demographic characteristics and knowledge on modern contraceptive use of women attending antenatal clinic in order to achieve higher contraceptive use and the country's desired impact of contraceptive practice on unwanted fertility. Conducting research like this is very important for health care practitioners, program planners, policymakers, and researchers. More information about contraceptive attitudes and behaviors could help with current attempts to manage programs affecting childbearing women in Nigeria. This research will contribute to the advancement of knowledge in the field of family planning and the reasons that limit its use. Furthermore, the study will provide information and raise awareness about population issues such as unintended pregnancies and family planning among couples. These are expected to foster social

modernization, particularly family planning, and as a result, a modest family norm, thus assisting in the reduction of the problem of over-population. The findings of this study could also be used in nursing education to stress the knowledge of the facilitators and barriers to use of contraceptives among women attending antenatal clinic.

1.7 Scope of the Study

This study is limited to pregnant women assessing care at health facility. Therefore, the funding cannot be extrapolated to the Ibadan community. Many women in the population who are not pregnant may also signify their intention to use family planning. This study is also covering four major socio demographic factors which are age, occupation, educational level, and religion.

1.8 Limitation of the Study

This study has some limitations. The respondent's partners were not interviewed to be able to get their actual opinions or intentions in choosing any type of contraceptives.

1.9 Operational Definition of Terms

Contraception

Usually oral pills or implants, patches or vaginal rings. They release small amounts of one or more hormones to prevent ovulation. Devices inserted into the uterus where they release either a copper component or a small amount of a hormone (Levnorgesterol) to prevent the sperm from reaching the egg.

Lactational Amenorrhea Method

A temporary method of contraception for new mothers who's monthly bleeding has not returned. During this period, eggs are not released and so pregnancy cannot occur.

Intrauterine Devices (IUDs)

Devices inserted into the uterus where they release either a copper component or a small amount of a hormone (Levnorgesterol) to prevent the sperm from reaching the egg.

Hormonal Contraceptive Methods

Usually oral pills or implants, patches or vaginal rings. They release small amounts of one or more hormones that prevent ovulation.

Contraceptive Prevalence Rate (CPR)

The percentage of women aged 15-49 years, married or in-union, who are currently using, or whose sexual partner is using at least one method of contraception, regardless of the method used.

Unmet Need

These are women who are sexually active but not using any method of contraceptive, and report not wanting any more children or wanting to delay the next child.

Emergency Contraception or Emergency Post-Coital Contraception

It refers to birth control measures that, if taken immediately after sexual intercourse, may prevent pregnancy.

Family Size

The total number of people related by blood, (consanguinity), marriage (affinity), or adoption that live together

Fertility Rate

The average number of children a cohort of women would have at the end of their reproductive period if subjected during their whole life to the fertility rates of a given period expressed as children per woman

Birth Spacing

This is the practice of waiting between pregnancies

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Chapter Two

Literature Review

The purpose of this section is to provide a foundation for the rest of the research by doing an analysis of the published research on previous studies that have been conducted about the intentions on utilization of contraceptives. Studies on this subject that concentrate on the socioeconomic, socio-cultural, and demographic aspects that influence the utilization of contemporary contraceptives as key predictors of fertility are explored. These studies are referred regarded as "social predictors."

2.1 Conceptual Review

Global Picture of Modern Contraception

The percentage of people around the world who reported using modern contraception rose slightly from 54% in the year 1990 to 57.4% in the year 2014[1]. It is estimated that 225 million women living in developing countries would like to delay or forego having children, but they do not make use of any kind of contraception. An increase in access to family planning services could also help prevent pregnancies that are considered to be high-risk, hence preventing the loss of at least 25 percent of the lives of women and children that are now lost during pregnancy and childbirth[2]. An average woman gives birth to 2.69 children in her lifetime, putting the number of her children somewhere between 2 and 3. In acknowledgement of the significance of family planning, the WHO developed a blueprint for expedited action between the years 2005 and 2014, with the goal of

repositioning family planning on national agendas and within reproductive health services. The proposition highlights the importance of boosting efforts to enhance understanding of the essential role that family planning plays in achieving health and development goals at all levels. Family planning is an indispensable tool for accomplishing three of the Millennium Development Goals set forth by the United Nations: lowering the death rate among children, improving the health of mothers, and reducing the prevalence of diseases such as HIV/AIDS, malaria, and others.

Modern Contraception in Sub-Sahara Africa

Fertility rates have been falling in majority of developing countries, but they remain quite high in the bulk of sub-Saharan Africa, where women can expect to studies that place the prevalence of contraception in that region at 21.8%, just 17% of married women of reproductive age in sub-Saharan Africa make use of a current method of birth control. The CPR for current operations was found to be 63% in South Africa, while in Nigeria it was found to be only 1.2 percent[4]. According to a recent analysis of demographic health surveys for countries in sub-Saharan Africa, the correlation between low contraceptive prevalence rates and high levels of unmet need has resulted in both an increase in the number of births that were not planned and an increase in the rates of morbidity and mortality among mothers, newborns, and young children[5].

The Context of Modern Contraception in Nigeria

1964 marked the beginning of Nigeria's family planning program, which was initiated by the National Family Planning Council of Nigeria[6]. However, prior to

the 1980s, the Nigerian government did not consider family planning to be a high priority, therefore the responsibility of leading family planning activities fell on the shoulders of non-profit organizations and other development partners. In the late 1980s, the government of Nigeria began developing a number of programs with the intention of improving reproductive health outcomes and lowering fertility rates through family planning. This decision was arrived at as a result of an investigation on the influence unchecked population growth has on Nigeria's overall health as well as its level of economic advancement. One of them is Nigeria's national population policy, which was initially adopted in 1988 and then modified in 2004. The most recent revision took place in 2004[7]. These efforts placed an emphasis on encouraging the use of modern contraception as a top priority in order to meet national health and demographic goals[8]. The first national population program had the overarching goals of lowering the total fertility rate to an average of four children per woman by the year 2000, and increasing the prevalence of the use of contraceptives to reach 80% by that same year. In accordance with the revised population policy, the rate of maternal mortality was cut by 75% by the year 2015, the fertility rate needs to be reduced by 0.6 children per woman every five years, and the percentage of women who use contraception needs to increase by 2% each year. These goals are to be accomplished simultaneously. More recently, in response to the London Summit on Family Planning in 2012, Nigeria developed a strategy for accelerating the adoption of family planning with the goal of increasing the country's contraceptive prevalence rate to 36% by 2018[10]. At the present time, services for family planning can be obtained from the public sector as well as the

private sector, with public sector facilities providing free access to the essential supplies. In spite of significant financial investments made across the country in various family planning projects, the prevalence of contraceptive use has not increased. According to the NDHS from 2013, even though there is generally a high level of awareness regarding contraceptives, there is a relatively low level of uptake. Although only 15% of married women of reproductive age use any form of contraception, and only 10% use a modern family planning approach, there is a demand for contraception that is 16% higher than what is currently being met. There hasn't been much of a shift in the national rate since one of the factors contributing to the nation's high reproduction rate and low contraceptive prevalence is pronatalism, there is not much of an incentive for people in the nation to use birth control. These national aggregate measurements hide the significant regional differences in the usage of contraceptives that exist across the country. The use of contraception is significantly more common in the southern regions of the country than to the northern regions of the country. In northern Nigeria, the rate of women using all four methods of contraception is one of the lowest in the entire world[6]. The percentage of women who reports ever using a method of contraception ranges from 26% in Lagos State, located in the south-west of Nigeria to less than 1% in Jigawa State and Kano State, located in the north-west of the country. When the data from the 2013 NDHS were aggregated by zones, it was clear that there were significant differences in reproductive intentions and the usage of contraceptives. Fertility rates across the country range from 4.3 children per woman in the South Zone to 6.7 children per woman in the North-West Zone, with the national average

being 5.5 children per woman. The percentage of people who utilize modern methods of contraception ranges from 3% in the North-East Zone to 25% in the South-West Zone[11,12,13,14]. In addition, the combination of research approaches differed depending on the 2013 NDHS. Though the rate of contraceptive use was relatively high in most of the eastern states of the country, contraceptive use still includes more natural and conventional methods of birth control. In addition, there exist disparities in the usage of contraceptives according to factors such as socioeconomic status, place of residence, level of education, and religious affiliation. Inadequate investments in strategic behavior change communication, which is one of the many socio-cultural factors that lead to excessive fertility, are the root cause of low demand for family planning services. The most important sources of information on family planning in this country are personal relationships (such as with friends or siblings), institutions (such as schools), formal education, and medical experts[15, 16, 17]. The availability of contraceptives is also limited by a number of other issues connected to supply. Inconsistent availability of modern contraceptives, gaps in the logistics supply chain, dependency on donations, substandard services, and a lack of skilled health professionals to offer family planning services are some of these challenges.

Importance of Contraceptives

The capacity of a woman to control the number and timing of her pregnancies has a direct bearing on her overall health and well-being. The use of contraception is an effective way to forestall unwanted pregnancies and births. In addition to fostering equality between the sexes and increasing women's opportunities in the areas of

employment, education, and full participation in society, the use of contraceptives helps women exercise choice and control in relation to their reproductive potential[18].

Family planning has been determined to lower maternal mortality 32% because it enables women to delay motherhood, space out deliveries, avoid unwanted pregnancies and abortions, and control the number of children they have once they have reached their optimum family size[19, 20]. The use of FP has been praised as an important instrument for enhancing the quality of life for both women and children. In addition, it has the potential to cut the mortality rate of infants by approximately ten percent if it enables couples to space out their pregnancies by at least two years using various methods of contraception[21]. The length of time that passes between pregnancies increases the amount of time that may be spent breastfeeding the child, which is beneficial to the child's overall health[22]. Additionally, it affords moms additional time for recuperation after giving birth, both physically and nutritionally. Methods of contraception have the potential to drastically lower the infant mortality rate caused by mother-to-child transmission of HIV as well as prevent HIV-positive women from unknowingly becoming pregnant. One of the factors that contribute to the death of mothers and children is HIV (MTCT) [23]. FP programs not only help lower the rates of maternal and infant mortality by allowing the government and families to spend less money on maternal and infant mortality and morbidity, but it has also been shown that these programs improve the economic security of families, households, and communities through higher incomes, greater wealth accumulation, and higher levels of education[24]. This is because these programs enable the government and families to spend less money on maternal and infant mortality and

morbidity. In addition to this, it makes it possible for families to have up to ten children, each of whom can have a high quality of life in terms of their health, nutrition, and educational opportunities. In addition, family planning programs give women the chance to enter the workforce, which ultimately results in an increase in the income of the home[25].

Preventing Pregnancy-Related Health Risks in Women

The degree to which young people are able to make responsible sexual decisions and adhere to protective practices has a direct bearing on their overall health and well-being. As a consequence of participating in sexual activity without appropriate protection, they put themselves at risk for a number of sexually transmitted diseases, the severity of which ranged from mild to severe, and even led to early death. By making use of various methods of family planning, young people have a better chance of avoiding unintended pregnancies. This includes pregnancies involving older women, who are at a greater risk of experiencing issues related to pregnancy. Women who want to have smaller families are able to accomplish this goal with the help of family planning, which also prevents them from engaging in risky sexual practices that could result in unintended pregnancies and irresponsible parenting. According to the most recent statistics, mothers who have more than four children have a significantly elevated risk of passing away while they are giving birth to one of their children. Family planning helps reduce the number of unintended pregnancies, which in turn lowers the number of women who seek abortions, which can be dangerous[26].

Reducing Infant Mortality

Family planning allows for the avoidance of closely spaced pregnancies and births that occur at inconvenient times, both of which are factors that contribute to some of the highest infant mortality rates in the world. The higher the maternal mortality rate during labor and delivery, the higher the unborn child's risk of passing away or developing a serious illness[27].

Helping to Prevent HIV/AIDS

Family planning helps HIV-positive women reduce the likelihood of unintended pregnancies, which in turn lowers the number of HIV-positive orphans and children that are born into the world. In addition, condoms provide protection against sexually transmitted infections (STIs) like HIV as well as unwanted pregnancies for people of both sexes[28].

Empowering People and Enhancing Education

Family planning has afforded individuals the ability to obtain the information necessary to make informed choices regarding their sexual and reproductive health. Women who use family planning are opportune to advance their education and become engaged members of society, particularly through employment in non-family-related organizations. In addition, families that are smaller are able to dedicate a greater amount of time and resources to each individual child. Children who have fewer siblings tend to spend more time in school as compared to children who have a larger number of siblings[28].

Reducing Young Adult's Pregnancies

Births that are premature or have a low birth weight are more likely in pregnancies that occur in adolescents. The risk of death in infancy is increased for children who were born to adolescents. Teenage girls who were pregnant were frequently forced to give up their education. This will have repercussions for them as individuals, as well as for their families and the communities in which they live[29].

Slowing Population Growth

Family planning is vital if there is to be a reduction in unregulated population growth, which has deleterious impacts on national and local development projects, the environment, and the economy[30].

Contraceptive Method

The prevention of pregnancy is the primary objective of contraception. It is possible for a woman to become pregnant if the sperm from a man comes into touch with one of her eggs (ova)[31].

The goal of contraception is to avoid this from happening by separating the egg from the sperm, putting an end to the creation of eggs, and preventing the fertilized egg, which results from the combination of a sperm and an egg, from attaching to the lining of the womb.

There are different methods of contraception, and it is important to choose one that is suitable for individual's health status and circumstances.

Types of Contraceptive Method

1. Traditional method
2. Natural method
3. Modern/Artificial Contraceptive Method:

a. Method of the Barrier

b. Method of Hormones

c. Method of Not Using Hormones,

d. Permanent approach

Traditional Method

Methods of contraception that are considered traditional Prior to the introduction of modern birth control, both men and women resorted to antiquated methods of birth control. These methods included the use of condoms and drugs that altered hormone levels. Despite the unanticipated success of some of these strategies, careful attention and strategic planning are still required due to the irreversibility of their effects[32, 33]. Before the 20th century, the methods that were used weren't necessarily as reliable or productive as they are now. Consuming lead and mercury for the purpose of controlling conception was common practice among Chinese women. Unfortunately, this practice frequently led to infertility or even death. Magicians in Europe throughout the middle centuries recommended that women wear the dismembered foot of a weasel around their necks or wear the testicles of a weasel on their thighs. Both of these practices were thought to bestow supernatural powers. Other examples of old amulets include the anus of a hare, flax lint twisted in a towel and washed in menstrual blood, desiccated cat livers, or shards of cat bones (but only the pure black ones). Also, in European folklore, it is said that a woman can prevent herself from becoming pregnant by wandering around an area where a pregnant wolf has urinated three times. This is supposed to be effective. Women in

New Brunswick, Canada, used to swallow dried beaver testicles that had been fermented in potent wine; meanwhile, young people in Australia used candy bar wrappers as condoms until the 1990s. Both of these practices were common until the 20th century. Many other traditional methods, particularly herbal medicines, have been found by modern research to be effective; this is particularly the case with some herbal therapies[34].

The following are some instances of traditional practices that are practiced in Nigeria, according. The use of traditional rings, waist beads or amulets, honey, acacia leaves, and lint to block sperm, soaking sponges in lemon juice, using pastry (mixing dates, acacia tree bark, and honey into a paste, applying this mixture to seed wool, and inserting the seed wool vaginally), and hanging brooms covered in decoction on bedroom doors are examples of these practices[35]. Appliance methods and non-appliance methods are the two categories that fall under the category of traditional contraceptive methods.

People are given a specifically prepared stew, herbal tea, or chewing sticks as part of the Appliance Methods, which entail special preparations manufactured by herbalists or traditional healers. These preparations are then delivered to patients. On a circular path, the concoction might also be swallowed by spirits or ingested by domestic animals acting on behalf of the woman. Another possibility is that the mixture is consumed by both[36]. One method of long-term birth control is known as injectable (scarification), and it involves making a small incision in the spinal region or supra pubic area of a man or woman, followed by the injection of a specially produced material. On the other hand, there is a method of long-term birth

control known as intrauterine device (IUD) that does not require surgery. The use of barrier strategies, on the other hand, entails the donning of magical waistbands, rings, and amulets, as well as the application of chemical and physical sperm killers.

To use the self-administered non-appliance method, you must abstain from sexual activity and avoid having sex when you are menstruation. One method is to drink warm solutions of salt, alum, vinegar, lemon, potassium, or caustic soda. Another method is to drink warm solutions of potassium or caustic soda. In addition, abortion has sometimes been used as a method of preventing unwanted pregnancies. Young adults are more likely to rely on traditional methods due to their mechanisms, greater convenience, fear of the real or imagined ill effects of modern methods, restrictions imposed by religion or culture, a severe lack of accessibility, and a high expense. Other reasons include: fear of the real or imagined ill effects of modern methods; fear of the real or imagined ill effects of modern methods; fear of the real Along with other people[37].

Advantages of Traditional Methods Contraceptive

1. Traditional techniques of family planning are often more cost-effective than their more modern counterparts.

2. Members of the general public will have an easier time gaining access.

3. The general populace is more open to the idea of it.

4. Consultations are swift and pleasant.

5. The user places a high value on the environment's level of expertise as well as the positive relationship with the service provider.

Disadvantages of Traditional Methods Contraceptive

1. There is not enough evidence from the scientific community to demonstrate that conventional methods are effective.

2. The dose instructions for traditional medicines are not always reliable. However, many healthcare practitioners now make use of measurements whenever they are dispensing medication.

4. Most of the production measures utilized by traditional medicine increase the risk of pelvic inflammatory diseases as well as infertility which is majorly due to unhygienic environment which increases the risk of infection spread.

5. Some customs and actions may be detrimental and irreversible, which may result in damage to a woman's uterus or render her sterile.

Natural Contraceptive Methods

Natural methods of contraception are referred to as such since they do not involve the use of any kind of machinery or artificial hormones to achieve the desired result. Instead, a man and a woman need to abstain from having sexual relations while an egg is still in a state where it can be fertilized by sperm.

It is possible to determine which parts of the menstrual cycle are fertile and which are infertile by observing the normal physiological changes and symptoms that occur throughout the body. Typically, no pharmaceuticals or advanced technologies

are required to accomplish this. These methods are also known as fertility-based awareness approaches in some circles[38, 39].

Types of Natural Contraceptive Methods

Classifications of natural family planning methods, they are;

1. Total abstinence
2. Periodic abstinence (fertility awareness) method.
3. Use of breast feeding or lactation amenorrhea method (LAM).
4. Coitus interrupts (withdrawing or pulling out) method.
5. Douching and urination.

Periodic Abstinence (Fertility Awareness) Method

1. Rhythm (Calendar) / Cycle bead/ mobile app(period tracker).
2. The BBT method, which stands for "basal body temperature".
3. Cervical mucus (ovulation) method.
4. Sympto-thermal method.
5. Ovulation indicator testing kits.

Calendar / Rhythm Method/ Cycle bead/ Mobile App (Period Tracker)

This strategy to periodic abstinence is by far the most common of those that are available. The calendar approach is a method that is based on calculations and forecasts the first and last fertile days of future menstrual cycles by using information from previous cycles. This strategy is useful for couples who are trying to conceive. For this technique, it is vital to have an understanding of the fertile and infertile periods that occur during a woman's menstrual cycle. The regularity of the menstrual cycle and the fact that an ovum (egg) can only be fertilized within the

first twenty-four hours after ovulation are the two pillars around which it is built[34]. From the shortest cycle, subtract 18 to get the first day of the fertile phase; from the longest cycle, subtract 11 to get the last day; and avoid sexual activity, use a barrier method, or use withdrawal during the calculated fertile phase. If you have irregular cycles, it is necessary to identify the longest and shortest cycles that have been recorded over a period of six to eight cycles. "Periodic Tracker" is a mobile application that can be easily downloaded onto phones and is designed specifically for use by young ladies as a helpful reminder of their monthly period calendar[40].

When employed on its own, the calendar method is antiquated and ineffective due to the fact that it is only effective in preventing conception approximately 80% of the time.

Diagrammatic Presentation of Calendar Method

When utilizing this method, it is not required to perform daily monitoring of reproductive indicators. However, it has a high rate of failure, and it may be difficult to use for women who have irregular menstrual cycles. In addition, it takes a significant amount of effort to understand how to make effective use of it.

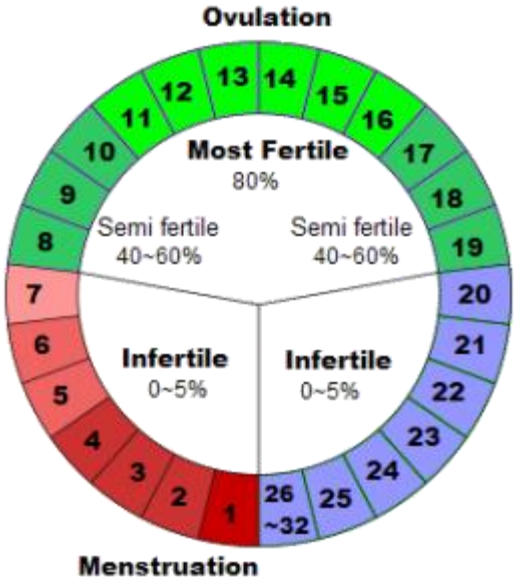

Figure 2.0 Calendar Method

Source [43]

Basal Body Temperature (BBT) Method

The approach known as basal body temperature is based on the observation that women's resting body temperatures increase by approximately 0.3–0.5°C during and after ovulation as a result of increased corpus-luteal secretion of progesterone. This rise in temperature can be attributed to increased progesterone production in the corpus luteum. Ovulation occurs when a woman's core temperature rises for three days in a row, and it continues to be at this higher level until the beginning of the succeeding menstrual cycle[41]. This indicates that a woman has become pregnant. This strategy does not have any unintended consequences. It is essential to have a specialized thermometer, and it is recommended that married couples discuss birth control options.

In order to accurately employ the basal body temperature method, a woman is required to take her temperature first thing in the morning before getting out of bed. The use of a specialist thermometer that is both more accurate and sensitive than an oral thermometer is required, and it is imperative that one takes close note of the daily temperature fluctuations. You are required to complete this task once a month. Calculators found online make it possible for women to track their basal body temperatures.

If a woman wants to use her basal body temperature as a method of birth control, she should refrain from engaging in sexual activity from the moment her temperature drops until at least 48 to 72 hours after it has risen again. This is the minimum amount of time that should pass[42].

Cervical Mucus Method (CMM)

The cervical mucus technique, also known as the Billings method, is based on the identification and interpretation of changes in cervical mucus and vaginal sensations as a result of variations associated to the oestrogen cycle[43].

Between the time of her most recent menstrual cycle and the period when the cervical mucus changes, she is free to participate in sexual activity if she so chooses. It is recommended that she limit her sexual activity during this time to once every other day because the presence of seminal fluid makes it more difficult to determine the type of cervical mucus that she is making. If a woman wants to avoid becoming pregnant after seeing a change in the cervical mucus she produces, she should refrain from engaging in any sexual activity for at least three to four days.

According to the explanation of natural family planning methods, the cervical gland's secretion of mucus during ovulation changes from a feeling of dryness in the vagina (characterized by thick, viscous, and sticky mucus) to a feeling of wetness in the vulva (characterized by thin, white, slippery, and stretchy thread-like, transparent strands similar to uncooked egg white). Therefore, it is not safe to use these methods during this time because it could result in an It is recommended that women change their genitalia every other night to reduce the risk of confusing their sperm for cervical mucus. In addition, it is safe to do so beginning in the evening of the fourth day after the peak day and continuing until the beginning of the period that comes after it. Because a woman's cervical mucus begins to dry up after ovulation, the peak day of cervical or vaginal wetness occurs on the day before the last day of cervical or vaginal wetness. The following is an excerpt from the directive: "In order to determine the color and consistency of the mucus, one can use a clean cloth or piece of paper to record the mucus pattern every morning and every time after using the restroom." You may get an idea of how elastic and slippery the mucus secretion is by giving it a good rub. No matter how thick the mucus is, you should avoid having sex on the day in question until the evening that comes three days after the "peak day"[44,45].

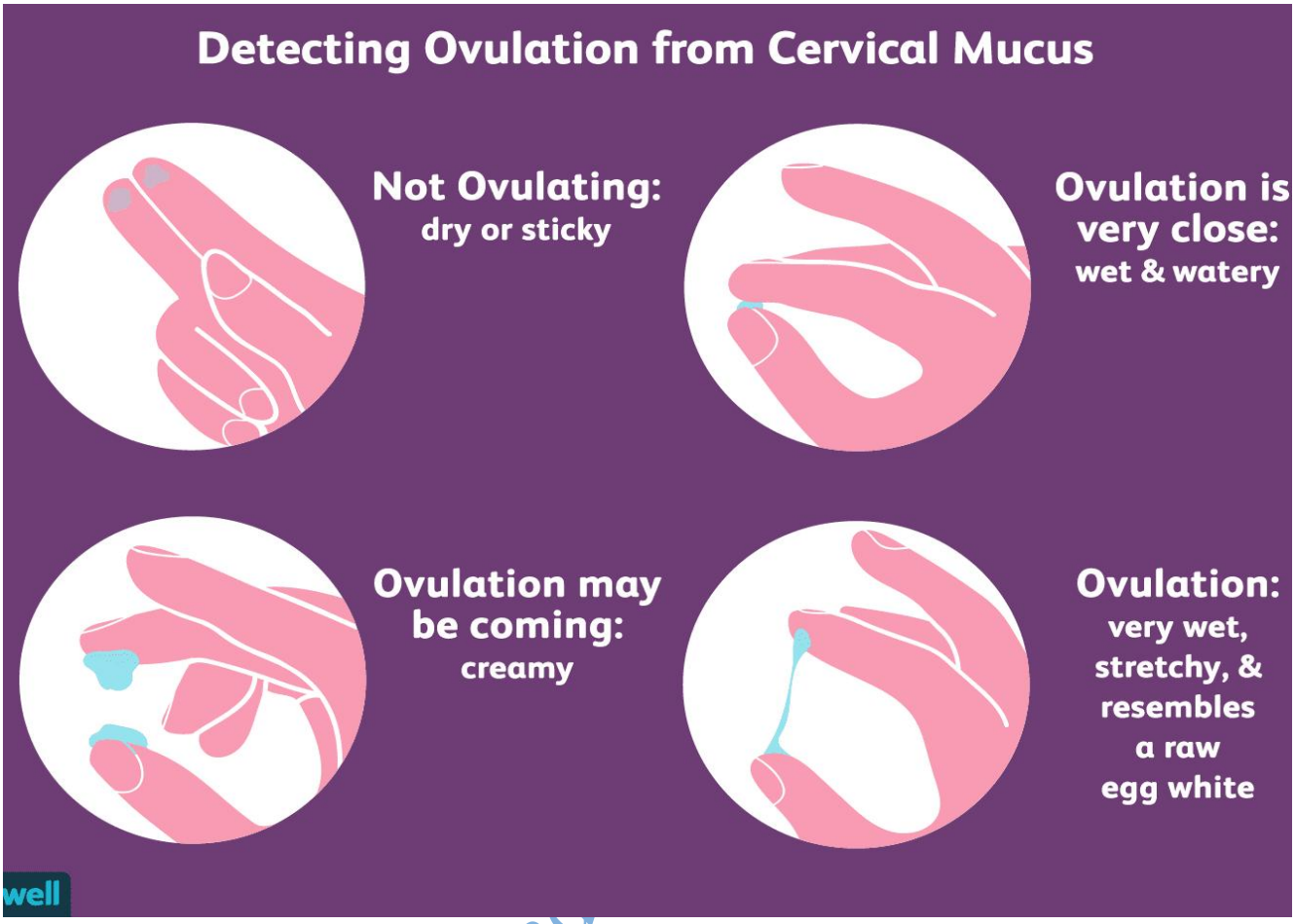

Figure 2.1 Cervical Mucus Method

Source: [47]

Ovulation Indicator Testing Kits

An ovulation prediction kit enables a woman to determine the time of day on which she is most likely to release an egg. Using this kit, the amount of luteinizing hormone (LH) present in the urine can be determined. Because it plays a role in the formation of an egg in the ovary, the amount of luteinizing hormone normally rises between 20 and 48 hours before ovulation. [Cause and effect] This rise, which can be noticed 8 to 12 hours later in a woman's urine, is referred to as the luteinizing

hormone surge. It occurs when a woman's level of luteinizing hormone increases. With the help of the ovulation prediction kit, one is able to ascertain the level of luteinizing hormone present in their urine[43].

Figure 2.2 Ovulation indicator testing kit

Source: [44]

There are a few different ovulation prediction kits that can be found in pharmacies, and the level of sophistication they offer ranges from simple to sophisticated. The most basic test involves having the lady urinate into a test stick and observing how the color of the urine changes in response to the presence of luteinizing hormone[45]. The intensity of the color has been shown to have an inverse correlation with the amount of luteinizing hormone present in her urine. A woman will begin testing her urine two to three days earlier to the time when she believes she will be ovulating, taking into account the dates of her previous monthly cycles[46]. The optimal times for fertilization are two days before ovulation, the day of ovulation itself, and the

day after ovulation. Having sexual activity within the first 24 hours after a surge in luteinizing hormone raises a woman's chance of becoming pregnant. Ovulation prediction kits can also warn a woman that she is about to ovulate, at which point she should begin taking the appropriate contraceptive measures. Nevertheless, its primary objective is to increase a woman's chances of carrying a pregnancy to term[47].

Use of Breast Feeding or Lactation Amenorrhea Method (Lam)

The concept that a woman cannot become pregnant while she is still nursing her child serves as the basis for the Lactational amenorrhea method (LAM), which was developed to treat infertility caused by breastfeeding. It is possible for a woman to experience a delay in the onset of ovulation after giving birth if she is breastfeeding her infant. Women who are breastfeeding often begin ovulating again ten to twelve weeks after giving birth. This is the case for most women[48].

However, the method is not thought to be effective enough to be used as the only source of birth control because ovulation can happen before a woman resumes her menstrual cycle, a woman who is breastfeeding her child may start ovulating again without recognizing she is fertile[49]. This is because ovulation can happen before a woman's period resumes. If this happens and the mother then engages in sexual activity while unprotected, she runs the risk of becoming pregnant even while she is still breastfeeding her kid. If a woman wants to avoid becoming pregnant again, she must start using an effective method of contraception, even if she is breastfeeding her child[49, 50].

Modern /Artificial Methods of Contraceptive.

Barrier Method is the use of devices and drugs to prevent live sperm from meeting the ovum and also to prevent sexually transmitted infections. It is very important to use the devices correctly and consistently at every point of sexual intercourse. However, it requires high degree of motivation and determination on the part of the user[51].

Types of Barrier Method

Physical Methods: Condoms, diaphragm, and Vaginal Sponge

Chemical methods: Foam tablets, foam aerosol, cream, suppositories, and soluble films.

Male Condom

The use of condom was aggressively promoted in 1924 out of the concern to prevent soldiers from infecting their wives. A male condom is a protective covering made of a thin film that is applied over the penis. A pregnancy can be avoided with the use of a condom since it stops sperm from entering a woman's body. An extremely thin layer of latex (rubber) or polyurethane is used in the construction of a male condom, which is designed to be worn over an upright man's penis (plastic). It is necessary to evacuate the space between the air and the teat end of the condom in order to ejaculate. To avoid accidental discharge of seminal fluid after sexual activity, the condom needs to be withdrawn from the vagina in a careful manner. It is recommended that a brand-new condom be used for each sexual encounter. It is most effective in preventing sperm from being deposited in the vagina when it is used in conjunction with spermicidal jelly and is administered prior to sexual

contact. It is highly important to use condoms correctly and consistently during coitus. Condoms are 98% effective if used correctly[52, 53, 54].

Figure 2.3 Male Condom

Source: [55]

Female Condom

This is a seven-inch-long pouch barrier method used by females that covers the cervix, virginal canal and immediate area of the virginal. It became available in U.S in 1994. It is a liner made of nitrile, a type of synthetic rubber that is latex-free, with a ring at each end. This, like the male condom, could also provide protection against many sexually transmitted diseases (STDs), and can be inserted eight hours before sex. Female condom is rarely used in Nigeria. Before engaging in sexual activity, a female condom, which resembles a thin sheath made of polyurethane, is inserted into the vagina. It has two flexible rings: one at the closed end that can be removed

to assist with insertion, and one at the open end that is fixed and rests on the vulva to keep the condom in place. One of these rings can be removed to assist with insertion, and the other can be removed to help keep the condom in place[56].

Figure 2.4 Female Condom

Source: [57]

Diaphragm

The diaphragm is a thin dome-shaped cap, with a springy and flexible rim, that is placed over the cervix (high inside the vagina) before an act of sex. Before insertion into the vagina, it is first coated with a spermicidal substance (jelly, canned foam, or cream). Diaphragms come in various sizes and require first time fitting or practical instruction by a specifically trained provider. Usually, there is need for pelvic examination to determine the size of the diaphragm to be given by the provider. The

diaphragm serves as a physical barrier to sperm, preventing it from entering the cervix, but more importantly, it holds the spermicidal cream or gel against the cervix and thus immobilizes sperm near the cervical canal. The diaphragm is designed to be held in place by the walls of the vagina, the posterior fornix, and the pubic arch; unlike the cervical cap which is held in place by suction. Diaphragms are commonly made of latex, but silicone and plastic diaphragms are also available for use[58, 59].

Figure 2.5: Diaphragm

Source: [60]

Cervical Cap

A cervical cap is another barrier method of birth control that is available. Although it is smaller than a diaphragm, it is responsible for protecting the cervix. In the same way that a diaphragm is utilized in conjunction with spermicide, a cervical cap is as well. The cervical cap prevents sperm from attaching an egg and limits the amount of blood that can enter the uterus[50].

Figure 2.6: Cervical Cap

Source: [61]

Spermicide

Spermicidal is a barrier method of birth control used by women. These are foamy or creamy chemicals placed inside the vagina to kill sperm (plate3). These may also provide some protection against sexually transmitted diseases. It is recommended

that spermicides be used with other birth control measure (especially latex condom) to improve its effectiveness[62].

Figure 2.7: Spermicide

Source: [63]

Hormonal Methods

Combined hormones (pill, patch,) Progestin-only (Depo-Provera, progestin-only pill)

Estrogen and progesterone, or just progesterone by itself, are both components that can be found in hormonal birth control options. It does this by either inhibiting the release of eggs from the ovaries, reducing the thickness of the uterine lining, or increasing the amount of mucus present in the cervix. All of these things work together to prevent sperm from reaching the egg. It is possible to take hormonal contraceptives by mouth, inject them intravenously or subcutaneously, apply them

topically to the skin as a patch, or even insert them directly into the uterus or vagina. Examples of hormonal contraception include oral tablets such as the combination pill, the progesterone-only-pill (POP), the post-coital pill, the once-a-month pill, the male pill, and the once every three months pill, formulations for injection, subcutaneous implants, vaginal rings, and depot (slow release) administration[62, 63].

Oral contraceptives, such as the combination pill, typically contain 10 milligrams (mg) of progestin and between 100 and 200 micrograms (mcg) of oestrogen. Oral contraceptives, in addition to preventing pregnancy, have a number of health benefits, including regulating menstrual cycles and reducing both the frequency and the duration of menstrual periods. These benefits are in addition to the fact that they prevent conception. This can be helpful for women who have excessive bleeding and a lack of iron since it allows them to store more iron. In order for the pill to have any effect at all, it must be consumed in the specified order. Starting on day five of the menstrual cycle, it is taken orally for a total of 21 consecutive days. If a person forgets to take one of her pills, it is customary for her to consume it inside the subsequent 12 hours. Otherwise, she won't be able to effectively avoid becoming pregnant even if she takes the pill for the rest of her cycle[64].

There is a birth control pill (oral contraceptive) available in the form of a pack of 28 milligram pills. The hormone progesterone is naturally produced by your body, but this product adds progestin, which is a synthetic version of the hormone. In the small pill, the amount of progestin that is taken is reduced, and estrogen is not present. As a result of the thickening of the mucus that occurs within the cervix, it is more difficult for the sperm to reach the egg. In addition, because it stops the

fertilized egg from implanting itself, it thins the lining of the uterus, which might lead to infertility. It has the same effect as other types of birth control pills, namely that it prevents ovulation from occurring. Women of reproductive age who are unable to take estrogen as a result of an underlying medical condition may be candidates for the mini pill treatment option. For nursing moms, the progestin-only pill is preferable to traditional birth control tablets. This is due to the fact that the mini pill will not have an effect on the amount of milk that is produced, but it does not prevent the spread of sexually transmitted illnesses[64, 65].

Emergency Contraceptive Pill

Emergency contraceptives work to prevent pregnancy by postponing the onset of ovulation. It is recommended to take it immediately following sexual activity in which protection was not used. In addition, it stops or delays the release of an egg from your ovaries until the sperm have lost their ability to reproduce normally[66]. It accomplishes this by disrupting the normal movement of the sperm's internal components, which prevents the sperm from fertilizing an egg. Once the egg has been fertilized, it is no longer capable of exerting any influence on either the mother or an embryo that is already developing. ECP contains progesterone, a hormone that is completely risk-free for human consumption and poses no health risks even when used in excessive quantities. If taken after conception has begun, there is a risk that it will cause an abortion.[66, 67, 68].

Figure 2.8: Emergency Contraceptive Pill

Source: [69]

Contraceptive Injection

The injection of Depo-Provera can be used as an efficient technique of long-term contraception. It includes high doses of the hormone progestin and stops ovulation from occurring for around eight to twelve weeks. On the other hand, the benefits only last for around three months until another injection is necessary to maintain the birth control's effectiveness as a method of birth control.[69]

Noristerat, (In Injectable Form): This injection contains progestogen, which thins the lining of the womb in order to prevent the release of an egg and thickens the mucus in the cervix in order to make it more difficult for sperm to access the ovum. Both of these actions prevent pregnancy and there may be a delay of eight weeks after receiving the injection[70].

Figure 2.9: Contraceptive Injection

Source: [71]

Intrauterine Contraceptive Device (IUCD)

An intrauterine contraceptive device (IUCD) is a method of birth control that involves inserting a contraceptive into the uterus (womb) of a woman in order to prevent conception (pregnancy). The IUCD can take the form of a coil, loop, triangle, or T and is made of either plastic or metal[59]. The intrauterine device is widely regarded as one of the most advanced, risk-free, and financially viable methods of birth control now on the market (IUCD). It is used by more women than any other type of birth control that is reversible all over the world. First generation intrauterine contraceptive devices (IUCDs) are typically used to refer to non-medicated or inert IUCDs. Hormone-releasing IUCDs are the second type of IUD, and their development was motivated by a desire to improve the efficacy of birth control while also reducing the possibility of unintended side effects. On the other hand, they are more expensive and have to be replaced after five years, whereas copper IUDs can be worn for up to ten years without losing their effectiveness[70, 71].

Figure 2.10: Intrauterine Contraceptive Device

Source: [73]

Vasectomy

Vasectomy is an option that should be considered as a method of birth control for men who have already reached the maximum number of children they want to have in their family or who have made the choice not to have children in the future. Ejaculation, sometimes known as "cum," is the process by which sperm are expelled from the penis. The testicles, sometimes known as the "balls," are responsible for the production of sperm, which is then transported to the vas deferens, also known as the "tubes," where it combines with the ovum. The vasectomy technique entails cutting and tying off these tubes before proceeding with the surgery. The testicles continue to create sperm even after a vasectomy; however the sperm is ingested by the body and there are no sperm present in the semen[74,75,76.]

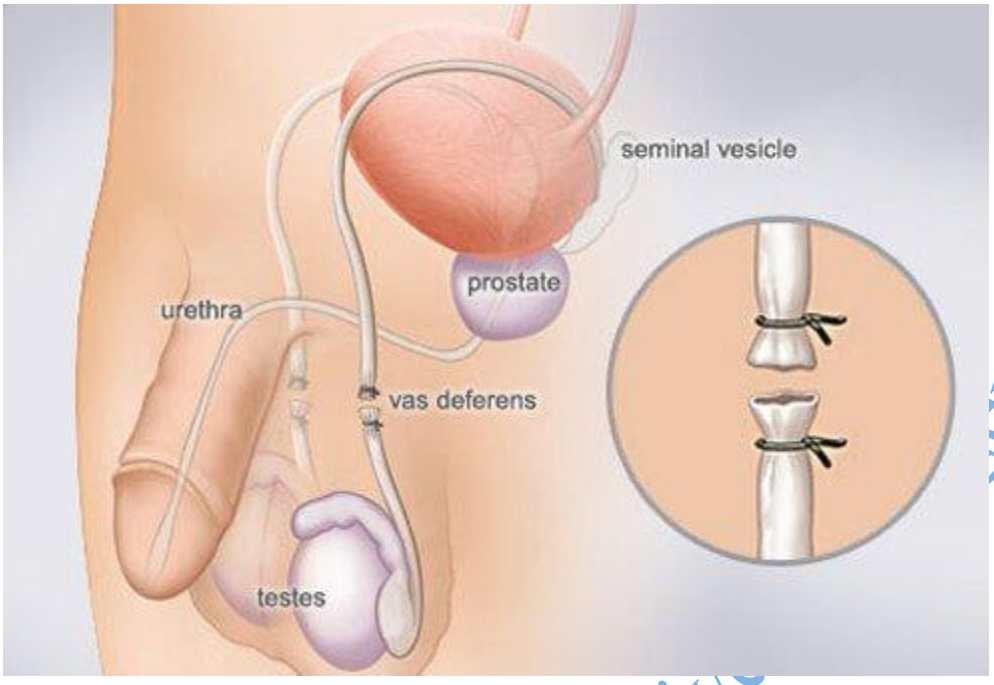

Figure 2.11: Vasectomy

Source: [77]

2.2 Theoretical Review

Combined Oral Contraceptives (COCs) or "the Pill: Contains two hormones (estrogen and progestogen), which Prevents ovulation (the release of eggs from the ovaries) Greater than 99% with correct and consistent use and reduces risk of endometrial and ovarian cancer.

Progestogen– only pills (POPs) or "the minipill" Contains only progestogen, thickens cervical mucus to block sperm and egg from meeting and prevents ovulation. Its effectiveness 99% with correct and consistent use can be used while breastfeeding; must be taken at the same time each day[73].

Implants: are small, flexible rods or capsules placed under the skin of the upper arm; it contains progestogen hormone which thickens cervical mucus to block

sperm and eggs from meeting and prevents ovulation. Effectiveness is 99% with correct and consistent use and healthcare provider must insert and remove; can be used for 3-5 years depending on implant; irregular vaginal bleeding is common but not harmful.[73, 74, 75].

Progestogen only injectables are injected into the muscle or under the skin every 2 or 3 months, depending on product. It thickens cervical mucus to block sperm and egg from meeting and prevents ovulation. It is 99% effective with correct and consistent use. Delayed return to fertility (about 1-4 months on the average) after use; irregular vaginal bleeding is common, but not harmful[77].

Monthly Injectables or combined injectable contraceptives (CIC**):** Are injected monthly into the muscle, contains estrogen and progestogen Prevents the release of eggs from the ovaries (Ovulation). It is 99% effective with correct and consistent use, Irregular vaginal bleeding common, but not harmful[78].

Combined Contraceptive Patch and Combined Contraceptive Vaginal Ring (CVR): Continuously releases 2 hormones – a progestin and an estrogen- directly through the skin (patch) or from the ring, Prevents the release of eggs from the ovaries (ovulation). The patch and CVR are new and research on effectiveness is limited. Effectiveness studies report that it may be more effective than the COCs, both as commonly and consistent or correct use. The Patch and the CVR provide a comparable safety and pharmacokinetic profile to COCs with similar hormone formulations[68].

Intrauterine Device (IUD): Copper containing; Small flexible plastic device containing copper sleeves or wire that is inserted into the uterus. Copper component

damages sperm and prevents it from meeting the egg, it is 99% effective with correct and consistent use, longer and heavier periods during first months of use are common but not harmful; can also be used as emergency contraception[69].

Intrauterine Device (IUD) Levonorgestrel: A T-shaped plastic device inserted into the uterus that steadily releases small amounts of levonorgestrel each day. Thickens cervical mucus to block sperm and egg from meeting. It is 99% effective with correct and consistent use, longer and heavier periods during first months of use are common but not harmful; can also be used as emergency contraception[70].

Male Condoms: Sheaths or coverings that fit over a man's erect penis Forms a barrier to prevent sperm and egg from meeting. It is 98% effective with correct use also protects against sexually transmitted infections, including HIV[71].

Female Condoms: Sheaths or linings that fit loosely inside a woman's vagina, made of thin, transparent, soft plastic film, Forms a barrier to prevent sperm and egg from meeting and it is 90% with correct and use, also protects against sexually transmitted infections, including HIV[72].

Male Sterilization (Vasectomy): Permanent contraception to block or cut the vas deferens tubes that carry sperm from the testicles.Keeps sperm out of ejaculated semen >99% after 3 months semen evaluation. 3 months delay in taking effect while stored sperm is still present; does not affect male sexual performance; voluntary and informed choice is essential[73].

Female Sterilization: also known as (tubal ligation): Permanent contraception to block or cut the fallopian tubes. Eggs are blocked from meeting sperm, >99% effective. Voluntary and informed choice is essential[74].

Lactational Amenorrhea Method (LAM): Temporary contraception for new mothers whose monthly bleeding has not returned; requires exclusive or full breastfeeding day and night of an infant less than 6 months old. It prevents the release of eggs from the ovaries (ovulation). It is 99% effective with correct and consistent use, 98% as commonly used. A temporary family planning method based on the natural effect of breastfeeding on fertility[75].

Emergency Contraceptive Pills (ulipristal acetate 30mg or levonorgestrel 1.5 mg): Pills taken to prevent pregnancy up to 5 days after unprotected sex. Delays ovulation if all 100 women used progestin-only emergency contraception, one would likely become pregnant, and it does not disrupt an already existing pregnancy[76].

Standard Days Method or SDM: Women track their fertile periods; (usually days 8 to 19 of each 26-to-32-day cycle) using cycle beads or other aids. Prevents pregnancy by avoiding unprotected vaginal sex during most fertile days, 95% effective with consistent use. Can be used to identify fertile days by both women who want to become pregnant and women who want to avoid pregnancy. Correct and consistent use requires partner cooperation[77].

Basal Body Temperature (BBT); Method Woman takes her body temperature at the same time each morning before getting out of bed observing for an increase of 0.2 to 0.5 degrees C. Prevents pregnancy by avoiding unprotected vaginal sex during fertile days, 99% effective with correct and consistent use. 75% with typical use of FABM If the BBT has risen and has stayed higher for 3 full days, ovulation

has occurred, and the fertile period has passed. Sex can resume on the 4th day until her next monthly bleeding[78].

Two Day Method: Women track their fertile periods by observing presence of cervical mucus (of any type, color, or consistency). They prevent pregnancy by avoiding unprotected vaginal sex during most fertile days; 96% effective when used correctly and consistently, 86% effective with typical or common use. It is difficult to use if a woman has a vaginal infection or another condition that changes cervical mucus. Unprotected coitus may be resumed after 2 consecutive dry days (or without secretions)[79].

Sympto-Thermal Method: Women track their fertile periods by observing changes in the cervical mucus (clear texture), body temperature (slight increase) and consistency of the cervix (softening). Prevents pregnancy by avoiding unprotected vaginal sex during most fertile. 98% effective with correct and consistent use, reported 98% with typical use. May have to be used with caution after an abortion, around menarche or menopause, and in conditions which may increase body temperature[80].

Calendar Method or Rhythm Method: Women monitor their pattern of menstrual cycle over 6 months, subtracts 18 from shortest cycle length (estimated 1st fertile day) and subtracts 11 from longest cycle length (estimated last fertile day), The couple prevents pregnancy by avoiding unprotected vaginal sex during the 1st and last estimated fertile days, by abstaining or using a condom. It is 91% effective with correct and consistent use, 75% with common use. May need to delay or use with

caution when using drugs (such as anxiolytics, antidepressants, NSAIDS, or certain antibiotics) which may affect timing of ovulation.

Withdrawal (Coitus Interruptus): Man withdraws his penis from his partner's vagina and ejaculates outside the vagina, keeping semen away from her external genitalia, tries to keep sperm out of the woman's body, preventing fertilization. 96% effective with correct and consistent use 73% as commonly used One of the least effective methods, because proper timing of withdrawal is often difficult to determine, leading to the risk of ejaculating while inside the vagina. ***(Source: WHO, 2018)***.

Factors that Determine the Level of Acceptability and Utilization of Contraceptives

Family planning is widely regarded as an important intervention that must take place in order to accomplish Sustainable Development Goals three (3), four (4), and five (5). This is due to the fact that it has been demonstrated to promote health, prevent pregnancies that were not planned, and avoid abortions that are dangerous. In addition, it has been demonstrated that the practice of family planning promotes gender equality as well as women's economic and educational empowerment[81].

Awareness of Availability of Contraceptive Methods among women

The provision of services for pregnant women, new moms, and children must necessarily include the provision of contraceptives. It plays a significant role in reducing fertility by increasing the amount of time that passes between pregnancies and making it easier for women of reproductive age to space their pregnancies out, both of which are essential to reducing the likelihood of maternal and prenatal

complications resulting from having children at a younger age. Because of this, there is a potential for a reduction in the mortality rates of infants, children, and mothers[82].

According to a study conducted by Akokuwebe and Ojo, even though young adults in Osun State, Nigeria, had access to a significant amount of information regarding family planning, very few of them actually used it[83]. This resulted in a low number of people using contraceptives and was also associated with a high mortality rate. It is estimated that there are 610,000 abortions performed annually in Nigeria. Unwanted pregnancies can happen to women of any age, but young women are especially susceptible to having them. Despite the level of awareness, there is a shortage of comprehensive information regarding contraceptives and help[84].

Religious Inclination/ Cultural Believes

A religious difference is a laudable factor, which can also be responsible for low uptake and use of family planning among women of reproductive age in Nigeria. The two most practiced religion in Nigeria are Islam and Christianity, of which low uptake of family planning is predominant among the people practicing Islam while the Christians have high uptake of family planning[86]. The reasons for low uptake of family planning by the Muslims might be expected; firstly, is the cultural believe that "God has placed children in the womb of a woman and until they are all given birth to, you do not stop". Another reason might be as a result of the fact that Islam permits polygamy and so most thought that, giving birth to many children will make their husband give them more attention. The uptake of family planning among

the Christians on the other hand is higher when compared to their Muslim counterparts probably due to the fact that, Christianity does not support polygamy and thus, limiting the number of children a woman can give birth to. The prevalence of contraceptives utilization is very low in the northern part of Nigeria, maybe due to their early involvement in marriage and their cultural believe that a lady's second menstrual should happen in her husband's house. This encourages early marriage and by implication leads to low uptake or unmet need for contraceptives[87].

Fear of Undesirable Effects

One's lack of knowledge and awareness might have an effect on the way they feel about something that has happened or is being done. The fear of experiencing unwanted negative side effects, such as excessive bleeding, restlessness, and elevated blood pressure, is the primary factor that prevents people from utilizing family planning methods. Some women fear that their husbands will leave them if they are unable to have children, while others are concerned that the use of various methods of family planning could result in death, infertility, or the loss of the ability to have children in the future[88]. That this worry remains in spite of the fact that family planning has a great many benefits that far outweigh its relatively few disadvantages, which are only experienced by a minority of those who use the method[89].

Misconception

There is a belief among the people, who lacked proper knowledge of family planning, and this makes them to overblown the side effect to other women and because they also lack the understanding, they believe the wrong information and turn down the family planning. For example, these sources frequently promoted myths about how family planning causes infertility, birth defects, won't allow a woman to become pregnant and bear children in their afterlife, etc., and they exaggerated rare side effects by portraying them as uncontrollable vaginal bleeding and significant weight gain. Additionally, these sources portrayed rare side effects as preventing a woman from becoming pregnant and bearing children in their afterlife. Because it provides them reason to assume that using family planning may cause them to become infertile or to have children, this concerning knowledge causes women to be dissuaded from employing family planning methods[90].

Husband Approval

The cultures of the majority of countries in the world, particularly those that are still developing, are still dominated by men. This is especially true of emerging nations. For instance, in the Sub-Saharan region of Africa, traditional beliefs award men responsibility over women's reproductive capability. Therefore, we could anticipate that a woman may need the approval of her husband before adopting family planning methods. This assertion is supported by many studies; for instance, in a study, found out that about 33.3% of respondents cited their husband disapproval as the reason for not up taking family planning method in keeping with the cultural norm that whatever the husband did not approve of, must not be done[65]. This trend

seems to be a generalized phenomenon in Africa because similar results were obtained in Ghana, Kenya, Angola and other African countriesalso recognized that, spouse communication about family planning, husband-wife agreement and acceptance were the major hurdle facing family planning in Nigeria, they posited that if the husband approves the use of family planning, the women will uptake it[91].

Unmet Need of Family Planning

The level of unmet demand for family planning services is still an important indicator of how well countries throughout the world are doing in reducing the rates of maternal death and hazardous sexual behavior. In light of the findings of the demographic health survey, it has been determined that the northern part of the country has a lower prevalence of unmet demand. However, there has been a shift in the unmet requirements in the southern region from the South-West to the South-South, which may be attributed to the improved education and westernized lifestyles in Southwestern Nigeria. This shift in the unmet requirements in the southern region has occurred. The reason for this reduced level of unmet needs in the south-west Nigeria is probably due to westernization and industrialized nature of the region[92].

Despite widespread awareness and rising contraceptive usage globally as a whole, there are still significant gaps between young people's intentions to delay or forgo having children and their actual use of contraceptive, this is particularly true in the case of developing countries[93]. As of the end of 2009, up to 15% of the 1.4 billion women in poor countries who are of reproductive age (15-49) who were not using an effective method of contraception wanted to prevent getting pregnant but were

not using a method that was available to them. It is one of the major SDG indicators for FP, and it demonstrates the mismatch between women's present union status and their contraceptive use. Reduced levels of unmet need will lead to fewer cases of undesired pregnancy and abortion, both of which are more prevalent among young adults; as a result, the socioeconomic status of this age group will improve. Additionally, if Nigeria's unmet requirements were met, the country's high fertility rate could be significantly decreased[94].

2.3 Review of Empirical Studies

Factors Influencing Modern Contraceptive Use

There have been a great number of studies done on the factors that influence the selection and utilization of contraception. There have been instances in which significant connections have been found to exist between the use of contraception and particular socio-demographic, socio-cultural, and socioeconomic features of women. The findings were either consistent or contradicting, and this appeared to be dependent on the context and environment in which the research was carried out. However, very little study has been done to investigate the factors that have been shown to have a significant influence on the prevalence of contraception among Nigerian women. The vast majority of research has merely given religion a cursory examination as a possible factor in attempting to explain why Kenyan and other Nigerian women do not make use of contraception. There has not been a comprehensive examination into what exactly is the most significant contributing factor inside the Islamic religious belief that is related to low contraceptive usage. This is something that needs to be done. As a result, the purpose of this study is to

investigate the usage of contraceptives not only within the framework of Islamic religion and practice but also outside of it[95].

It has been established that both the supply side and the demand side have an impact on family planning adherence and, more specifically, the utilization of contemporary contraceptive procedures in any nation[96]. The demand for modern contraceptives can be affected by a number of factors, such as a woman's knowledge about family planning (FP), her cultural or religious beliefs on the use of contraception, and her access to healthcare. The supply side also plays a significant role in terms of the availability of various contraceptive techniques, the cultivation of a trusting relationship between patients and healthcare professionals, and the provision of informative explanations of the numerous modern contraceptive methods that are available (to enhance an informed choice). All of these factors pertaining to the health care system may lend support to a woman's decision to make use of an appropriate method of contraception[97]. Research that looked at the elements that influence the use of modern contraceptives found a correlation between the socioeconomic standing of a woman and her usage of contraception in emerging nations. This association was found in both developed and less developed countries[98].

Socio-Demographic Factors

Age

Age has been identified as a barrier to the use of contraceptives because many professionals in the field of reproductive health refuse to treat young women (under

the age of 18), and on the other hand, many young women are embarrassed or ashamed to go to hospitals or clinics to seek these services. As a result, the use of contraceptives is limited[99]. A study that looked at the data from Ethiopia's demographic and health survey in 2011 found that younger women were more likely to use modern contraception than older women were. The study included 10,204 female respondents. In Kenya, the highest contraceptive prevalence rates were found among married women aged 30-34, while the lowest prevalence rates were found among females aged 15-19. 66% of Kenyan women who have three or more children are using some form of birth control, making it the most common method. The vast majority of sexually active women are often those who are married to their partners and have their consent. They participate in greater sexual activity on a more frequent basis, have higher fertility rates, and run the risk of having a child without their knowledge. In addition to this, it is projected that they would make use of various forms of contraception at a higher rate than other categories of women. Before selecting a method of birth control, it is common knowledge that this group of women must first receive permission from both their husbands and, in certain instances, their in-laws. It was revealed that women who were in polygamous partnerships had a lower likelihood of using birth control than women who were in monogamous relationships. This could be due to the dynamics of the marriages, in which women who share a spouse may feel pressure to have a greater number of offspring and compete with one another.

In Kenya, a respondent's age is one of the most important factors that determine whether or not they use birth control. The examination of contraceptive use should

place a significant emphasis on a person's age because this factor determines when a person enters and exits a reproductive risk state[100, 101]. The degree of exposure to various methods of birth control was also evaluated. According to the findings of this research, the lowest rates of birth control utilization were seen in older women. The following are some of the explanations that were given: (a) Women with a parity of four or more were often older, they belonged to the generation that had a high degree of illiteracy and a widespread aversion to the use of contraceptives. This generation also had a negative attitude toward the use of birth control. 10 (b) Older women belonged to the same generation as the younger women who followed the constraints on fertility that were imposed by the socio-cultural norms of reproduction that followed these rules[102]. Other demographic studies conducted found that age and the use of contraceptives had a strong relationship. According to these studies, the use of contraceptives reached its highest point among women aged 30–34, while it was at its lowest point among women aged 15–19 and 45 and older[103].

Living Children and Ever Use of Modern Methods of Contraception

Kenya's birth rate, like that of other countries in sub-Saharan Africa and other developing regions, is positively correlated with the prevalence of the use of contraception, the prevalence of contraception increased from 4.6 percent among women who did not have any children to 16.8 percent among those who had one child who was still alive, to 24.2 percent among those who had two children, and to 28.0 percent and 31.0 percent, respectively, among those who had three and four

children who were still alive. Among women who did not have any children, the prevalence of contraception was 4.6 percent[104].

Rural/Urban Residence

Studies show that Sub-Saharan Africa has the widest gap between the prevalence of contraceptive use in rural and urban areas than any other region in the world. The proportion of people living in cities to those living in rural areas is more than twice as high in some areas. This disparity may be attributable to the fact that women living in metropolitan areas have access to more information, which in turn enables them to access health institutions that have robust infrastructure and FP services. According to the findings of a study that was carried out in Ghana, women who resided more than 2 kilometers away from the nearest health institution that provided modern contraception were less likely to make use of the contraceptives that were made available to them. Access to medical care is more challenging for women living in rural parts of developing countries than it is for women living in urban sections of these countries because of the greater distance between their houses and the nearest medical institution[105].

It has been found that one's place of residence has a substantial impact on the utilization of various forms of birth control. A study done in Kenya found that urban residents of Kenya were more likely to utilize birth control methods than rural residents of the country were. It's possible that this is due to factors including people's desire to have big families in rural areas, as well as the increased concentration of medical professionals and services in urban areas. Women in metropolitan areas tend to have lower birthrates for a number of reasons, including

the fact that they have higher levels of education, are more likely to be working in modern settings, are more likely to be exposed to modern perspectives and values through the media, and have easier access to various methods of birth control. According to the United Nations, those with greater levels of education were more likely to live in urban areas, whereas those with lower levels of education or none at all were more likely to live in rural areas[106, 107].

Socio-Economic Factors

It has been found that the use of modern contraceptives by adolescents is affected by a variety of socioeconomic factors, such as the level of formal education, economic standing, religious affiliation, and marital status of the adolescent[108].

Education

Education is still the single most important factor in determining how often people use birth control methods. There is a correlation between increased levels of education and an increase in the use of birth control methods[109].

Women who have completed more education are more likely to marry later, have a smaller family size, and put off their first sexual experience until they are older. In addition to this, in comparison to their colleagues with lower levels of education, they are more likely to use birth control methods. The type of community that raises and educates children has a significant impact on whether or not a couple chooses to have children. There are increased chances for fertility rates to decline more rapidly in areas where primary school enrollment is almost universal or where education is widely available. When a greater proportion of the population is

involved in the educational system, a decrease in reproduction may be associated with education levels as low as the elementary level. As a society's total education level rises, there is a noticeable shift in the social norms about births and parenting. There will be repercussions for women of all educational levels as a result of the changing social norms surrounding smaller family sizes. The more education that women obtain themselves, the higher their expectations become for the children that they bear[110]. They are pushed by this to have a smaller number of children who are easier to manage. Education can frequently result in an increase in the cost of bringing up children. Education is often connected to characteristics that are associated with a woman's likelihood to have fewer children. Some examples of these are improved reading and writing skills, enhanced self-reliance, and acquaintance with novel principles, ideas, and examples of positive behavior. Women who are better informed often have higher expectations and make better use of the health resources available to them. Additionally, the amount of time spent in school has an effect on this. Fertility can be influenced by a wide variety of factors, one of which is level of education. It has an impact on students' values since it raises the possibility that a woman may marry an educated guy who would want a family with fewer children. It also has the potential to enhance knowledge through education in the context of family life or through other approaches[111, 112, 113].

The education of women heightens people's awareness of the clear distinctions that exist between the reproductive and health-seeking behaviors of educated women and those of women who are uneducated. Many studies have been conducted to investigate the possible links between a woman's level of education and her

likelihood of having children. Education for women raises the likelihood that they will participate in decision-making within their families, which in turn gives them more autonomy[114].

In addition to this, it strengthens their sense of autonomy and control over the resources of the household, as well as their awareness of the world around them and their ability to communicate with one another. Education levels of women have a considerable bearing on their fertility, as measured by proximal determinants. Additionally, as comparison to women without education, it prolongs and intensifies the duration of breastfeeding in educated mothers. There is also a substantial connection between a woman's level of education and her fertility because it improves the chances of her offspring surviving[115].

As a result of this, the impact of female education functions in a manner that is independent of the socioeconomic status of the household. Both fertility and marriage age are affected when there is a higher rate of child survival. It is important to keep in mind that the consequences of increasing the number of opportunities available to educate women won't be seen for at least a generation. On the other side, family planning programs were developed as a preventative measure to hasten the decline in the overall number of births per woman. This will become feasible only if methods of birth control are made more easily available in countries still considered to be developing[116].

A survey was conducted in the rural districts of Burkina Faso, and the results showed that out of all the women who use modern contraception, 11.4% have not completed elementary school, 20.7% have graduated from primary school, and

43.0% have graduated from secondary school. Only 18% of Kenyan women who are now married and have no education use a technique, in contrast to the over 50% of Kenyan women who have at least a primary school education. According to several, the usage of family planning increased as both women and their husbands achieved secondary education. It has been demonstrated that a lack of exposure to modern contraceptives is highly correlated with lower levels of educational attainment. The ability of a woman to make decisions and her awareness of the benefits of using birth control are both enhanced when she has completed a higher degree of education[117].

Studies have shown that a woman's degree of education is one of the elements that can help predict if she will have FP. Additionally; a high level of education is positively connected with the use of modern contraception. Women who have gotten more education are better aware of the various methods of birth control and how employing those methods can help reduce the likelihood of having an unwanted child, because they are more likely to be educated women. Women who are actively participating in the job market, have a tendency to have only as many children as they can properly care for while also continuing their careers. A study that was carried out in Ghana found that women who had completed higher levels of education had a greater likelihood of using methods of contraception compared to those who had completed only primary education or had no education at all[118].

In Kenya, education has emerged as a crucial determinant in predicting the amount of people who use various forms of birth control used data from the Kenya Fertility Survey (KFS) concluded that education had a statistically significant impact on the

utilization of contraceptives. This was the case even after taking into account the influence of other cofactors[119]. Women with less than nine years of education were about nine times less likely to use birth control than those with more than nine years of education. As one might expect, the rate of contraception use rises with increasing levels of education. The use of modem techniques was found to be most common among highly educated women, with a usage rate of 52 percent among those who had completed at least portion of their secondary education and a usage rate of a comparatively low 8 percent among those who had not completed any schooling at all. In addition, the percentage of educated married women who used modern methods increased with the number of children they had, reaching a peak at four children, and then decreased among those who had five or more children, possibly as a result of low or no education among those who had more than five children. Women in the union who have a low level of education or none at all frequently do not have adequate information regarding the appropriate use of modern contraceptives[120].

The comparative research on contraceptive usage in the Commonwealth Caribbean countries revealed that a woman's level of education and her use of birth control were found to have a positive correlation with one another. The level of education that women have has an effect on their perspectives, their level of knowledge, and consequently, their choice to utilize contraception[121]. A study conducted by the World Bank found that higher levels of female education were linked to higher rates of contraceptive usage, and that this relationship was much stronger for the use of contraceptives by women. The study looked at 15 countries in sub-Saharan Africa

and found that higher levels of female education were linked to higher rates of contraceptive usage[122].

Research conducted in Poland found that the level of education a woman had contributed to her higher usage of birth control methods. In their research showed that the level of education that women possessed was the single most important factor in determining whether or not they used birth control. This was owing to the discovery that women's educational influences on contraception were quasi-linear, and that as women's educational attainment climbed, so did the likelihood that they would ever use contraceptives. The reason for this was found in the study. In research, it was found that despite the fact that both primary and secondary or higher levels of education led to an increase in the utilization of contraceptives, post primary school dropouts demonstrated this trend at a significantly higher frequency. The inability of the illiterate women to use modern contraceptives made the researchers to concentrate on a woman's level of literacy instead. According to the findings of other research, the level of education achieved by women and the probability of having children have a substantial correlation, whereas the amount of education attained by males and the probability of having children has a less correlation[123][124].

Education has been shown to have a positive impact on the use of contraceptives among adolescents, as evidenced by the fact that young men in the age range of 15 to 24 in Nepal who have completed at least 10 classes use condoms ten times more frequently than those who have not (53.7 percent versus 5.3 percent).Similarly The National Demographic and Health Survey conducted in 2011 found that young

people ages 15 to 24 who had not had any formal education had a six times higher risk of engaging in sexual behavior before the age of 18 compared to young people who had received formal education[125].

Employment

When a woman is required to hold a job outside the home, employment is interpreted as a demonstration of her commitment to and participation in non-familial roles. In addition, it has been observed that women who work outside the home typically prefer smaller families, which raises the acceptance of contraception. This is one factor that contributes to the rise in the use of contraception[125].

There is still a lack of accessibility to family planning services, particularly for those living in the lowest income brackets. 200 million women around the world live in poverty, and although they would like to delay or prevent conception, they do not have access to methods that are proven to be successful. Despite the fact that the number of poor people living in informal settlements is expected to increase by 40% in the next 15 years, the amount of money available for contraceptives has been steadily decreasing In point of fact, successful family planning programs that are tailored to meet the requirements of communities with low incomes have the potential to assist in narrowing the gap in fertility rates that exists between wealthy and impoverished areas. It has the potential to make a significant contribution toward reaching the Millennium Development Goals and eliminating poverty. The amount of a society's income has frequently been used as a stand-in for measuring the extent of its entire social and economic progress. However, empirical research on the connection between income and fertility has yielded results that are

extremely all over the place[126]. There has historically been a negative link between high fertility and macroeconomic prosperity, with high fertility in the world's poorest countries and low fertility in the world's richest countries. This would seem to indicate that the link between poverty and poor reproductive health, and consequently, unchecked population increase, is particularly prominent in less developed nations[127]. It should come as no surprise that effective family planning is necessary for the growth of the population, the abolition of poverty, and the progression of civilization. Data from the United Nations and other governmental and non-governmental organizations provide support for this finding[128].

There has been a wide variety of research conducted on the topic of how employment status is related to birth control use. The employment status of women, when considered independently as a variable, revealed a negative correlation, and this was the case for both employed and unemployed women. It's possible that the interviewers or the respondents misunderstood the questions that were posed in relation to this variable, and that's why this issue is so contentious: both parties could be at fault[129].

Exposure to Contraceptive Messages

Studies conducted in Kenya and Nigeria found that women who were exposed to family planning messages had a more favorable attitude toward modern contraceptive techniques, as well as a better understanding of where to obtain contraceptives and the value of FP to their own health, the health of their families, and the economies of their nations. As a consequence of this, women who received information on family planning from either a health professional or an FP worker

visit are more likely to use modern contraceptives than women who did not receive such information are. Access to family planning information has the potential to remove a number of barriers that prevent people from using modern methods of contraception. These barriers include a lack of knowledge regarding the dangers of unintended pregnancies, concerns regarding the negative effects of using contraceptives, resistance from the husband and religion, and a lack of knowledge regarding how to obtain FP services[130, 131].

Interventions in the media could have a significant impact on encouraging the widespread use of contemporary contraceptive techniques. Following various types of communication initiatives, there were significant increases in the number of customers seeking contraception at clinics. Radio, television, newspapers, posters, and some types of popular entertainment were all considered mass media. Properly planned communication campaigns were especially important for encouraging the use of contraceptives. For instance, two contraceptive communication programmes in Jamaica—one carried out by the National Contraceptive Board (NFPB) of the government and the other by the Jamaican Contraceptive Association—found radio to be a primary medium (JFPA). Songs, radio, television, newspaper, and movie commercials were employed in the government effort created by the International Advertising Agency (IAA) to promote contraceptive elements. According to a research Valente conducted in the Gambia to assess the impact of a radio drama about contraceptive difficulties, exposure to the programme was linked to an increase in knowledge, a positive attitude, and contraceptive use. It was discovered that the radio medium was a very effective way to reach a big audience and could

easily convince people to contact contraceptive websites, clinics, and other venues[132]. Reports of hearing or seeing advertisements for contraceptives on the radio, in newspapers, magazines, on posters, or on television were found to be strongly statistically associated with several indicators of reproductive behaviour in general and contraceptive use in particular. Even after a range of life cycles such as residential and socioeconomic controls, were implemented, these relationships were still evident[133].

Women's Empowerment

Women's empowerment is one of the most important factors that play a role in whether or not modern contraceptives are used. Women's empowerment can be defined as the capacity of women to exercise decision-making authority in a variety of realms of life, such as the political, sociocultural, family and interpersonal, and legal arenas, respectively[134]. Studies indicate that the utilization of contraceptives and the empowerment of women go hand in hand with one another[6]. Women who take part in the decision-making process within their households are more likely to be able to exercise some level of control over their fertility, according to the findings of a study that was conducted in Nigeria. In an effort to further the cause of women's emancipation, the government of Rwanda has placed a strong emphasis on programs that promote the education and employment of young women. The girls are better able to enhance their standard of living, have access to money and power, and remain educated about what is going on in society as a result of this. It has been established that there is a correlation between the fact that the majority of the time, men are the ones in control of making decisions in their households and the fact that

males in certain cultures have a greater propensity to be ignorant about contemporary techniques of contraception. Numerous studies have found a connection between men's opinions toward contemporary methods of contraception and male dominance in the house and low rates of contraceptive use[135].

Household Wealth

In addition, research has shown a correlation between the use of contraceptives and the affluence of the household. A study that was conducted in the Newly Independent States found that women who came from wealthy families were more likely to use modern contraception than those who came from low-income communities[136].

It has not been shown that the level of wealth in a household has a substantial impact on whether or not someone uses contraception. Despite the fact that the government of Nepal has made all forms of birth control available without charge in an effort to remove any financial barriers that might hinder people from using birth control[137].

Cultural Factors

It's possible for women to have their desire for birth control unmet if they're met with opposition from either their partner or anyone else in their sphere of social influence. It's possible that they're against it because they want more children, won't let male doctors examine their wives, or are worried that their wives would be prevented from becoming pregnant if they don't allow male doctors to examine them. Internal conversations between spouses about various methods of birth

control can greatly cut down on spacing and limit the number of demands. According to a qualitative study conducted in Tanzania, which showed cultural impediments to modern contraceptive use, only 2% of women in Matemwe participated in the village's contraceptive program. This was the case despite the fact that contraceptives were easily accessible and did not cost anything[138].

It was discovered that strong Muslim beliefs, male dominance over women (especially in polygamous relationships), and a lack of exposure to contemporary perspectives through education and travel all had an effect on the utilization of contraceptives. According to the findings of interviews, in order to increase the number of people in Matemwe who use contraceptives, cultural obstacles to contraception need to be removed, utilized data collected in Ethiopia and Kenya in order to investigate how beliefs of societal norms influence the utilization of contraceptives in a manner that is distinct for males and females. The sexual preferences of the offspring of the couples, other partner are a factor in the utilization of FP. Couples who had less than 14 sons at the time of the survey were the ones who reported using contraception less frequently. This cultural phenomenon arises in patriarchal societies where the possession of multiple male offspring is regarded as a badge of pride. Procedures that could be construed as practicing contraception are frequently regarded as being against Islamic doctrine. Due to the fact that Islam does not have a centralized authority or a clergy that is organized in a hierarchical fashion, there is no one accepted interpretation of the Quran. As a direct consequence of this, the stance that the Quran takes toward birth control methods is open to a wide variety of interpretations. Because of the Quran's

lack of clarity on the subject of contraception, Muslim communities usually form their perspectives on the subject through the process of reaching consensus within their own communities[139, 140].

As a result, the prevalent theological beliefs, the school of thought maintained by some Islamic scholars, and the community in which a woman lives are frequently influential factors in the woman's decision to utilize contraceptive services. Therefore, contraceptive services may be easily accessible in the immediate vicinity; but the availability of these services may be restricted socially due to cultural issues. The papal encyclical Human Vitae is where the Roman Catholic Church (RCC) gets the idea that every sexual encounter between a married couple must be open to the possibility of the transmission of life in order for it to be considered acceptable[141].

Religion

Despite the findings of a large number of researches indicating that religious opposition to the use of contraception is relatively uncommon, religious affiliation remains to be an essential component in the analysis of worldwide fertility regulation. Religion, through its teachings and practices, has an effect on a woman's beliefs, norms, and value orientation, including her perspective on reproduction and family size. This, in turn, has an effect on the fertility behaviour of the woman. In some regions of the world, the widespread use of contraception is in direct conflict with the traditional values that might be taught through religious education. One such illustration is the opposition of the Catholic Church to the practice of using contraception in Kenya and other countries all over the world. According to the findings of a number of demographic studies conducted on Africa, sub-Saharan

Africa has the potential to withstand a decline in fertility better than any other region in the world. The causes are cultural, and they have a lot to do with religious belief systems that directly promote higher reproduction while also shaping society to provide benefits for high fertility. The causes are cultural, and they have a lot to do with religious belief systems that directly promote higher reproduction. Despite the fact that there were some subtle distinctions, Catholics had a higher likelihood of using birth control than Protestants did. Muslims exhibited much lower prevalence rates of the usage of contraceptives when compared to the two Christian groups studied. The biblical admonition to "go ye and multiply" for the purpose of continued birth has resulted in legislation being passed in several places that makes it illegal to use any sort of contraception or contraceptive. According to the results of a survey conducted in Senegal, 8% of female respondents and 5% of male respondents, respectively, stated that their religious beliefs prevented them from using contraceptives[142].

Ethnicity

According to the findings of some studies, the interaction of culture and ethnicity, as manifested in the values, beliefs, and rituals of certain societies, makes it difficult for couples to exercise control over their fertility. The extent to which programme planning efforts would need to be increased to meet the demand for contraception based on ethnic background could be determined by differences in the ways in which various cultures approach the use of contraceptives. According to Caldwell, high fertility is highly regarded in Africa. Children are seen as a significant resource in Africa because of the continent's predominantly agricultural and mechanized

industries, which demand a big labor population. For instance, in Nigeria, couples commonly have children in the expectation that a few of those children will grow up to be successful enough to support the family financially and advance the reputation of the family in society. This is a significant contributor to the low prevalence of birth control utilization that exists in these societies[143].

Type of Marriage and Use of Modern Methods of Contraception

Some people believe that women who are married to the same man could try to outdo one another in terms of the number of children they bear, and others believe that polygamy has a negative correlation with the use of contraception. This is especially true in communities where a woman's status is based on the number of her children who reach adulthood, as these measures how successful her reproductive efforts have been[144].

Fertility Preference and Use of Modern Methods of Contraception

Those who want more children than they currently have a lower likelihood of using birth control methods compared to women who do not want any more children. Even after taking into consideration the influence of other factors, Njogu discovered that the desire to have no more children continued to have a sizeable bearing on the decision regarding the use of contraception. When compared to women who did not want any more children, those who did not want any more children were three times more likely to use contraception[145].

Knowledge on Modern Methods of Contraception and Use of Modern Methods of Contraception

Knowledge about modern contraceptive technologies is an essential intervening variable that plays a role in the determination of whether or not women use contraception and their views regarding the practice of using birth control. In regions where awareness of either a source or method was limited, modern methods of birth control were only seldom used. For instance, 17.4% of married women in Nepal had never heard of any contemporary method of contraception, and nearly 48% of married women in Nepal had never heard of any modern technique of contraception. The remaining 36.6% of married women used some form of contemporary contraception, however this accounted for barely one out of every five women. One of the primary problems with it is that it is difficult to determine how this variable should be quantified. A woman's report that she knew how to use a method was seen as a prerequisite to knowing how to use a contraceptive outlet, and the average measure of knowledge of a contraceptive method could range from a simple awareness of the method's name to a rough estimate of functional knowledge of the method. It was hypothesized that women's access to providers of contraceptive services would influence their choice of birth control methods. The fact that the pair had access to information on contraceptives enabled them to achieve this goal[146].

It was predicted that fertility regulation would additionally incur some expenses in terms of both time and money. The studies conducted in Zimbabwe, on the other hand, produced contradictory results. It was found that access to any type of fixed health facility that offered contraceptive services did not have a significant impact on the utilization of modern contraceptives. On the other hand, in comparison to the

use of other methods, the presence of a Community Based Distribution point resulted in a significant increase in the utilization of modern contraceptives, particularly the pill (CBD)[147].

Child Death and Use of Modern Methods of Contraception

According to a large body of evidence, the use of contraceptives is correlated with a higher risk of a child dying before their third birthday. Contraception was used by moms who had experienced a loss of at least one child at a rate that was much lower than that of women who had not experienced such a loss[106]. A correlation between using birth control and having a kid pass away was discovered in a study that was connected to this one. These findings jibe with the hope that other children will be able to take the place of the ones that were lost, as well as serve as an insurance policy against the potential loss of additional children in the future[147].

2.4 Conceptual Framework

In this study, we will make use of a paradigm that was built based on Bongaart Proximate determinants of fertility.

Bongaarts Proximate Determinants of Fertility

According to this theory, fertility can be directly influenced by a number of factors that are collectively referred to as the proximal determinants. One of these factors is the use of birth control methods[1]. These are impacted by a variety of contextual factors, such as those pertaining to society, the economy, culture, psychology, the physical world, and the natural environment. This framework is significantly more applicable than others of its kind considering that it takes into account the

independent variables that were researched for this project. Other researchers[2] have modified Bongaarts' paradigm in order to investigate the influence of socioeconomic, social, and demographic aspects on the utilization of contraceptives. These researchers cite Bongaarts as their primary source of inspiration. The following graphic presents an illustration of the interaction between the several determinants and the final variable, which is fecundity[82,83].

2.5 Summary of Gap in Literature Reviewed

The objective of this study is to assess the knowledge over time in the modern contraceptive use, and several studies have been done in respect to this topic, but this research will be conducted among pregnant women of any age attending antenatal clinic at Adeoyo maternity hospital Ibadan. This is because Adeoyo is a known hospital that provides maternal and child healthcare services to people in Ibadan and its surrounding. The uniqueness in child birth and all maternal related issues led to it being nicknamed the Ibadan baby factory since the rate of natality is high in the hospital.

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Chapter Three

Methodology

3.1 Research Design

A facility-based cross sectional study design was utilized.

3.2 Population of the Study

The study populations are women seeking antenatal care at the Adeoyo Maternity Hospital.

Study Area

Ibadan, the capital city of Oyo State, Nigeria, is home to a state-run general hospital known as Adeoyo Maternity Hospital (AMH). The people who live in Ibadan have an opinion of it, particularly those who fall into the lower and middle socioeconomic strata. It serves as a referral center for a large number of primary care clinics and private medical practices located in and around Ibadan. Up to 4,000 individuals visit the antenatal clinic every single month, and somewhere between 12,000 and 50,000 do so each and every single year. Every workday of the week, patients can visit the prenatal clinic at the Adeoyo Maternity Hospital. It has a labor and delivery facility with sixteen beds and a monthly delivery rate of approximately 900 newborns, with an annual delivery rate ranging from 4,000 to 45,000. The phrase "Crown of Oyo" can be translated from the Yoruba word Adeoyo. The hospital is known for having a large number of deliveries due to its excellent reputation. This is due in part to the hospital's central location within the Ibadan community as well as the accessibility of health care services, particularly for those in the lower and middle strata of society. Because of the relatively high number of

births that take place within the facility on a yearly basis, the hospital is fondly referred to as the Ibadan baby factory. The Adeoyo Maternity Hospital is a facility that serves not only as a maternity hospital but also as a secondary health care center, as well as a teaching and research establishment.

3.3 Sample and Sampling Technique

Sample Size

In order to determine the minimum number of subjects that was sampled for this inquiry, the Fishers' formula was applied. During the process of determining the appropriate number of samples for this inquiry, the following criteria were carefully considered.

$$n = \frac{Z_{\alpha}^{2} P(1-P)}{d^{2}}$$

Where: n - minimum sample size required

d - Is margin of error 5%

z - Confidence level 95%

p - Estimated proportion of contraceptive prevalence 29%

n = 316

Correcting for a possible non- response rate of 10%, the final calculation will be 316/0.9 = **351**

Response rate: 323/351=92%

So, a total of 329 women, attending antenatal in Adeoyo Teaching Hospital Ibadan were interviewed.

A convenience sampling technique was used to select the participants for this study. The selection was done on their antenatal clinic days. Due to the sample size, the selection was done for 9 antenatal clinic days, and it was done such that no individual was recruited more than once. For each antenatal clinic day, at least 40 pregnant women were recruited.

3.4 Description of the Research Instrument

The research instrument that was utilized in this study was an interviewer administered questionnaire. The women were interviewed to be able to get correct interpretation of the contents of the questionnaire.

The questionnaire included three (3) Sections:

Section A: Socio-demographic characteristics.

Section B: Utilization of contraceptive methods.

Section C: Knowledge of contraceptive use.

A validated questionnaire was adapted.

3.5 Validity and Reliability of the Research Instrument

To ensure the validity and reliability of the research instrument, validated questionnaires were adapted from several studies.

3.6 Data Collection

At least three research assistants who understand English and Yoruba and can speak the languages very well were engaged for data collection. This allowed for a better comprehension of the respondents who are mostly Yoruba speakers. Respondents gave their consent before participating in the study, and respondents gave their agreement before participating in the study. The survey consists of questions with both closed and open-ended responses, as well as spaces for additional clarification if it is required. The questions that were asked and the format of the questionnaire were shaped according to the findings from the research into the relevant literature. Even though the questionnaire was distributed in both English and the regional language, it was drafted in English. Even if they do not speak English, the women were able to comprehend the inquiry and responding a manner that is both appropriate and feels natural to them.

The plan of study, interviewing and methods for maintaining privacy was explained to each probable client. The interviewer read an overview including the risks and benefit to all participants and in which the participant gave consent for go ahead or decline.

The questionnaire was organized to include:

1. Socio demographic variables of the respondents,
2. Socio economic characteristics of the respondents, use and knowledge of contraceptive methods.

3.6.1 Variables

3.6.2 Dependent Variable

The dependent variable for this study is modern contraceptive use intention. This the number of women who are not currently using modern contraceptive but intend to use in the future. In this study, it was captured by asking pregnant women if they intend to use modern contraceptive after delivery of the index child and it was categorized as 0 = no intention, 1 = yes intention.

3.6.3 Independent Variables

This table below shows the independent variables used in this study and they were classified.

Variable	Measurement
Age	1= ≤ 24 Years
	2 = 25-34 Years
	3 = 35-49 Years
Education	1=No Education/Primary
	2 = Secondary
	3= Tertiary
Residence	1= urban
	2= urban slum
	3= rural
Occupation	1=Professional
	2= Clerical
	3= Sales and Services
	4= Unskilled/skilled Job

	5=Housewife/Unemployed
Religion	l= Christian
	2=Islam
Types of Marriage	1=Monogamy
	2=Polygamy
Living Children	1=0-2 children
	2=3-5 children
	3=6+ children
Number of Children Ever Had	1=Yes
	2=No
Knowledge Of Modern Contraceptive	1= Poor
	2= Fair
	3= Good
Fertility Desire	1=wants another
	2= undecided
	3=wants no more/ sterilized
	4=in fecund.

Source 1

Measurement of knowledge of modern contraception

This pertains to the question of whether or not a respondent had a depth knowledge of modern methods of birth control at the time that this research was conducted. The measurement of knowledge of modern contraception were based on 15 variables. The classification of these variables in this investigation made use of the respondents' responses of 0 for yes, 1 for no and 2 for I don't know. The responses were then re-classified as 1 for each correct answer and 0 for incorrect answer. Based on this re-classification, the total score obtainable by each respondent was 15.

The score, then, was classified as two-third of 15, which is 10 and above as good knowledge, the scores 7-9 as fair knowledge, and below 7 as poor knowledge.

3.7 Data Analysis

The data obtained from the questionnaire was entered into Statistical Package for the Social Sciences (SPSS) Version 20, and was utilized for management and analysis of the data. In order to gain an understanding of the degree to which respondents are distributed according to background characteristics, the variables were characterized using frequency and proportion. In order to investigate the links that may exist between the independent variables and the dependent variable, a Chi-square test was carried out at the bivariate level. This research made use of logistic regression to identify factors influencing contraceptive use intention.

3.8 Ethical Approval

Ethical approval for this study was obtained from the University Research Ethics Review Committee (HREC) of Lead City University, Ibadan, Oyo State (LCU-REC/22/132), and Oyo State Ministry of Health Department of Planning Research & Statistics Division (AD 13/479/44541[B]). Official permission was obtained from the hospital. The participants in the study were given a comprehensive explanation of the goals of the investigation, and then their written informed consent was gained from them. To ensure informed verbal consent from participants, the information statement was printed and read in English and Yoruba. The study contained women who had formal education and women with no formal education. So, informed

verbal consent was more appropriate and also approved by both committees. Throughout the course of the research project, all the information that was obtained from the participants was kept in the strictest confidence.

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Chapter Four

Results and Discussion of Findings

This chapter contains detailed presentation and discussion of data analysis and the results of this study. The findings are presented under the following major headings: socio-demographic characteristics; level of knowledge of modern contraception; the intention to use modern contraception and factors influencing the intentions of modern contraceptive use among women attending antenatal clinic.

4.1 Demographic Data Results

The socio-demographic characteristics of the 323 study participants are shown in Table 4.1. The majority of the respondents were found to be between ages 24 to 35 (12.7% of the respondents are 24 years and below, 37.8% are 25-29 years, 37.5% 30-34 years, while 12.1% 35 and above.

The participants constitute more of Christians with 53.3% while 46.7% are practicing Islam. 6.5% of the respondent had only primary education, 34.4% got to secondary education while 58.8% had tertiary education. Also, the participants are majorly married with 88.9% while11.1% of the respondent are single. The study presents that 37.8% of the respondent had no before birth, 38.1% had no living children, 49.2% had 1 to 2 children living, while 12.7% had 3 children and above. The participants are majorly into sales and services with 31.3%, 26.9% are professional, 21.1% are doing skills/unskilled manual job, while 20.7% are doing other jobs. The participant's spouses are majorly between the age range 34 and

below with 41.2%, 38.4% are within the range of 35 to 40 years, while 20.4% are greater than 40 years

Table 4.1a: The Socio Demographic Characteristics of Respondents

Variable	Frequency	Percent
Age Group		
24 And below	41	12.7
25-29	122	37.8
30-34	121	37.5
35 and above	39	12.1
Religion		
Christian	172	53.3
Islam	151	46.7
Educational Level		
Primary Level	21	6.5
Secondary Level	111	34.4
Tertiary	190	58.8
Marital Status		
Single	36	11.1
Married	287	88.9
Age at First Birth		
No Birth	122	37.8
<20	10	3.1
20-24	66	20.4
25-29	92	28.5
>30	33	10.2
Children alive		
0	123	38.1
1	92	38.5
2	67	20.7
3 And above	41	12.7

Source: Field survey 2022

Table 4.1b: The Socio Demographic Characteristics of Respondents Continued

Variables	Frequency	Percent
Gender Preference		
Girl	86	26.6
Boy	109	33.7
None	128	39.6
Place of Residence		
Urban	253	78.3
Rural	70	21.7
Occupation		
Professional	87	26.9
Sales And Services	101	31.3
Skills Manual Job	68	21.1
Others	67	20.7
Type of Marriage		
Polygamy	75	23.2
Monogamy	248	76.8
Partner's Age		
<30	31	9.6
30-34	102	31.6
35-39	97	30.0
40 and above	93	28.8
Partner's Level of Education		
Primary Level	10	3.1
Secondary Level	100	31.0
Tertiary Level	213	65.9
Partner's Occupation		
Professional	125	38.7
Sales and Services	83	25.7
Skills Manual Job	49	15.2
Others	66	20.4

4.2 Presentation of Data

4.2.1 Knowledge on Modern Contraceptive

Table 4.2: Knowledge on Modern Contraceptives

Knowledge Questions	**Correct**
1. The convenience of buying or using contraceptives is the major priority in consideration for choosing contraceptive method	84.8
2. Oral contraceptive pills affect the fertility	60.7
3. Menstrual cycle can be distorted as a result of oral contraceptive pill	35.3
4. Vaginal douching can be used as emergency contraceptive	73.7
5. Emergency contraceptive substitute regular contraceptive	81.4
6. Condom is a traditional contraceptive method	67.8
7. Intrauterine device (Copper T) protects pregnancy for between 5 and 10 years	58.2
8. Men should be involved in taking decision on the usage of contraception method	22.3
9. Withdrawal method is a safe contraceptive method	64.7
10. All contraceptive method prevent sexually transmitted infection	51.4
11. Contraceptive can make you gain weight	35.6
12. Contraceptive use should be discussed with partner	13.6
13. Regular checkup is necessary for someone on modern contraception	24.1
14. Modern contraceptives are affordable	37.2
15. Periodic calendar is a modern contraceptive	85.4

Source: Field work 2022

Figure 4.1 shows the percentage distribution of Knowledge on Modern Contraception. Less than half (44.0%) of the women had fair knowledge, 39.0% of them had poor knowledge of modern contraception, while only 17.0% had good knowledge of modern contraception. As presented in figure 4.2, majority of the participants have heard more about male condom with 86.5%, and the lowest being female sterilization with just 29%.

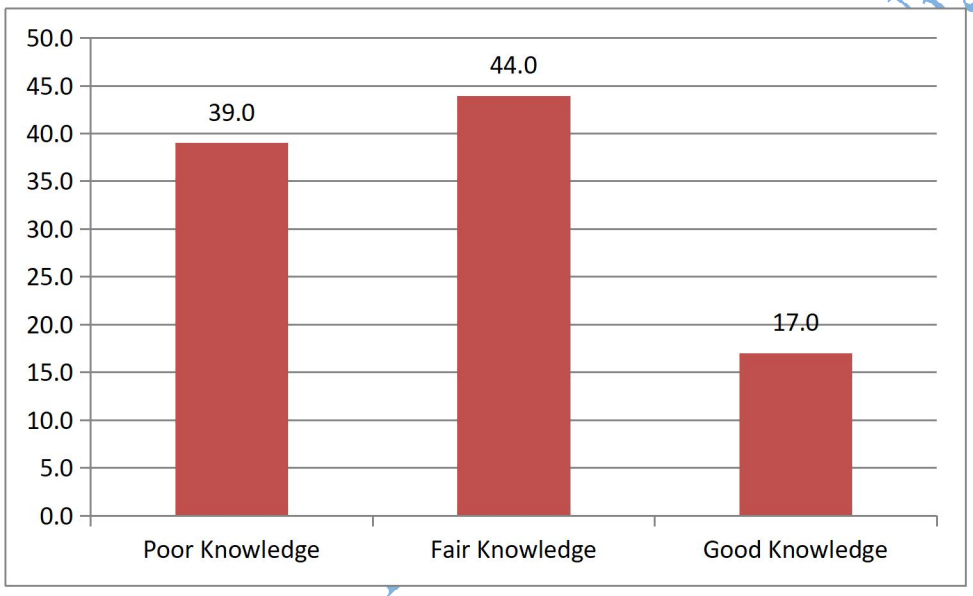

Figure 4.1: Knowledge on Modern Contraception.

Source: Field work 2022.

Figure 4.2 shows Percentage distribution of pregnant women according to modern contraceptives method ever heard. Male condom shows to be the contraceptive the women accepted to have heard of with 86.5%, followed by pills with 63.1%, and the least being female sterilization with 29.5%.

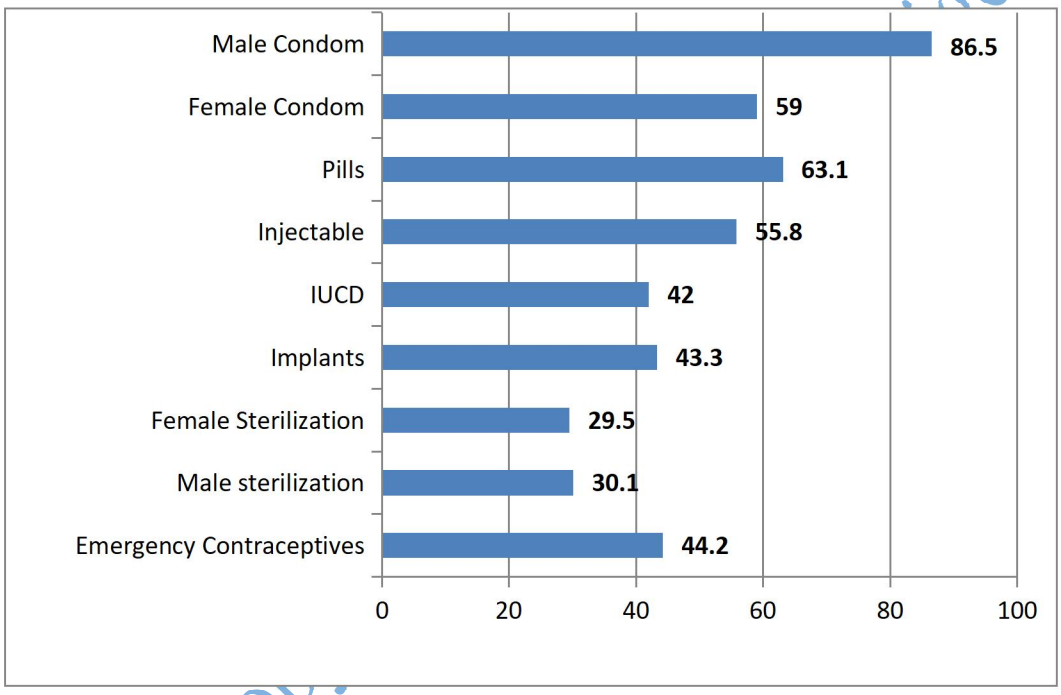

Figure 4.2: Percentage distribution of pregnant women according to modern contraceptives method ever heard.

Source: Field work 2022.

Figure 4.3 shows percentage distribution ever used modern contraceptives among pregnant women. About 60.1% of the women indicated they have ever used modern contraceptives while 39.9 have not used any method of modern contraceptives.

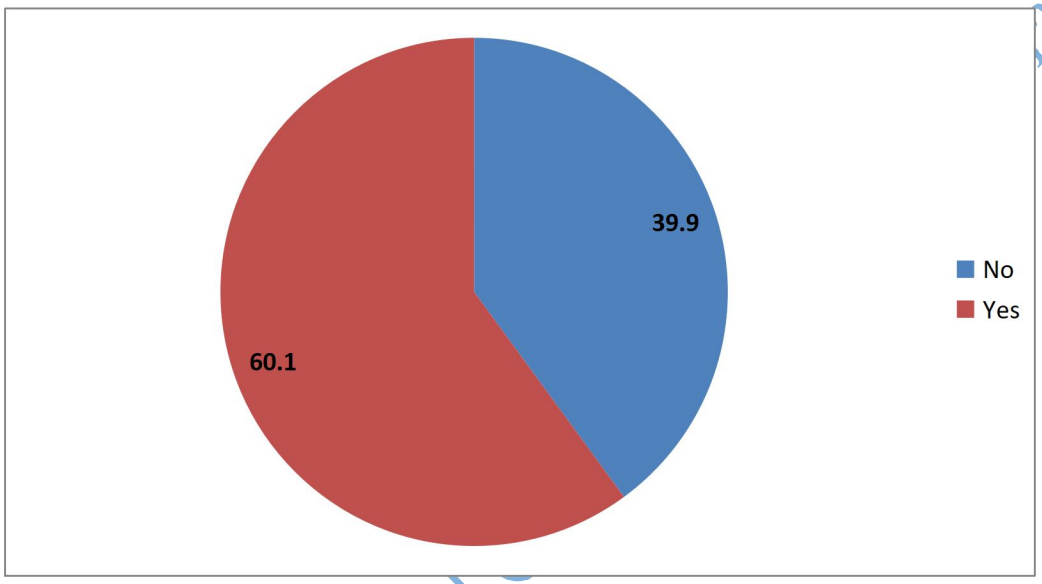

Figure 4.3: Ever Used Modern Contraceptives.

Source: Field Work 2022.

Out of the 60.1% that ever used modern contraceptives, 62% had used male condom, 20.6% had used emergency contraceptives, 16.5% had used injectable, 9.8% have used implants and 8.2% have used female condom (Figure 4.4)

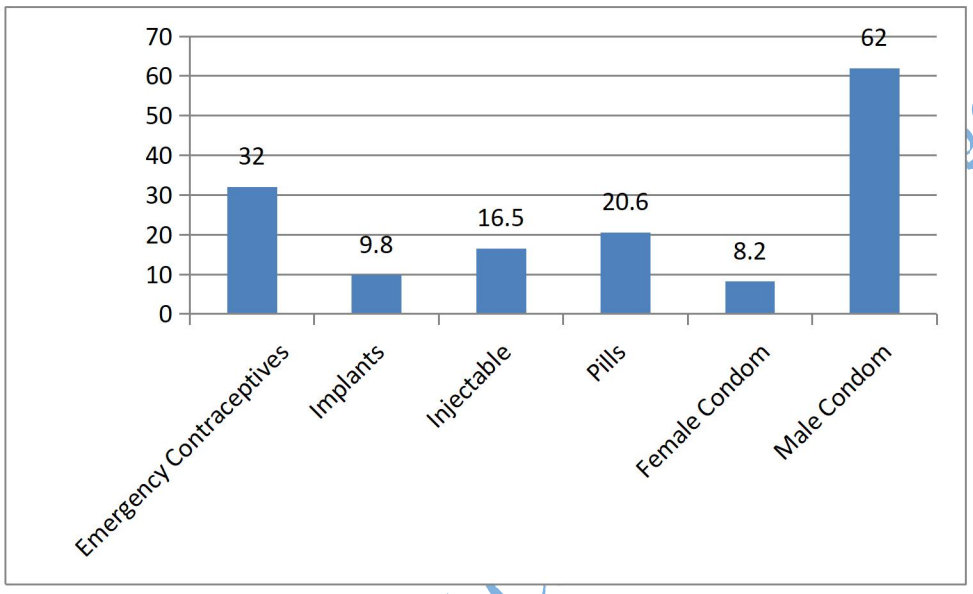

Figure 4.4: Percentage Distribution Of Women By Contraceptives Mostly Ever Used.

Source: Field Work 2022.

Figure 4.5 and 4.6 shows intentions to use modern contraceptives and contraceptives intended to use by women who have intentions. About 3.1% of the women expressed intentions to use modern contraceptives, and male condom had the highest intentions (45.5%), followed by injectable, while implants and female condoms had 8.1%.

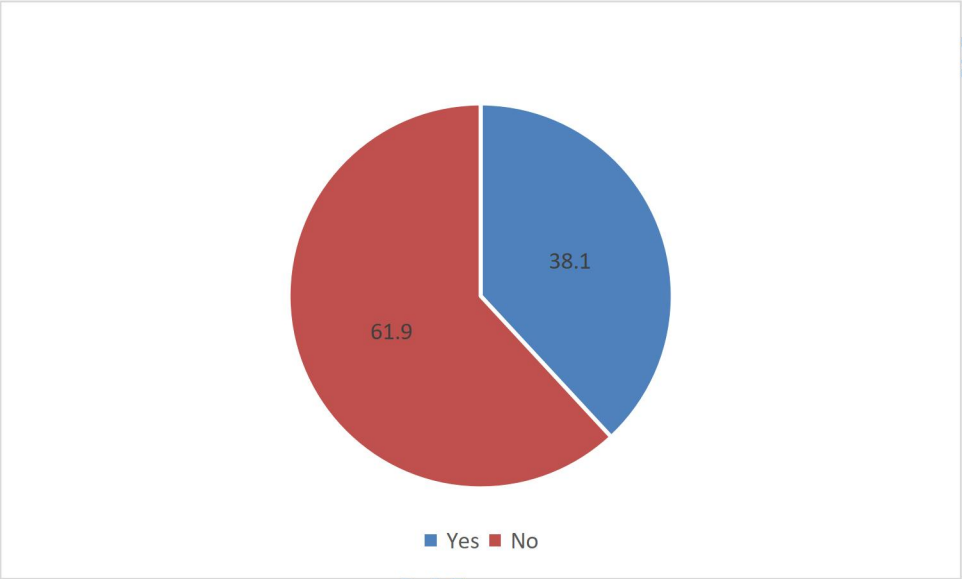

Figure 4.5: Intention to use contraceptives

Source: Field Work 2022.

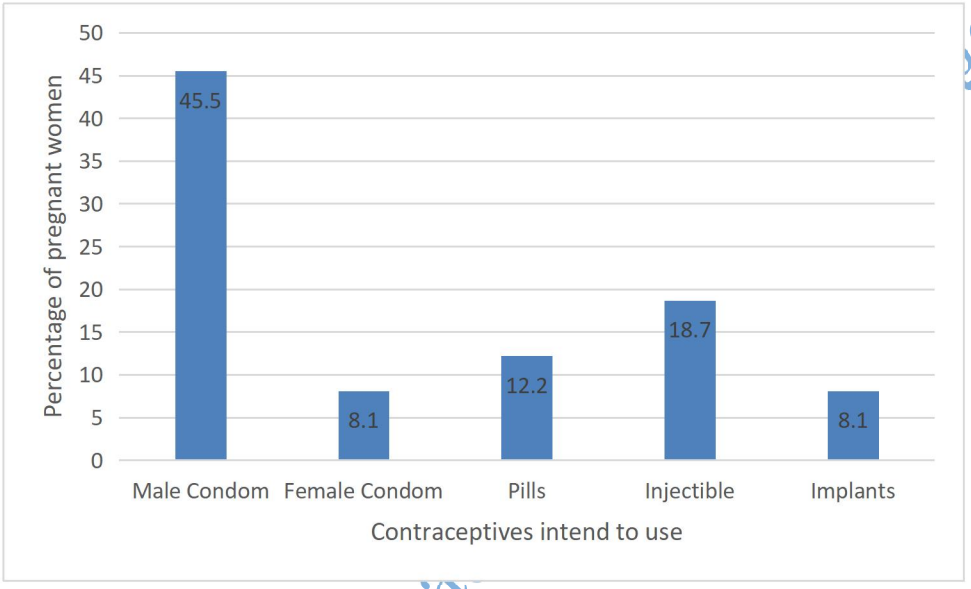

Figure 4.6: Choice of Contraceptives To Use by Women who have intention

Source: Field Work 2022.

4.2.2 Socio-Demographic Characteristics Associated with Modern Contraception

Socio Demographic Characteristics associated with Intentions to use Modern Contraceptives was presented in table 4.3a-c. The result shows that the prevalence of intentions to use modern contraceptives was highest among women of aged group 30-34 years (47.9%) and lowest among women of aged ≥35 (28.2%). Maternal age was significantly associated between intentions to use modern contraceptives (p-value = 0.028). Although, educational level of pregnant women was not associated with intentions to use contraceptive, the percentage of women that intend to use contraceptives was higher among women with primary (50%) compared with secondary (30.6%) and tertiary (41.1%). Fertility desire was significantly associated with intentions to use modern contraceptives (p-value = 0.046). Also, there is significant association between knowledge on modern contraceptives use and intentions to use contraceptives (p-value = 0.015).

Table 4.3a: Socio Demographic Characteristics Associated With Intention to Use Modern Contraceptives

	Modern Contraceptives Use Intention			
Variable	**No**	**Yes**	**χ^2**	**P-value**
Age Group			9.1	0.028
24 and below	25 (61.0)	16 (39.0)		
25-29	84(68.9)	38(31.1)		
30-34	63(52.1)	58(47.9)		
35 and above	28(71.8)	11(28.2)		
Religion			0.65	0.42
Christian	103(59.9)	69(40.1)		
Islam	97(64.2)	54(35.8)		
Educational Level			4.65	0.09
Primary Level	11(50.0)	12(50.0)		
Secondary Level	77(69.4)	34(30.6)		
Tertiary	112(58.9)	78(41.1)		
Marital Status			0.22	0.64
Single	21(58.3)	15(41.7)		
Married	179(62.4)	108(37.6)		
Age At First Birth			1.0	0.9
No Birth	77(63.1)	45(36.9)		
<20	5(50.0)	5(50.0)		
20 – 24	39(59.0)	73(50.0)		
25-29	58(60.0)	34(37.0)		
>29	21(63.6)	12(36.4)		

Source: Field Work 2022.

Table 4.3b: Socio Demographic Characteristics Associated With Intention to Use Modern Contraceptives

	Modern Contraceptives Use Intention			
Variables	**No**	**Yes**	χ^2	**P-value**
Children Living			0.32	0.85
0	78(63.4)	45(36.6)		
1	62(67.4)	61(38.4)		
2				
3 and above	24(58.5)	17(41.5)		
Gender Preference			0.09	0.77
None	78(60.9)	50(39.1)		
Yes	122(62.6)	73(37.4)		
Place of Residence			0.72	0.6
Urban	157(62.1)	96(37.9)		
Urban Slum	26(57.8)	19(42.2)		
Rural	17(68.0)	8(32.0)		
Occupation			1.91	0.59
Professional	50(57.5)	37(42.5)		
Sales And Services	64(63.4)	37(36.6)		
Skills Manual Job	46(67.6)	22(32.4)		
Others	40(59.7)	27(40.3)		
Type of Marriage			1.3	0.4
Polygamy	48(64.0)	27(36.0)		
Monogamy	152(61.3)	96(38.7)		
Partner's Age			4.18	0.12
<35	91(68.4)	42(31.6)		
35-40	70(56.5)	54(43.5)		
>40	39(59.1)	27(40.9)		

Table 4.3c: Socio Demographic Characteristics Associated With Modern Contraceptives Use Intention

	Modern Contraceptives Use Intention			
Variables	**No**	**Yes**	**χ^2**	**P-value**
Partner's Level of Education			0.01	0.97
Secondary Level	68(61.8)	42(38.2)		
Tertiary Level	132(62.0)	81(38.0)		
Partner's Occupation			4.73	0.13
Professional	70(56.0)	55(44.0)		
Sales And Services	52(62.7)	31(37.3)		
Skills Manual Job	36(73.5)	13(26.5)		
Others	42(63.6)	24(36.4)		
Desire for children			3.98	0.046
No	59(71.1)	24(28.9)		
Yes	141(58.8)	99(41.3)		
Knowledge of Modern Contraception			8.34	0.015
Poor Knowledge	89(70.6)	37(29.4)		
Fair Knowledge	84(59.2)	58(40.8)		
Good Knowledge	27(49.1)	28(50.9)		

4.2.3 Factors Influencing intention to use Modern Contraception

At both unadjusted and adjusted level, age of the women, desire for more children and knowledge of modern contraceptives use were identified factors influencing intentions to use modern contraceptives among antenatal care attendees of Adeoyo Teaching Hospital. Women aged 30-34 years were 2.34 times more likely to have intentions to use modern contraceptives compared to women who are 35 and above (95% CI 1.07-5.13). Women who have no desire for more children are 1.8 times less likely to have intentions to use modern contraceptives in contrast to those who said yes to desire to have more children (95% CI 0.42-1.28). In contrast to women with good knowledge of modern contraceptives, the AOR of intentions to use contraceptives was lesser among those with poor knowledge (AOR= 0.44, 95% CI 0.23-0.86) and fair knowledge (AOR = 0.71, 95% CI 0.37-1.34) (Table 4.4a-c)

Table 4.4a: Factors Influencing Intention to use Contraceptives

Variables	OR	95%CI	P-Value	AOR	95%CI	P-Value
Age Group			0.030			**0.052**
24 and below	1.62	0.64-4.14	0.31	1.61	0.62-4.18	0.33
25-29	1.15	0.52-2.55	0.73	1.27	0.56-2.85	0.57
30-34	2.34	1.07-5.13	0.033	2.35	1.10-5.19	0.035
35 and above	1					
Religion						
Christian	1.2	0.77-1.89	0.42			
Islam	1					
Educational Level			0.09			
Primary Level	1.44	0.59-3.48	0.42			
Secondary Level	0.63		0.07			
Tertiary	1					
Marital Status						
Single	1.18	0.59-2.39	0.64			
Married	1					
Age At First Birth			0.71			
No Birth	0.95	0.59-1.51	0.42			
<20	1.62	0.45-5.78	0.59			
20 and above	1		0.99			

Source Field work 2022

Table 4.4b: Factors Influencing Intention to use Contraceptives

Variables	OR	95%CI	P-Value	AOR	95%CI	P-Value
Children Living			0.85			
0	0.81	0.39-1.68	0.58			
1-2	0.88	0.44-1.77	0.33			
3 and above	1		0.63			
Children Ever Born			0.77			
0	0.69	0.36-1.34				
1-2	0.71	0.37-1.33				
3 and above	1					
Gender Preference			0.6			
Girl	1.07	0.68-1.69	0.68			
Boy			0.81			
None			0.56			
Place of Residence			0.59			
Urban	1.3	0.54-3.13				
Urban Slum	1.55	0.56-4.34				
Rural	1					
Occupation			0.59			
Professional	1.09	0.57-2.09	0.78			
Sales And Services	0.86	0.45-1.62	0.63			
Skills Manual Job	0.71	0.35-1.43	0.34			
Others	1					

Table 4.4c: Factors Influencing Intention to use Contraceptives

Variables	OR	95%CI	P-Value	AOR	95%CI	P-Value
Type of Marriage						
Polygamy	0.89	0.52-1.52	0.12			
Monogamy	1					
Partner's Age			0.97			
<30	0.40	0.16-1.03	0.058			
30-34	0.72	0.41-1.29	0.27			
35-39	1.05	0.56-1.88	0.85			
40 and above	1					
Partner's Level of Education						
Secondary Level	1.01	0.63-1.62	0.13			
Tertiary Level	1					
Partner's Occupation			0.4			
Professional	1.38	0.74-2.54	0.31			
Sales And Services	1.04	0.53-2.04	0.90			
Skills Manual Job	0.63	0.28-1.42	0.27			
Others	1					
Knowledge			0.015			0.042
Poor Knowledge	0.4	0.21-0.77	0.006	0.44	0.23-0.86	0.017
Fair Knowledge	0.67	0.36-1.25	0.2	0.71	0.37-1.34	0.29
Good Knowledge	1					
More Children desired						
No	0.58	0.34-0.9	0.046	0.74	0.42-1.28	0.28
Yes	1					

4.3 Discussion of Findings

Assessing the intentions to use modern contraceptives is important for increasing modern contraceptives utilization. Although, there is still widespread debate about how to best capture this concept; however, Intentions to use is generally more accurate in future contraceptive use than unmet need.

The larger proportion of pregnant women found in this study fell within peak age of reproduction as reported elsewhere[2]. Two-thirds of the women have some education forms up to the secondary level just as other places[3]. This support the research that looked at the elements that influence the use of modern contraceptives found a correlation between the socioeconomic standing of a woman and her usage of contraception in emerging nations[4].

In this study, only small proportion of the pregnant women had good knowledge on modern contraceptives use. This is in line with a study conducted in Bhopal where it was reported that many pregnant women had poor knowledge[5]. Several studies have found that women of reproductive age in Nigeria, especially in rural areas lack to adequate knowledge of modern contraceptives, particularly due to misconception[3]. Antenatal care also allows women to communicate with their healthcare providers. This predisposes the respondent to acquiring necessary information as regarding modern contraceptive; counseling is done always at every clinic visit to ensure that necessary information is passed to the mothers; thus, the low knowledge of modern contraceptives found in this study was not expected.

Despite the low good knowledge of modern contraceptives use reported in this study, more than half of the women claimed they had used a modern contraceptives at some point before. This finding was contrary with what was documented in other studies[7]. However, Male condom was found to be the highest used modern contraceptive, this could be as a result of the affordability of the method and the accessibility unlike other methods. Low utilization of other methods have been linked with a variety of supply and demand-side issues[3].

The prevalence (38.1%) of intentions to use modern contraceptives found in this study was low compared to other studies done in Burkina Faso (59.20%), Ethiopia (44.1%), Mozambique (44.70%), and Pakistan (42.0%); but higher than that of Ghana (31.70%) and Chad (20.30%)[7]. However, finding was in the same range with the findings of the study conducted in Lagos[8]. Meanwhile, it was higher than the intentions to use among Nigerian women[7]. The finding was lower than the overall prevalence in Sub-Saharan Africa (53.7%)[6]

Age of women, fertility desire and knowledge of modern contraceptives use are the predictors of intentions to use modern contraceptives in this study. Women who were less than or 24, 25-29 and 20–34 years old were more likely to have an intention of contraception use than older age groups from 35 years and above. It is consistent with the studies conducted in Ethiopia[9] and Malawi[10]. This indicates that the proportion of women who have the intention of contraceptive use increases until it reaches its peak in the 30–34 age group. The possible explanation might be that women in the 15–24 and 25–34 age groups are at the

period that most women engage in one job or the other, or even schooling as a means of securing their future. As a result, they want to postpone their birth. This implies that they might have more intention to use contraceptives.

In this study, pregnant women who desired more children showed likelihood of having higher intentions to use modern contraceptives compared to their counterpart who said no to fertility desire. This is contrary to the expectation because studies had established that women are likely use modern contraceptives for limiting than for spacing[12]. However, the finding in this study may be due to the higher proportion of younger women and most of them had beyond secondary school education, which have positive link with intentions to use modern contraceptives.

Women who had poor and fair knowledge of modern contraceptives use had lesser odds of intentions to use contraceptives compared to their counterparts with good knowledge. The same is consistent with a study conducted in Jordan[13]. This can be explained in that women with good knowledge of modern contraceptives use are better informed and are aware of the benefits of modern contraceptives use. The findings suggest that knowledge of modern contraceptives use will increase intentions to use modern contraceptives. Although, intentions to use do not translate to actual use of modern contraceptives but this understating is critical for designing interventions important to increasing the contraceptive use among women of reproductive age

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Chapter Five

Conclusion

5.1 Summary of Findings

The study assessed the intentions to use modern contraception among antenatal care attendees of Adeoyo Maternity Hospital. The targeted population for the study was 323 antenatal care attendees of Adeoyo Hospital. A sample size of 323 respondents was selected. Cluster sampling technique was used to select the participants for the study. The selection was done on their antenatal clinic days. Due to the sample size, the selection was done for 9 antenatal clinic days, and it was done such that no individual was recruited more than once. For each antenatal clinic day, 50 or more pregnant women were recruited. This was drawn using the Leslie fisher's formula for sample size determination.

In the study, we found the respondent ages with majority 25-29 122(37.8%), with the least being less than 24(12.7%). It was revealed that 172 (53.3%) were Christians while 151(46.7%) were Muslims, 287(88.9%) reported to be married while 36(11.1%) said they are single, majority of the women with 190(58.8%) reported to have tertiary level of education 111(34.4%) have secondary level with the least 21(6.5%) having primary level of education. 253(78.3%) majority reported to leave in urban area, 45(13.9%) live in urban slum with the least percentage of the population 25(7.7%) claimed to be living in rural area.

The Findings of this study shows that number of living children is positively correlated with contraceptive use, which according to this study reported that majority, 152(47.1%) have more than one child, which support the data of knowledge of modern contraception.

The findings of this study shows that 86.5% of the respondents have heard about male condom, 59% have heard about female condom, 63.1 have heard about pills, 55.8 have heard about injectable, 42% have heard about IUCD, 43.3 have heard about implants, 29.5 have heard about female sterilization, 30.1 have heard about male sterilization while 44.2 have heard about emergency contraceptive.

This shows that 39.0% of the respondents have poor knowledge of modern contraception, 44.0% have fair knowledge while 17.0% have good knowledge of modern contraception, this means that 61% of respondent have knowledge of modern contraceptive, this further support the result of their socio demographic and socioeconomic status has an indication for knowledge of modern contraceptive.

Based on this study, findings showed there is no significant association between age of respondents and modern contraception at p-value 0f 0.062 in relation to socio demographic and economic characteristics. There is no significant association between religion of respondents and modern contraception at p-value of 0.29.

There is no significant association between educational level of respondents and modern contraception at the p-value of 0.073 there is no significant association between marital status of respondents and modern contraception at the p-value of 0.55.

Findings from the study showed that, at UOR, there is significant association between educational level and modern contraception. The study shows that people who have primary education is 1 time less likely to not use modern contraception compared to their counterpart who have tertiary education.

It was also revealed that people who have secondary education are 2 times less likely not to use modern contraception compared to their counterpart who have tertiary education. At UOR, there is significant association between age at first birth and modern contraceptive ever used. The study shows that women who have no birth are 7 times more likely not use modern contraceptive compared to their counterpart who are 20 years and above.

5.2 Conclusion

The prevalence of modern contraceptives use intentions found in this study was low compared to other estimates in incoming studies sub-Saharan Africa. Age, fertility desire, and knowledge of modern contraceptives use were the predictors of intentions to use modern contraceptives among pregnant women attending Adeoyo maternity teaching hospital, Ibadan.

5.3 Recommendations

1. It is important to make other modern contraceptives readily available with sensitization that is family focused, on its benefits, and to ensure that they have timely access to them.
2. The government should ensure that regular outreaches be embarked on to make sure that apart from pregnant women, population around the study area are also well informed.
3. It is important that government provide adequate clinic facilities to improve trainings for health workers on the recent knowledge of modern contraceptives and the application.

5.3 Contribution to Knowledge

This study documents the prevalence of intention to use modern contraceptives among pregnant women. Also, with the predictors of intention to use modern contraceptives established in this study, knowledge on modern contraceptives will be expanded among the women who participated.

5.4 Suggested Area for Further Research

1. Knowledge on contraception among women living in urban slum and rural areas.
2. Female empowerment to ensure active representation in choice of contraception.
3. Explaining the importance of safe modern contraception in rural areas of Ibadan.

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Appendix I

Informed Consent

Title of Study

Modern contraceptive use intention among antenatal clinic attendees of Adeoyo Maternity Teaching Hospital Ibadan, Oyo state Nigeria.

Principal Investigator

Jane Chidinma BENSON
Public Health Department, Lead City University
Lead City University, Toll Gate, Ibadan,
+2348060561643
Bensonjanechidinma@gmail.com

Purpose of Study

My name is Jane Chidinma Benson, a Master of Public Health student at the Faculty of Public Health, Lead City University. I am conducting a study on the modern contraceptive use intention among antenatal clinic attendees of Adeoyo maternity teaching hospital Ibadan, Oyo state.

I am interested in understanding the level of knowledge of modern contraception among antenatal care attendees in Adeoyo Maternity hospital, whether women in Ibadan use modern contraceptives. I equally want to know the factors that influence the use of modern contraceptives among women attending antenatal clinic in Ibadan. I will greatly appreciate your participation in my study. Your insight will assist me understand the reasons behind use of modern contraceptive.

Research Procedure

If you agree to be in this study, you will be asked to answer questions about yourself as well as questions about the factors that influence use of modern

contraceptive. These questions will be asked using a structured questionnaire. To fill the questionnaire will take about 5 to 10 minutes of your time.

Risks and Benefits

There is minimum or no risks if you take part in this study. There are also no incentives but the information you provide will help you improve on your health and that of your loved ones.

Compensation

There is no monetary compensation or incentive for this study. Participation is voluntary.

Confidentiality

Like it is stated above, your comments will not be anonymous. Every effort will be made by the researcher to preserve your confidentiality. Only the research team will have access to the answered questionnaires. Confidentiality and privacy will be maintained by keeping all materials under lock and key. Your name will not be recorded.

Contact Information

If you have questions at any time about this study, or you experience adverse effects as the result of participating in this study, you may contact the researcher whose contact information is provided on the first page. If you have questions regarding your rights as a research participant, or if problems arise which you do not feel you can discuss with the Primary Investigator, please contact the Institutional Review Board.

Voluntary Participation

Your participation in this study is voluntary. It is up to you to decide whether to take part in this study. If you decide to take part in this study, you will be asked to sign a consent form. After you sign the consent form, you are still free to withdraw at any time and without giving a reason. Withdrawing from this study will not affect the relationship you have, if any, with the researcher. If you withdraw from the study before data collection is completed, your data will be returned to you or destroyed.

Consent

I have read, and I understand the provided information and have had the opportunity to ask questions. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving a reason and without cost. I understand that I will be given a copy of this consent form. I voluntarily agree to take part in this study.

Participant's Signature _____ Date _____

Investigator's signature _____ Date _____

Appendix II

Lead City University, Ibadan, Oyo State

Dear Respondents,

The researcher is a student of the above named institution. This questionnaire is designed mainly to obtain information on the research topic "modern contraceptive use intention among antenatal clinic attendees of Adeoyo maternity teaching hospital Ibadan, Oyo state. Any information obtained for this study will be treated confidentially. Therefore, your fullest assistance to the success of this study will be appreciated.

Instruction**:** please tick or write down the correct answers to the questions.

Section A: Socio Demographic Characteristics

1. Age (as at last birthday):……
2. Religion: Christianity [ ] Islam [ ] Traditional [ ] Others (Specify)…….
3. Educational level: None [ ] Primary level [ ] Secondary level [ ] Tertiary level [ ]
4. Marital status: Single [ ] Married [ ] Divorced [ ] Widowed [ ] Separated [ ]
5. Age at first marriage……..
6. Age at first birth……..……..
7. Number of children living……
8. Number of boy child……..……
9. Number of girl child…….
10. Do you have a gender preference in this baby you are expecting?……

11. Number of children ever born…….

12. Type of marriage: Polygamy [ ] Monogamy [ ] Others specify……

13. Place of residence……..

14. Partner's age……

15. Partner's level of education……

16. How will you describe your occupation (tick the correct answer)

i. Professional / Managerial [ ]
ii. Clerical Job[]
iii. Sales and Services []
iv. Skills Manual Job[ ]
v. Unskilled Manual Job[ ]
vi. Agricultural [ ]
vii. House wife[ ]
viii. Unemployed [ ]

16a. Partner's occupation status:

i. Professional / Managerial [ ]
ii. Clerical Job [ ]
iii. Sales and Services [ ]
iv. Professional / Managerial [ ]
v. Clerical Job [ ]
vi. Sales and Services [ ]
vii. Skills Manual Job [ ]
viii. Unskilled Manual Job [ ]
ix. Agricultural [ ]
x. Unemployed [ ]

Section B: Utilization of Contraceptive Methods

Tick appropriate answers

17a. Have you heard about modern contraception before? Yes [ ] No [ ]

17b. If yes indicate

i. Male condom [ ]
ii. Female condom[ ]
iii. Pills [ ]
iv. Injectable [ ]
v. IUCD [ ]
vi. Implants [ ]
vii. Female sterilization [ ]
viii. Male sterilization [ ]
ix. Emergency contraceptives [ ]

18a. Have you ever used any modern contraception before? Yes[ ] No [ ]

18b. If yes, indicate

I. Male condom[ ]
II. Female condom [ ]
III. Pills [ ]
IV. Injectable [ ]
V. Implant[ ]
VI. Female Sterilization [ ]
viii. Male Sterilization[ ]
ix. Emergency Contraceptives [ ]

18c. How long did you use the contraceptive methods the last time you were on it……

19. Have you ever used anything to delay or avoid pregnancy before? Yes [ ] No[]

19a.If yes, What did you use?.....

20. Do you intend to have another child after you put to bed? Yes [ ] No [ ]

20a. If yes, How long will you wait?.....

20b. What is the ideal birth spacing you plan to use?.....

21c. Tick some of the reason(s) for any decision you have?

i. Avoid low standard of living [ ]
ii. Cost of child bearing [ ]
iii. Difficulty in nurturing many children [ ]
iv. Career [ ]
v. Child spacing [ ]
vi. To protect unwanted pregnancy [ ]
vii. Desire to have no more children [ ]

viii. Easy Access at the health care centre[ ]
ix. Advise by friends and relatives [ ]
x. Partner's decision [ ]
xi. Others (Specify)…….

20d. If No, tick at least (3) reasons among options provided for not using any of the contraceptive methods?

i. Fear of side effects [ ]
ii. No contraceptive of my choice [ ]
iii. High cost [ ]
iv. Lack of access to healthcare centre[ ]
v. Disapproval from spouse [ ]
vi. Embarrassment [ ]
vii. Religion [ ]
viii. Others specify_____

21. Which of the contraceptives have you used most?.....
22. How long were you on it before getting pregnant?.....
23. Were you satisfied with the method you used? Yes [ ] No [ ]
24. Who decides the use of contraceptive method?

i. I only [ ]
ii. Joint decision between me and my spouse/partner [ ]
iii. Service provider [ ]
iv. Relatives [ ]
v. Others (Please specify)…….

23. Who in your family usually have the final say concerning child spacing?

i. Me [ ]
ii. My partner [ ]
iii. My partner and I [ ]
iv. Relatives [ ]
v. Service provider [ ]

Section C: Knowledge of Contraceptive Use

S/N		Yes	No	I Don't Know
24	The Convenience of Buying or Using Contraceptive is the Major Priority Consideration for Choosing Contraceptive Method.			
25	Oral Contraceptive Pills affect the Fertility.			
26	Menstrual Cycle can be Distorted as a Result of Oral Contraceptive Pill.			
27	Vaginal Douching can be Used as Emergency Contraceptive.			
28	Emergency Contraceptive Substitute Regular Contraception.			
29	Condom is a Traditional Contraceptive Method.			
30	Intrauterine Device (Copper T) Protects Pregnancy for between 5 and 10 Years			
31	Men should be Involved in Taking Decision on the Usage of Contraception Methods.			
32	Withdrawal Method is a Safe Contraceptive Method.			

33	All Contraceptive Method Prevent Sexually Transmitted Infection.			
34	Contraceptive Use can make you Gain Weight.			
35	Contraceptive Use should be Discussed with Partner.			
36	Regular Checkup is necessary for Someone on Modern Contraception.			
37	Modern Contraceptives are Affordable.			
38	Periodic Calendar is a Modern Contraceptives			

Bio-data

A. Personal Data

Full name:	Jane Chidinma BENSON
Address:	3, Osibote close, Harmony Estate, Isheri Lagos State
E-mail Address:	bensonjanechidinma@gmail.com
Phone no:	08060561643
Date of Birth:	12th June, 1997
Place of birth:	Port Harcourt, Rivers State
Nationality:	Nigerian
Sex:	Female
Marital Status:	Single
Name of Next of Kin:	Precious Benson
Address of Next of Kin:	3, Osibote close, Harmony Estate, Isheri Lagos State

B. Educational Background

Educational Institutions Attended With Dates And Qualifications

First School Leaving Certificate 2003-2009

Higher Ground Nursery and Primary school Aba, Abia State

West African Senior Secondary Certificate 2009-2015

Higher Ground College Aba, Abia State

Bachelor of Medical Laboratory Science (BMLS) 2016-2020

Irgib Africa University, Benin Republic

Masters of Public Health 2021 - current

C. Work Experience

University College Hospital, Ibadan, Oyo State 2023 to date

- Medical Laboratory Science (Foreign Graduate Internship)

Ring Road State Hospital, Ibadan, Oyo State 2021-2022

- Process patient's body fluids such as urine and spinal fluid using qualitative and quantitative chemical analyses, using sophisticated technology.
- Perform routine and specialized test for over 100 patients daily, including full blood count, microbiology, immunology, clinical chemistry and Urinalysis.

Flourish Medical Laboratory, Isheri, Lagos State 2018 - 2018
Laboratory Intern

- Prepare over 50 samples daily for analysis, through patient registration and sample collection.
- Develop expertise and Knowledge in hematology, blood banks, chemistry and microbiology.
- Disposal of chemical waste in the designated areas, and appropriate system.

D. Certification

- **Responsible Conduct of Research**

  CITI Program

- **Observational Research Protocols**

  CITI Program

- **Clinical Research Coordinator (CRC)**

  CITI Program

- **Human Subjects Research Protection Training**

  CITI Program

Leadership Roles

Volunteer (General Secretary)

Medical Community Development Service

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_____ _____

Signature Date

The University Compliance Certification

This is to certify that this thesis by Jane Chidinma BENSON with Matric No. LCU/PG/002196 in the Department of Public Health, Faculty of Basic Medical and Applied Sciences, Lead City University, Ibadan is in full compliance with the approved university format.

_____ _____

Signature **Date**