# EFFECTS OF TARGETED HEALTH EDUCATION ON UPTAKE OF CONTRACEPTIVES AMONG WOMEN OF REPRODUCTIVE AGE IN NNEWI-CITY, SOUTH-EAST NIGERIA

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## DECLARATION

This thesis is my original work and has not been presented for a degree in any university.

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## DEDICATION

This research is the fruit of innumerable and arduous sacrifices. Through the researchers' efforts, his work is wholeheartedly and proudly dedicated to the persons who serve as a creative guide. I dedicate the thesis to my family: Mamfe, Aondohemba, Akpensongun, Sewuese, Orgem, Doosuur and Ngodoo Tyotswam from whom I am inspired. Thank you for your unconditional love and moral support.

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## ABBREVIATIONS & ACRONYMS

| | |
|---|---|
| ANC | Antenatal Clinic |
| ARH | Adolescent Reproductive Health |
| CPR | Contraceptive Prevalence Rate |
| DHS | Demographic and housing survey |
| FMOH | Federal Ministry of Health |
| FP | Family Planning |
| HBM | Health Belief Model |
| IUCD | Intrauterine Contraceptive Device |
| NAUTH | Nnamdi Azikiwe University Teaching Hospital |
| NDHS | Nigeria Demographic and Housing Survey |
| NURHI | Nigerian Urban Reproductive Health Initiative |
| mCPR | Modern Contraceptive Prevalence Rate. |
| MDGs | Millennium Development Goals |
| SDGs | Sustainable Development Goals |
| SPSS | Statistical package for the social sciences |
| SRH | Sexual and Reproductive Health |
| TFR | Total fertility rate |
| WCA | Women of childbearing age |

## DEFINITION OF OPERATIONAL TERMS

**Contraceptive Methods:** Techniques used to prevent pregnancy as a consequence of sexual intercourse.

**Contraceptive Uptake**: Within the context of this study refers to when a woman in the reproductive age recorded using any contraceptive method (e.g. condom, injectables, intrauterine device, Implanon and surgical methods).

**Lactation Amenorrhea** – occurs during the period of exclusive breastfeeding after delivery when many women remain amenorrhoeic and cannot become pregnant during this period of breast feeding for up to about six months this is referred to as using breastfeeding as a method of family planning.

**Lost to Follow up** – those clients who cannot be traced or did not turn up following contraceptive counselling and services.

**Low-income Countries**- refers to countries with Gross National Income (GNI) per capita of $ 1,045 or less in 2014. (World Bank, report 2015)

**Knowledge**: According to Bankowski and Bryant, knowledge is the capacity to gain, retain information, a mixture of understanding, experience, discernment and expertise. Knowledge within the context of this study refers to what the research participants understand about family planning methods, usability, side effects, and advantages.

**Nnewi-City:** This is the city where the respondent of this study shall be drawn from. It is the second largest commercial town in Anambra State of Nigeria.

**Perception:** The way in which something is understood or interpreted. Within the context of this study, perception means belief or persuasion regarding contraceptive methods.

**Practice:** In the background of this study, practice refers to utilization of the methods of contraception over the period the oral educational intervention on contraception persists in the study area.

**Targeted Education:** In this study imply to the intended teaching that provides a cumulative framework to make sure chosen tasks are purposeful, empirical, and personal for a given learner. In this study, oral education on contraceptives delivered physically will be advocated.

**Unmet Needs for Family Planning** – This occur when a sexually active person is not using any method of contraception despite having a desire to delay pregnancy or permanently stop conception and are unable to access contraceptive services.

**Women of reproductive age group:** The women's age ranged between 18-49 years**.**

## ABSTRACT

Contraceptive use is critical for reproductive health, yet uptake remains low in Nigeria due to barriers such as lack of awareness, cultural beliefs, and misconceptions about side effects. This study assesses the impact of targeted health education on contraceptive uptake among women in Nnamdi Azikiwe University Teaching Hospital (NAUTH), Nnewi. Utilizing a randomized controlled trial design, 275 women were assigned to either an intervention group, which received a 60-minute educational session on contraceptive methods, or a control group. Data was collected using structured interviewer-administered questionnaires before and two weeks after the intervention. The findings revealed a significant increase in contraceptive uptake among the intervention group, rising from 41.1% to 87.1%, compared to a modest increase in the control group from 41.5% to 49.6%. From study findings, the intervention effectively improved knowledge and perceptions of contraceptives, addressing key barriers such as low awareness, misconceptions about side effects, and religious concerns. Approval for contraceptive use increased significantly in the intervention group, with 86.4% expressing approval post-intervention, compared to 72.6% in the control group. The p-value of 0.014 suggests that the intervention positively influenced participants' approval of contraceptive use. Factors associated with higher contraceptive use included younger age, higher education levels, formal employment, and marital status. This study underscores the importance of targeted health education in enhancing contraceptive uptake. Integrating such educational interventions into public health strategies can significantly improve reproductive health outcomes in settings similar to Nnewi, Nigeria. It is recommended to educate the health workers to know the esssence of targeted health education on the uptake of contraceptives. Increasing identical health education interventional approaches to enhance utilization of contraceptives in Nigeria where there is low utilization. Health education interventions should be integral to public health strategies to improve contraceptive uptake. Tailored educational programs addressing specific misconceptions, barriers, and cultural sensitivities can significantly enhance reproductive health outcomes. Further study is required to understand the complex relationship between religious beliefs and contraceptive use. Studies should aim to identify effective ways to provide culturally sensitive education that respects religious beliefs while promoting reproductive health.

# CHAPTER ONE: INTRODUCTION

## 1.1 Background to the study

The uptake of contraceptives among women of reproductive age is a critical public health issue, particularly in developing countries where high fertility rates and limited access to family planning services contribute to maternal and child health challenges (WHO, 2018). Of the many factors that influence child and maternal health, the uptake of contraceptives is rated highly, resulting in several countries measuring the prevalence of contraceptive use among their reproductive population (Blackstone et al, 2017). In Nigeria, the total fertility rate remains high, with an average of 5.3 children per woman, and the unmet need for family planning is substantial (Cleland et al., 2014). The National Demographic and Health Survey (NDHS) 2018 reported that only 17% of married women use modern contraceptive methods. This low prevalence is concerning given the associated risks of unintended pregnancies, unsafe abortions, and maternal mortality. Nigeria's modern contraceptive prevalence rate (mCPR) of 12% is one of the lowest in the world (Adedini et al., 2023). This low uptake is often attributed to a combination of socio-cultural, economic, and educational factors.

Nnewi, a prominent town in Anambra State, reflects these national trends. Women of reproductive age in this region face numerous challenges in accessing and utilizing contraceptives. Factors such as limited knowledge, misconceptions about contraceptive methods, cultural and religious opposition, and inadequate healthcare services contribute to the low uptake (Afolabi & Afolabi, 2019).

Targeted health education has been identified as a potential strategy to address these barriers. By providing tailored information and addressing specific misconceptions and cultural beliefs, health education can enhance knowledge, change attitudes, and ultimately increase the uptake of contraceptives. Targeted interventions can significantly improve contraceptive use by addressing the unique needs and concerns of specific populations.

This study aims to evaluate the effect of targeted health education on the uptake of contraceptives among women of reproductive age in Nnewi. By focusing on this specific population, the research seeks to provide evidence-based recommendations for improving family planning services and reproductive health outcomes in similar settings across Nigeria.

### 1.2 Statement of the problem

Despite global advancements in reproductive health, the uptake of contraceptives among women of reproductive age in Nnewi, Anambra State, Nigeria, remains significantly low. The National Demographic and Health Survey (NDHS) 2018 indicates that only 17% of married women in Nigeria use modern contraceptive methods, reflecting a substantial unmet need for family planning (National Population Commission [NPC] & ICF, 2019). This low prevalence is particularly concerning in Nnewi, where socio-cultural, economic, and educational barriers further impede access to and utilization of contraceptives. Women in Nnewi face numerous challenges, including limited knowledge about contraceptive options, misconceptions, cultural and religious opposition, and inadequate healthcare services (Afolabi & Afolabi, 2019). These barriers contribute to high rates of unintended pregnancies, unsafe abortions, and maternal mortality, underscoring the urgent need for effective interventions.

Targeted health education has the potential to address these barriers by providing tailored information that can enhance knowledge, change attitudes, and increase the uptake of contraceptives. However, there is a lack of empirical evidence on the effectiveness of such interventions in this specific context. This study aims to fill this gap by evaluating the impact of targeted health education on contraceptive uptake among women of reproductive age in Nnewi, providing insights that could inform policy and programmatic efforts to improve reproductive health outcomes in similar settings across Nigeria.

### 1.3 Justification

The uptake of contraceptives among women of reproductive age in Nnewi, Anambra State, Nigeria, remains critically low, despite the availability of various contraceptive methods. According to the Nigeria Demographic and Health Survey (NDHS) 2018, only 17% of married women in Nigeria use modern contraceptive methods, highlighting a significant unmet need for family planning (National Population Commission [NPC] & ICF, 2019). This low prevalence is particularly concerning in Nnewi, where socio-cultural, economic, and educational barriers further impede access to and utilization of contraceptives. Several studies have identified key barriers to contraceptive use in Nigeria, including limited knowledge, misconceptions, cultural and religious opposition, and inadequate healthcare services (Afolabi & Afolabi, 2019).

These barriers contribute to high rates of unintended pregnancies, unsafe abortions, and maternal mortality, which are critical public health issues in the region.

Targeted health education has been shown to be an effective strategy in improving health outcomes by addressing specific barriers and providing tailored information that can enhance knowledge, change attitudes, and increase the uptake of health services (Glanz, Rimer, & Viswanath, 2015). However, there is a lack of empirical evidence on the effectiveness of targeted health education interventions specifically aimed at increasing contraceptive uptake among women in Nnewi. This study aims to fill this gap by evaluating the impact of targeted health education on contraceptive uptake among women of reproductive age in Nnewi. The findings from this study will provide valuable insights that can inform policy and programmatic efforts to improve reproductive health outcomes in Nnewi and similar settings across Nigeria. By addressing the specific barriers to contraceptive use through targeted health education, this study has the potential to contribute significantly to reducing unintended pregnancies, unsafe abortions, and maternal mortality in the region.

### 1.4 Research Questions

1. What is the level of contraceptive uptake and the associated factors among women aged 18-49 in NAUTH, Nnewi?
2. What are the factors associated with the uptake of contraceptives among women aged 18-49 in NAUTH, Nnewi?
3. What are the main sources of contraceptive information and perceived access among women aged 18-49 in NAUTH, Nnewi?
4. How does targeted health education impact contraceptive uptake among women aged 18-49 in NAUTH, Nnewi?

### 1.5 Null Hypotheses:

1. There is no significant level of contraceptive uptake among women aged 18-49 in NAUTH, Nnewi, and no factors significantly influence this uptake.
2. There is no factor significantly associated with the uptake of contraceptives among women aged 18-49 in NAUTH, Nnewi.

3. The main sources of contraceptive information and perceived access among women aged 18-49 in NAUTH, Nnewi do not significantly affect their contraceptive uptake.
4. Targeted health education does not significantly impact the uptake of contraceptives among women aged 18-49 in NAUTH, Nnewi.

### 1.6 Main Objective

To evaluate the effect of targeted health education on the uptake of contraceptives among women of reproductive age (18-49 years) in NAUTH, Nnewi, Anambra State, Nigeria.

### 1.7 Specific Objectives

1. To determine the level of contraceptive uptake among women aged 18-49 in NAUTH, Nnewi, and identify the associated factors.
2. To identify the factors associated with the uptake of contraceptives among women aged 18-49 in NAUTH, Nnewi.
3. To identify the main sources of contraceptive information and evaluate the perceived access to contraceptives among women aged 18-49 in NAUTH, Nnewi.
4. To evaluate the impact of targeted health education on the uptake of contraceptives among women aged 18-49 in NAUTH, Nnewi.

### 1.8 Significance of the study

This study aims to provide valuable insights into the impact of targeted health education on the uptake of contraceptives among women of reproductive age in Nnewi, Anambra State, Nigeria. The significance of this study is multifaceted. By identifying the factors that influence contraceptive uptake and the effectiveness of targeted health education, this study can help design more effective public health interventions. This can lead to increased contraceptive use, reduced unintended pregnancies, and improved maternal and child health outcomes. Understanding the current level of knowledge and perceptions about contraceptives among women can help tailor educational programs to address misconceptions and knowledge gaps. This can empower women to make informed decisions about their reproductive health. The findings from this study can

provide evidence-based recommendations for policymakers and healthcare providers. This can lead to the development of policies and practices that support the provision of accurate contraceptive information and improve access to contraceptive services.

By identifying the main sources of contraceptive information and perceived access issues, the study can highlight barriers that need to be addressed. This can help in designing strategies to improve access to contraceptives, especially for underserved populations. This research will add to the existing body of knowledge on reproductive health and contraceptive use in Nigeria. It can serve as a reference for future studies and contribute to the global understanding of the impact of health education on contraceptive uptake. Ultimately, the study aims to empower women by providing them with the knowledge and resources they need to take control of their reproductive health. This can lead to greater autonomy and improved quality of life for women in Nnewi and beyond. By addressing these aspects, the study will not only contribute to academic knowledge but also have practical implications for improving reproductive health services and outcomes in the community

## 1.9 Limitations and Delimitations

### 1.9.1 Limitations of the study

The study is restricted to NAUTH, Nnewi women between the ages of 18 and 49. It's possible that the conclusions cannot be applied to populations or areas outside of this particular geographic and demographic niche. Since the study uses self-reported data, the accuracy of the responses may be impacted by recall or social desirability biases. The study's scope, including the number of participants and the depth of data collection and analysis, may be limited by a lack of funding and resources. The study period was somewhat short, which could have impacted the breadth of the investigation and the capacity to track the effects of focused health education over the long run. Participants' reactions and behaviors may have been influenced by cultural and societal norms surrounding the use of contraceptives, which may have not been fully recorded or accounted for in the study.

### 1.9.2 Delimitations of the study

The study allows for a careful assessment of this specific demographic because it was primarily focused on women in NAUTH, Nnewi, Anambra State, Nigeria who are of reproductive age. The research was pertinent to women of reproductive age and their contraceptive needs and practices because it was restricted to women ages 18 to 49. The influence of focused health education was carefully examined in this study, putting a distinct emphasis on how well educational interventions work to increase the uptake of contraceptives. To ensure consistency and dependability in the data collected, the study employed standardized questionnaires and interviews. The study's well-defined research questions served as a roadmap for keeping the investigation of the effect of targeted health education on contraceptive uptake focused and methodical.

## 1.10 Theoretical framework

The study on the effect of targeted health education on the uptake of contraceptives among women of reproductive age in Nnewi, Anambra State, Nigeria, aims to address critical gaps in knowledge and practice regarding contraceptive use. This framework integrates several health behavior theories to provide a comprehensive understanding of the factors influencing contraceptive uptake and the impact of health education interventions.

The Health Belief Model (HBM) is a widely used theoretical framework for understanding health behaviors, particularly in the context of preventive health measures. The HBM posits that individuals' health-related behaviors are influenced by their perceptions of susceptibility to a health problem, the severity of the problem, the benefits of taking preventive action, and the barriers to taking that action (Rosenstock, 1974). The HBM is particularly relevant for this study as it helps to identify the psychological and social factors that influence contraceptive use among women in Nnewi. By understanding these factors, targeted health education programs can be designed to address specific barriers and enhance the perceived benefits of contraceptive use. The Theory of Planned Behavior (TPB) extends the Health Belief Model by incorporating the role of intention in predicting behavior. According to TPB, behavior is determined by intention, which is influenced by attitudes toward the behavior, subjective norms, and perceived behavioral control (Ajzen, 1991). TPB is

useful for understanding how social influences and perceived control impact contraceptive use. This theory can help identify the social and environmental factors that need to be addressed in health education programs to improve contraceptive uptake.

Social Cognitive Theory (SCT) emphasizes the role of observational learning, social experiences, and reciprocal determinism in behavior change (Bandura, 1986). SCT suggests that individuals learn behaviors by observing others and that behavior change is influenced by the interaction between personal factors, environmental factors, and behavior. SCT provides a framework for understanding how health education programs can influence contraceptive use through modeling, reinforcement, and self-regulation strategies. The Diffusion of Innovations Theory explains how new ideas and technologies spread through cultures (Rogers, 2003). This theory is relevant for understanding how information about contraceptives and health education programs is disseminated and adopted by women in Nnewi. This theory helps to identify effective communication strategies and the role of social networks in promoting contraceptive use. By integrating the Health Belief Model, Theory of Planned Behavior, Social Cognitive Theory, and Diffusion of Innovations Theory, the study can effectively address the research questions and contribute to the development of targeted health education programs that improve contraceptive use.

### 1.11 Conceptual Framework

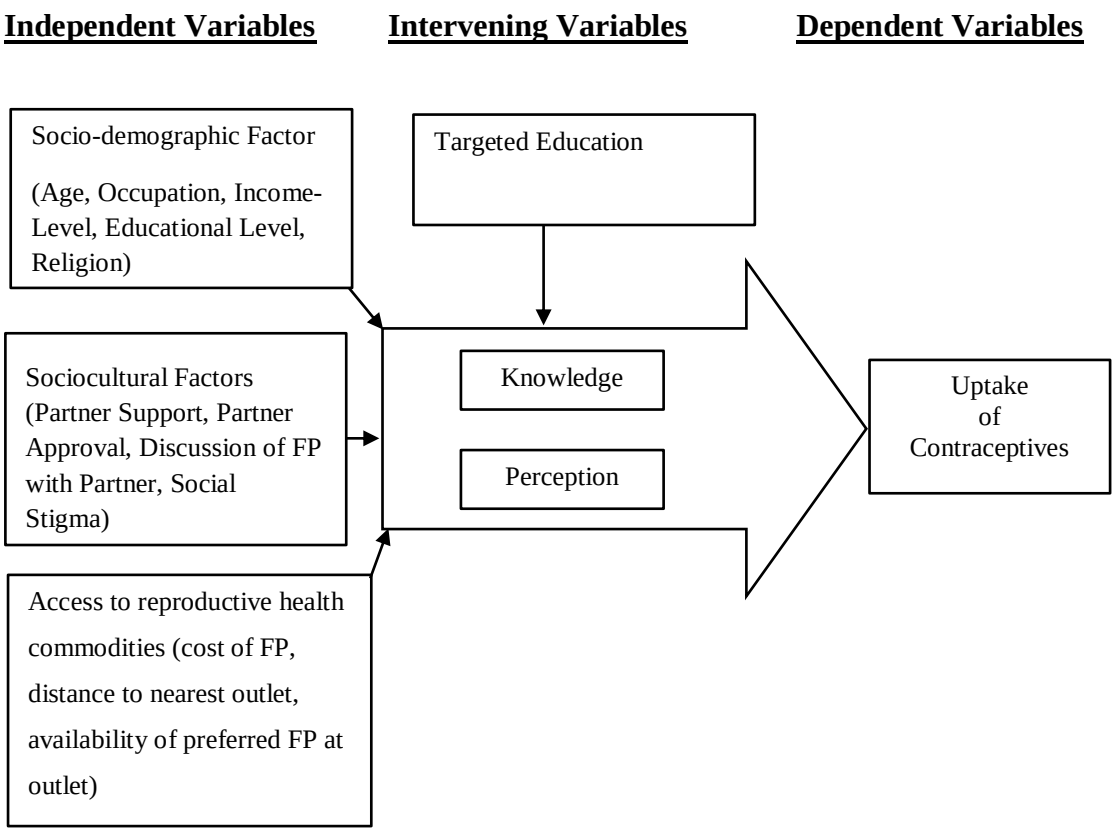


**Figure 1.1: Conceptual Framework**

Sociodemographic factors, sociocultural factors, and access to reproductive health commodities influence the uptake or non-uptake of contraceptives.

Targeted health education intervention is the modifiable variable that may result in a change in the uptake and non-uptake of contraceptives.

# CHAPTER TWO: LITERATURE REVIEW

## 2.1 Introduction

The uptake of contraceptives among women of reproductive age is a critical public health issue, particularly in regions with low contraceptive prevalence rates. In Nigeria, the uptake of contraceptives remains suboptimal, with significant variations across different states and communities. This disparity underscores the need for targeted health education interventions to improve contraceptive use and reproductive health outcomes. Recent studies have highlighted the impact of targeted health education on contraceptive uptake. For instance, a study conducted in Nigeria demonstrated that targeted health education significantly increased the level of awareness and uptake of contraceptives among women aged 18-49 years (Afolabi & Adebayo, 2020). The study found that women who received targeted health education showed a higher increase in contraceptive use compared to those who did not receive such education (Afolabi & Adebayo, 2020).

The level of contraceptive uptake is influenced by various factors, including socio-economic status, educational level, cultural beliefs, and access to healthcare services. Understanding these factors is crucial for designing effective interventions. Additionally, the knowledge and perceptions of women regarding contraceptives play a significant role in their decision to use them. Studies have shown that misconceptions and lack of accurate information about contraceptives can hinder their uptake (Adeyemi & Adekanbi, 2019). Sources of contraceptive information and perceived access to these services are also critical components that affect contraceptive use. Women often rely on healthcare providers, community health workers, and media for information on contraceptives. However, the accessibility and reliability of these sources can vary, impacting the overall uptake of contraceptives (Okeke & Anyaehie, 2018).

This literature review aims to explore the current level of contraceptive uptake and the associated factors among women aged 18-49 in Nnamdi Azikiwe University Teaching Hospital (NAUTH), Nnewi. It will also examine the knowledge and perceptions of these women about contraceptives, identify the main sources of contraceptive information, and assess the impact of targeted health education on contraceptive uptake.

## 2.2 Contraceptives: What they are, types, and benefits

### 2.2.1 What are contraceptives

Contraceptives, also known as birth control, are methods or devices used to prevent pregnancy. According to World Health Organization, family planning allows people to attain their desired number of children and to determine the spacing of their pregnancies. It is achieved through use of contraceptive methods and the treatment of infertility (WHO, 2023). They work by interfering with the normal process of ovulation, fertilization, and implantation. Contraceptives can be broadly categorized into several types, each with its unique mechanisms and benefits.

### 2.2.2 Types of Contraceptives

Contraceptives, also known as birth control, are methods or devices used to prevent pregnancy. According to World Health Organization (2023), they can be broadly categorized into several types:

1. Hormonal Methods: These methods use hormones to regulate or stop ovulation and include: Oral Contraceptive Pills; taken daily to prevent ovulation, Injectables; administered every few months to prevent ovulation, Implants; small rods placed under the skin that release hormones to prevent ovulation, Patches: applied to the skin and release hormones to prevent ovulation and Vaginal Rings; placed inside the vagina and release hormones to prevent ovulation.
2. Intrauterine Devices (IUDs): T-shaped devices inserted into the uterus to prevent fertilization. They can be hormonal or non-hormonal.
3. Barrier Methods: These methods block sperm from reaching the egg and include: these methods block sperm from reaching the egg and include: Condoms: Worn on the penis or inside the vagina to prevent sperm from entering the uterus, Diaphragms and Cervical Caps; placed inside the vagina to cover the cervix and block sperm.
4. Sterilization: Permanent methods of contraception that include: Tubal Ligation that entail surgical procedure for women to block or seal the fallopian tubes, Vasectomy; surgical procedure for men to cut or seal the vas deferens (World Health Organization, 2023)1.
5. Natural Methods: These methods involve tracking fertility and include: These methods involve tracking fertility and include: Fertility Awareness-Based Methods

that aid monitoring ovulation signs to avoid intercourse during fertile periods, Withdrawal methods; removing the penis from the vagina before ejaculation and Lactational Amenorrhea Method; using breastfeeding as a temporary method of contraception.

### 2.2.3 Benefits of Contraceptives

Contraceptives offer a variety of benefits that extend far beyond mere pregnancy prevention. These advantages can be broadly categorized into contraceptive and non-contraceptive benefits.

#### Contraceptive Benefits

First and foremost, contraceptives are highly effective in preventing unintended pregnancies. When used correctly, contraceptives such as oral contraceptive pills boast an effectiveness rate of over 99% with perfect use, according to the World Health Organization (2023). This high efficacy rate is crucial in allowing women to exert control over their reproductive planning, thereby enabling them to space and plan their pregnancies more effectively. This planning often leads to better health outcomes for both mothers and their children, as it reduces the risks associated with closely spaced pregnancies.

#### Non-Contraceptive Benefits

Beyond pregnancy prevention, contraceptives provide several non-contraceptive benefits. One of the most notable is the regulation of menstrual cycles. Hormonal contraceptives, such as oral pills, help in making menstrual cycles more predictable and manageable, as reported by Healthline (2023). This regulation is particularly beneficial for women who experience irregular periods. Moreover, many women find that hormonal contraceptives significantly reduce menstrual cramps and pain, providing much-needed relief from dysmenorrhea. These contraceptives also assist in the management of acne, as they regulate hormones that can cause skin breakouts. For women who suffer from menstrual migraines, hormonal contraceptives can be a boon, as they help in preventing these migraines by stabilizing hormone levels.

Long-term use of oral contraceptives has been linked to a reduction in the risk of certain cancers, particularly ovarian and endometrial cancer. This protective effect adds another layer of benefit to the use of contraceptives. Additionally, hormonal contraceptives are commonly used in the treatment of Polycystic Ovary Syndrome (PCOS). They help manage symptoms such as irregular periods and excess androgen levels, thereby improving the quality of life for women with PCOS.

### 2.3 Concept of Unmet Need

Unmet need for contraception refers to the condition where women who want to avoid or delay pregnancy are not using any method of contraception. This concept is crucial in understanding gaps in family planning services and identifying areas for improvement (Bradley & Casterline, 2014).

#### 2.3.1 Contributing Factors to Unmet Need

Access to contraceptives is often hindered by a combination of geographic, economic, and logistical barriers. For many women, particularly those living in rural areas, the limited availability of healthcare facilities can severely restrict their ability to obtain contraceptives. Economic constraints further compound this issue, as the cost of contraceptives can be prohibitive for those with limited financial resources. The Health Economics Review (2022) underscores how these barriers collectively impede women's access to necessary reproductive health services.

Cultural and religious beliefs also play a significant role in discouraging contraceptive use. In many communities, cultural norms and religious doctrines can create a stigma around the use of contraceptives. This stigma can deter women from seeking contraceptive services, even when they are available. Bradley and Casterline (2014) highlight how these societal pressures contribute to the unmet need for contraception, perpetuating cycles of unintended pregnancies and poor reproductive health outcomes.

A lack of education and awareness further exacerbates the problem of unmet need. Many women are not adequately informed about the various contraceptive options available to them and the benefits these options provide. Misconceptions and myths about contraceptives are prevalent and can significantly influence women's decisions. Bradley and Casterline (2014) point out that insufficient knowledge is a major barrier

to contraceptive uptake, emphasizing the need for comprehensive education and information campaigns to address these gaps.

Healthcare system limitations also contribute to the unmet need for contraception. Inadequate training of healthcare providers and a lack of resources in healthcare facilities can lead to poor service delivery. These issues result in women not receiving the necessary guidance and support to make informed decisions about their reproductive health. The Health Economics Review (2022) discusses how these systemic deficiencies need to be addressed to improve the quality of contraceptive services and ensure they are accessible to all women.

### 2.3.2 Effects of Unmet Need

#### On Individuals

The effects of unmet need for contraception on individuals are profound and multifaceted. Women who experience an unmet need for contraception face a significantly higher risk of unintended pregnancies. Such pregnancies often lead to adverse health outcomes and can drastically affect the socio-economic status of these women, as highlighted by Bradley and Casterline (2014). This situation underscores the critical importance of access to contraceptive methods for women's overall health and well-being. Moreover, the unmet need for contraception is associated with heightened health risks, including higher maternal and infant mortality rates. These increased risks are largely due to closely spaced pregnancies and the subsequent lack of adequate prenatal care. The 2022 Health Economics Review articulates how these gaps in contraception access contribute to an increased likelihood of adverse health outcomes. Addressing unmet needs through targeted health education and improved access to contraceptive services is, therefore, imperative for enhancing both maternal and child health.

#### On Communities

The effects of unmet need for contraception extend beyond individuals to have profound impacts on entire communities. High rates of unintended pregnancies can place a significant economic burden on community resources. This strain is felt across various sectors, including healthcare, education, and social services, as articulated by Bradley and Casterline (2014). The additional demands on these services can limit the

availability of resources for other essential community needs, thereby stretching already limited budgets and impeding overall community development. Moreover, the social implications of high unmet need for contraception are equally concerning. Communities facing high levels of unmet need often experience elevated rates of poverty and lower levels of education, which can perpetuate a cycle of disadvantage. The 2022 Health Economics Review highlights how these communities may struggle to break free from this cycle, as limited access to contraceptives can hinder women's ability to pursue education and employment opportunities. This, in turn, can affect the socio-economic growth of the entire community, making it more challenging to achieve long-term development goals.

**On Government**

Unmet need for contraception poses significant challenges for governments, both in terms of healthcare costs and policy implementation. Governments often face increased healthcare costs due to the need to manage unintended pregnancies and their associated complications. Bradley and Casterline (2014) highlight how these costs can escalate, putting additional strain on public health systems that are already operating under tight budgets. This situation not only affects the immediate healthcare infrastructure but also diverts resources from other critical health services, exacerbating overall healthcare inefficiencies. Moreover, addressing unmet need requires the formulation and implementation of comprehensive policies and programs. These initiatives are essential to ensure widespread access to contraceptive services and education. However, as noted in the 2022 Health Economics Review, developing and sustaining such policies can be particularly challenging in resource-limited settings. Governments must navigate a complex landscape of financial constraints, cultural considerations, and logistical hurdles to effectively implement these programs. The success of these policies is crucial for improving reproductive health outcomes and reducing the long-term economic burden on the healthcare system.

## 2.4 Uptake of Modern Contraceptives

### 2.4.1 Uptake of Contraceptives

Globally, the uptake of modern contraceptives has seen significant progress over the past few decades. According to the United Nations, the global contraceptive prevalence rate among women of reproductive age (15-49 years) increased from 54% in 1990 to

64% in 2019 (United Nations, 2019). However, disparities remain, with unmet needs for family planning still prevalent in many regions, particularly in low- and middle-income countries (LMICs) (BMC Public Health, 2018).

In sub-Saharan Africa, the uptake of modern contraceptives has been relatively low compared to other regions. The contraceptive prevalence rate in this region was about 28% in 2019, with significant variations between countries (Reproductive Health, 2023). Factors contributing to low uptake include limited access to healthcare services, cultural and religious beliefs, and economic barriers (Reproductive Health, 2023).

Asia has seen a higher uptake of modern contraceptives, with a prevalence rate of around 65% in 2019. Countries like China and India have implemented extensive family planning programs, contributing to higher contraceptive use (BMC Public Health, 2018). However, disparities exist within the region, with rural areas often lagging behind urban centers in terms of contraceptive access and use (BMC Public Health, 2018).

Despite efforts to increase contraceptive use, the rate of contraception in southern Nigeria remains below the targets set by the MDGs and SDGs, at 5.6% and 3.7%, respectively (United Nations, 2017). In Anambra State, the rate is about 9.7%, which the state government acknowledges as below expectations (The Challenge Initiative, 2019). Ajayi et al. (2018) explored the prevalence of contraceptive use in south-western Nigeria, revealing that traditional methods of family planning are widely used. Among over 800 respondents, 44.3% still relied on traditional methods such as withdrawal, standard day/rhythm, and lactation amenorrhea. Despite the high number of women using traditional methods, the study found that all participants were aware of contraception and practiced either traditional or modern methods. Bankole and Onasote (2016) corroborated these findings, reporting high levels of awareness of contraception among nearly 800 respondents in south-western Nigeria. The study suggested that while awareness was moderate, it translated into improved uptake of modern contraceptives by women of reproductive age, with about 40% of respondents using modern methods. However, the depth of awareness was questioned, as respondents primarily mentioned male condoms, oral pills, and injectables. Anate et al. (2020) further supported these findings, noting that among 325 respondents who had heard of family planning, only

11.7% had good knowledge of contraception, and 38.5% had ever used modern methods.

### 2.4.2 Sources of Information on Contraceptives

Understanding how individuals come to know about contraception and decide on which method to adopt is crucial. Reviewed studies consistently highlight that media is a vital source of information on contraception. Various forms of media, including television, radio, newspapers, magazines, and social media, are frequently mentioned as significant sources (Adeyemi et al., 2016; Bankole & Onasote, 2016). According to Bankole and Onasote (2016), social media is the most preferred source of contraception information, especially among younger respondents. Adeyemi et al. (2016) discovered that radio advertisements on contraception are only effective when the jingles are repeated over a long period, reinforcing the importance of sustained messaging. Health workers are also highlighted as key sources of contraception information. They are mentioned as the most preferred and trusted source, indicating a strong preference for hospital-based information on contraception (Abdulrazaq et al., 2014; Adeyemi et al., 2016; Alayande et al., 2016; Bankole & Onasote, 2016). This preference likely stems from the perception that health workers are more knowledgeable and are considered experts on health matters, including contraception.

However, it is notable that no study has specifically and repeatedly examined a particular group of women to determine whether their most preferred source of contraception information has evolved over time and how this evolution impacts contraceptive uptake. Other sources of contraception information highlighted in the reviewed studies include secondary and tertiary educational institutions, parents, patent medicine sellers, peers, and family members. Each of these sources plays a role in shaping individuals' knowledge and perceptions of contraception, contributing to the overall landscape of information dissemination.

### 2.4.3 Factors Associated with Uptake of Contraceptives

The uptake of contraceptives is closely tied to individuals' knowledge and perceptions of various contraceptive methods. Studies have explored these aspects and highlighted several factors that influence the use of modern contraceptives. Ajayi et al. (2018) found that the poor uptake of modern contraceptives is largely due to fears of side effects. Respondents in the study associated modern contraceptives with numerous side effects,

including altered menstrual cycles, bodily weakness, diminished sexual appetite, weight gain, and headaches. These fears resulted in unsustainable use of modern contraceptives and a relapse to traditional contraceptive methods. Anate et al. (2020) examined the knowledge of contraceptives among over 300 women in southwestern Nigeria. The study revealed that male condoms, implants, injectables, and pills were commonly known contraceptive methods. The women in the study also deliberately monitored their fertility to decide when to use or avoid contraception. Similar findings were reported by Obasale and Joseph (2017).

Sociodemographic factors such as place of residence, age, educational level, and marital status significantly influence contraceptive use. Rural areas often face inequities in the distribution and access to modern contraceptives (Dasgupta et al., 2016). This disparity is partly due to the economic constraints faced by rural residents, who may lack the financial resources to purchase contraceptives and access media sources of contraceptive information. Consequently, they rely heavily on health education from healthcare workers. Ajayi et al. (2018) introduced the idea that urban centers are privileged in the allocation of family planning resources, suggesting that contraceptive distribution is skewed to favor urban over rural areas. This highlights the need for equitable distribution of contraceptives to improve uptake in rural areas.

Improving education and economic opportunities for women is closely linked to increased contraceptive uptake (Fagbamigbe et al., 2018). Enhanced formal education for women can increase their knowledge and acceptance of modern contraceptives. With better economic opportunities, women also have improved purchasing power. Studies have shown that women with secondary or tertiary education are more likely to use modern contraceptives than those with only primary or no formal education (Abdulrazaq et al., 2014; Bankole & Onasote, 2016).

Certain factors are rarely discussed in the literature but are critical to understanding contraceptive use. These include proximity to healthcare facilities and the economic status of individuals, which can determine the specific type of contraceptive adopted and its availability (Abdulrazaq et al., 2014). For instance, implants were used only by those who could afford them, while male condoms were more commonly used because they were more readily available than female condoms. Cultural acceptability also plays

a significant role. Sterilization is often overlooked due to cultural beliefs and associated surgical complications (Abdulrazaq et al., 2014; Asaolu et al., 2017).

Generally, women were found to use contraceptives more than men. In many cases, men were unsupportive of their female partners using contraceptives, leading to advocacy for male inclusion in family planning, especially in northern Nigeria (Adeyemi et al., 2016; Asaolu et al., 2017). Women who are technologically savvy and possess smartphones appear to be more exposed to contraception information. Asaolu et al. (2017) found higher adoption of contraception among such women. Other studies have shown that sociodemographic characteristics like age and marital status influence contraception uptake (Alagbu et al., 2021; Dinwoke et al., 2015; Ekholuenetale et al., 2021). This study aims to provide deeper insights into these various sociodemographic attributes and their influence on contraception uptake, drawing lessons from educational interventions conducted in health facilities.

## 2.5 WHO/National Strategies to Bridge the Unmet Need and Improve Contraceptive Uptake

The unmet need for contraceptives remains a significant challenge in many parts of the world, including Nigeria. Addressing this issue requires a multifaceted approach involving comprehensive strategies from both the World Health Organization (WHO) and national governments. This section explores these strategies and their potential impact on improving contraceptive uptake.

### 2.5.1 WHO Strategies

The World Health Organization (WHO) has outlined several key strategies to bridge the unmet needs and improve the uptake of contraceptives.

One of the main approaches is the implementation of comprehensive sexual education programs. These programs are designed to be age-appropriate and culturally sensitive, and they aim to increase awareness and knowledge about contraceptive methods. By providing accurate information, these programs empower individuals to make informed choices about their reproductive health (World Health Organization, 2023).

Improving access to contraceptives is another crucial strategy. Ensuring that a wide range of contraceptive methods is available in healthcare facilities is essential. The

WHO recommends reducing financial barriers by subsidizing contraceptives or providing them for free, thereby making them more accessible to all individuals.

Strengthening healthcare systems is also vital. This includes training healthcare providers to offer non-judgmental and confidential contraceptive counseling. Integrating family planning services into primary healthcare makes these services more accessible and user-friendly for women who need them.

Community engagement and outreach play a significant role in promoting contraceptive use. Engaging community leaders and influencers to advocate for the benefits of contraceptives can help shift societal attitudes. Outreach programs in rural and underserved areas are essential for educating women about their contraceptive options and addressing any misconceptions they might have.

The use of technology and media is an innovative strategy to enhance contraceptive uptake. Mobile health (mHealth) solutions can provide information and reminders about contraceptive use. Additionally, leveraging social media and other digital platforms can help disseminate accurate information about contraceptives, reaching a wider audience and improving overall awareness.

### 2.5.2 National Strategies

National strategies to bridge the unmet need for contraceptives and improve their uptake are vital in achieving comprehensive reproductive health. One of the fundamental approaches is policy and advocacy. National governments play a crucial role in advocating for policies that support reproductive health rights and access to contraceptives. By monitoring and evaluating the implementation of family planning programs, governments can ensure that these programs effectively meet the needs of the population, as highlighted by the Federal Ministry of Health, Nigeria (2023).

Public-private partnerships are another essential strategy. Collaborating with private sector entities can enhance the distribution and availability of contraceptives. These partnerships can also provide the necessary funding and resources to implement large-scale health education campaigns, thereby increasing awareness and accessibility.

Capacity building is critical for the effective delivery of contraceptive services. Investing in the training of healthcare workers ensures that they can provide quality contraceptive services. Continuous professional development programs keep healthcare

providers updated with the latest contraceptive methods and counseling techniques, which is crucial for maintaining high standards of care.

Research and data collection form the backbone of informed policy-making. Conducting research to understand the barriers to contraceptive uptake and evaluating the effectiveness of different interventions can guide policy decisions. Data collection on contraceptive use and unmet needs helps tailor programs to specific community needs, ensuring that interventions are relevant and effective.

Bridging the unmet need for contraceptives and improving their uptake requires a coordinated effort between international organizations like the WHO and national governments. By implementing comprehensive sexual education, improving access to contraceptives, strengthening healthcare systems, engaging communities, leveraging technology, and advocating for supportive policies, significant progress can be made. These strategies empower women to make informed reproductive choices and contribute to broader public health goals.

### 2.6 Targeted Education and Uptake of Contraceptives

Targeted education has been recognized as a crucial strategy in enhancing the uptake of healthcare services, including contraceptives. By providing tailored information and addressing specific barriers faced by different populations, targeted education can significantly influence healthcare behaviors and outcomes. Targeted education refers to educational interventions designed to meet the unique needs and circumstances of specific populations. These interventions are typically informed by an understanding of the cultural, social, and economic contexts in which individuals live, ensuring that the information provided is relevant and accessible. In the context of healthcare, targeted education can play a pivotal role in improving knowledge, changing attitudes, and encouraging the adoption of healthy behaviors.

One of the primary successes of targeted education in the realm of contraceptive uptake is its ability to empower individuals, particularly women, to take control of their reproductive health. Educational interventions that are culturally sensitive and community-focused can significantly increase contraceptive use among women. These programs empower women by providing them with the knowledge and resources they need to make informed decisions about their reproductive health. Comprehensive sexual education programs in schools and communities have also proven effective in

increasing awareness and knowledge about contraceptive methods. The World Health Organization (2023) reports that these programs lead to more informed choices and higher uptake rates among women of reproductive age. By offering accurate information about the benefits and availability of different contraceptive methods, targeted education programs help dispel myths and misconceptions, enabling individuals to make better-informed decisions.

Targeted education does not only influence the uptake of contraceptives but also impacts broader healthcare behaviors. For example, by integrating information about reproductive health into general health education programs, individuals are more likely to seek healthcare services and adopt preventive measures. This holistic approach ensures that individuals view contraceptive use as part of their overall health and well-being, rather than an isolated choice.

Moreover, targeted education can address specific barriers that prevent individuals from accessing healthcare services. These barriers can include cultural and religious beliefs, economic constraints, and logistical challenges. Bradley and Casterline (2014) emphasize that by addressing these barriers through tailored educational messages, healthcare providers can encourage more individuals to seek out and utilize healthcare services, including contraceptives.

Despite its successes, targeted education faces several challenges that can hinder its effectiveness. One significant issue is the lack of consistency in program implementation. Aung, Mitchell, and Braun (2020) highlight that variations in program delivery and fidelity can impact the outcomes of educational interventions. Ensuring that programs are consistently and accurately delivered is essential for achieving the desired impact. Cultural and religious barriers also pose significant challenges. In some communities, cultural norms and religious beliefs create a stigma around contraceptive use, deterring individuals from seeking these services. Bradley and Casterline (2014) note that overcoming these deeply ingrained beliefs requires sustained and sensitive educational efforts, often involving community leaders and influencers. Healthcare system limitations can further impede the success of targeted education. The Health Economics Review (2022) discusses how inadequate training of healthcare providers and lack of resources in healthcare facilities can result in poor service delivery. When healthcare providers are not adequately trained or facilities are not equipped to offer

quality services, individuals may not receive the necessary support and guidance to make informed healthcare decisions.

To enhance the effectiveness of targeted education, it is essential to adopt comprehensive and multi-faceted strategies. Strengthening healthcare systems by investing in the training of healthcare providers and ensuring that facilities are adequately equipped is crucial. Continuous professional development programs can keep healthcare providers updated with the latest contraceptive methods and counseling techniques (Federal Ministry of Health, Nigeria, 2023). Engaging community leaders and influencers to advocate for the benefits of contraceptive use can also help change societal attitudes. Outreach programs in rural and underserved areas are particularly important for educating individuals about their healthcare options and addressing misconceptions. By leveraging the influence of respected community figures, these programs can build trust and encourage more individuals to seek healthcare services. Utilizing technology and media can further enhance the reach and impact of targeted education programs. Mobile health (mHealth) solutions can provide information and reminders about healthcare services, while social media and other digital platforms can disseminate accurate information to a broader audience. These innovative approaches can help overcome geographic and logistical barriers, making healthcare information more accessible (World Health Organization, 2023).

Targeted education is a powerful tool for enhancing the uptake of healthcare services, including contraceptives. By providing tailored information and addressing specific barriers, targeted education can significantly influence healthcare behaviors and outcomes. While challenges remain, comprehensive strategies that strengthen healthcare systems, engage communities, and leverage technology can enhance the effectiveness of targeted education. Ultimately, these efforts can empower individuals to make informed decisions about their health, contributing to improved public health outcomes.

### 2.7 Summary of Literature Review

The uptake of contraceptives among women of reproductive age in Nigeria remains suboptimal, with significant variations across different regions and communities. This discrepancy highlights the need for targeted health education interventions to enhance contraceptive use and improve reproductive health outcomes. Studies have shown that

targeted health education significantly increases awareness and uptake of contraceptives. For instance, Afolabi and Adebayo (2020) found that women who received targeted health education exhibited a higher increase in contraceptive use compared to those who did not. The uptake of contraceptives is influenced by multiple factors, including socio-economic status, educational level, cultural beliefs, and access to healthcare services. Moreover, the knowledge and perceptions of women regarding contraceptives play a crucial role in their decision-making process. Misconceptions and lack of accurate information about contraceptives can hinder their uptake, as evidenced by Adeyemi and Adekanbi (2019). The sources of contraceptive information and perceived access to these services are also vital, with women often relying on healthcare providers, community health workers, and media. However, the accessibility and reliability of these sources can vary, affecting overall contraceptive use (Okeke & Anyaehie, 2018). This literature review explores the current level of contraceptive uptake, identifies the associated factors among women aged 18-49 at Nnamdi Azikiwe University Teaching Hospital (NAUTH), Nnewi, examines their knowledge and perceptions about contraceptives, and assesses the impact of targeted health education on contraceptive uptake.

### 2.8 Gaps Identified in Literature Review

Targeted education has emerged as a pivotal strategy in enhancing the uptake of healthcare services, including contraceptives. By tailoring educational interventions to the specific needs and contexts of different populations, targeted education significantly influences healthcare behaviors and outcomes. Despite the documented successes of these interventions, there remain several gaps in the literature that need to be addressed to optimize the effectiveness of targeted education.

#### Inconsistencies in Program Implementation

One of the key gaps identified in the literature is the inconsistency in the implementation of targeted health education programs. According to Aung, Mitchell, and Braun (2020), variations in program delivery methods and adherence to protocols can significantly affect outcomes. These inconsistencies make it challenging to draw definitive conclusions about the effectiveness of targeted education interventions, underscoring the need for standardized implementation practices.

**Limited Focus on Long-term Outcomes**

Another significant gap is the limited focus on the long-term sustainability of targeted health education interventions. Many studies tend to concentrate on the immediate or short-term impacts of these programs on contraceptive uptake, neglecting to explore their long-term effects. Bradley and Casterline (2014) highlight the need for longitudinal studies to track the enduring impacts of targeted health education on contraceptive use and related health outcomes, providing a more comprehensive understanding of their effectiveness over time.

**Cultural and Contextual Variability**

The existing literature often overlooks the considerable cultural and contextual variability across different populations. While some studies acknowledge the importance of culturally tailored interventions, there is a need for more in-depth exploration of how cultural, social, and economic factors influence the effectiveness of targeted health education. The Health Economics Review (2022) emphasizes the necessity of designing studies that are sensitive to the specific needs and contexts of diverse populations to enhance the relevance and impact of educational interventions.

**Insufficient Exploration of Male Involvement**

The role of men in contraceptive decision-making is another area that remains underexplored in the literature. Many targeted health education programs primarily focus on women, overlooking the significant influence that male partners and family members can have on contraceptive use. Research that includes male perspectives and evaluates the impact of engaging men in educational interventions could provide a more comprehensive understanding of the factors affecting contraceptive uptake and improve program outcomes (World Health Organization, 2023).

**Barriers to Accessing Contraceptives**

While some studies have identified barriers to accessing contraceptives, there is a need for more detailed analyses of these barriers and their interactions. Factors such as geographic accessibility, economic constraints, and healthcare system limitations are often mentioned but not thoroughly examined. Understanding the specific barriers faced by different populations can help in designing more effective and targeted interventions to address these challenges (Federal Ministry of Health, Nigeria, 2023).

### Variability in Measuring Outcomes

There is considerable variability in how studies measure the outcomes of targeted health education programs. Different studies use different metrics and methods to assess contraceptive uptake, making it difficult to compare results and draw generalizable conclusions. Bradley and Casterline (2014) argue that standardizing outcome measures could improve the comparability of studies and enhance the evidence base for targeted health education interventions.

Addressing these gaps in the literature is crucial for advancing our understanding of the impact of targeted health education on contraceptive uptake. By focusing on consistent program implementation, exploring long-term outcomes, accounting for cultural variability, including male perspectives, analyzing barriers to access, and standardizing outcome measures, future research can provide more comprehensive insights. These insights will inform the development of more effective interventions, ultimately enhancing the uptake of contraceptives and other healthcare services.

# CHAPTER THREE: MATERIALS AND METHODS

## 3.1 Research design

This interventional study was conducted at NAUTH, Nnewi City, Nigeria, to highlight the impact of focused health education on the uptake of contraceptives by women in the reproductive age range of 18 to 49. To do this, the study used a randomized controlled trial (RCT) methodology. RCTs are rigorous tools for assessing cause-effect links between the intervention and outcome because they allow us to quantify the effectiveness of new interventions prospectively while adjusting for confounders.

## 3.2 Variables

Variables are properties, features, or occurrences that can take on different values. Studies of this kind aim to comprehend the relationships between these variables. Some variables affect others, while others are intermediaries that influence the flow of effects.

### 3.2.1 Independent Variables

Independent variables, also known as predictor variables, are those that influence other variables. In this study, the independent variables include:

Socio-demographic factors: age, occupation, level of education, living arrangement, income level, and religion.

Sociocultural factors: partner support/approval, social stigma.

Access to reproductive health commodities: cost of family planning (FP), distance to the nearest outlet, availability of preferred FP methods at the outlet.

### 3.2.2 Dependent Variables

Dependent variables, or response variables, are those that are influenced by the independent variables. In this study, the dependent variable is the uptake of contraceptives, which can change for better or worse based on the influence of the independent variables.

### 3.2.3 Intervening Variables:

Intervening variables are occurrences that either the researcher introduced or observed during the study. In this research, the intervening variable is the oral educational intervention aimed at increasing knowledge about contraceptives among the targeted

respondents. The researcher monitored whether this intervention changed the behaviors of the respondents toward contraceptive uptake. Additionally, the researcher observed if these behaviors differed across respondents with varying socio-demographic features. The overall attitude of health workers was also considered as an intervening variable, as it could affect the reception of the educational intervention.

### 3.3 Location of the study

The study was conducted at the Nnamdi Azikiwe University Teaching Hospital (NAUTH) in Nnewi, Anambra State, Nigeria (Appendix III). NAUTH stands out as the only tertiary health facility in Nnewi and offers an extensive range of primary healthcare services, which include reproductive, maternal, and child health. This makes it an ideal research setting focused on improving health outcomes through targeted interventions.

Nnewi, the second largest commercial town in Anambra State, encompasses two local government councils: Nnewi-North and Nnewi-South. The city is situated east of the Niger River, approximately 22 kilometers southeast of the Onitsha local government area. Covering an area of over 200 square miles, Nnewi serves as a significant urban center within the state.

A study by Dinwoke et al. (2015) highlighted a notable issue at NAUTH: the contraceptive uptake rate among immediate postpartum women was only 15.4%, a statistic attributed to inadequate health education. This low uptake rate underscored the need for improved educational interventions, prompting the initiation of the current study at NAUTH. By choosing NAUTH, the study leveraged a strategic location that ensured access to a diverse and representative sample of women of reproductive age. This choice enhanced the relevance and applicability of the research findings to similar urban and semi-urban contexts in Nigeria.

### 3.4 Study Population

The study population for this research comprised women of reproductive age (18-49 years) who were actively utilizing the reproductive health services at NAUTH, Nnewi, Anambra State, Nigeria. Given the large number of women within this age group in Nnewi, approximately 105,540 (National Population Commission, 2010), it was necessary to narrow down the sample frame to ensure the study was both practical and

representative. To achieve this, the study specifically targeted women aged 18-49 who had attended NAUTH for reproductive health services within the past year. This approach not only made the sample frame more manageable but also ensured that the participants had recent and relevant experiences with the healthcare services being evaluated. By focusing on this subset of the larger population, the study aimed to more accurately assess the impact of targeted health education on contraceptive uptake among women who were currently engaged with the healthcare system.

### 3.5 Inclusion and exclusion criteria for the study

#### 3.5.1 Inclusion Criteria

The focus of this study was on women of reproductive age who accessed healthcare at NAUTH Nnewi between February 2021 to August 2022, and voluntarily consented to participate in the research. Therefore, all women (18-49 years), resident in Nnewi, accessing health services at NAUTH Nnewi city who were able to understand and effectively communicate to ensure accurate and comprehensive responses during the data collection process were qualified to be included in the study.

#### 3.5.2 Exclusion Criteria

Critically unwell and mentally unstable reproductive aged women were not qualified for inclusion in the study, even if they utilize health services in NAUTH. Finally, those who declined participation in the study were excluded with no consequences for non-participation.

### 3.6 Sampling Technique and Sample Size

#### 3.6.1 Sampling Technique

The probability random sampling method was employed to generate data representative of the entire population while controlling for bias during the sampling process. This method was chosen for its ability to provide each participant an equal chance of being selected, ensuring the reliability and validity of the study's findings.

**Steps for Sampling:**

Listing Participants: A comprehensive list of all adult women of reproductive age (18-49 years) who had attended clinical health-related services at two key departments in NAUTH, Nnewi—namely, the Community Medicine and Primary Healthcare Department and the Comprehensive Healthcare Department—during the study period

was compiled. This list served as the sampling frame, encompassing the entire population of eligible participants.

Assigning Numerical Identities: Each name on the list was assigned a unique numerical identity, following the chronological order in which they appeared. For example, the first name on the list was assigned the number "1," the second name "2," and so on. This step ensured that every woman on the list could be randomly selected using a probabilistic method.

Creating Random Selection Pool: The numerical identities were written on small, identical pieces of paper. Each piece of paper, representing a unique numerical identity, was then folded to ensure the selection process remained unbiased. These folded pieces of paper were placed into a box to create a random selection pool.

Simple Random Sampling Process: The researcher employed a simple random sampling technique using balloting and hand-drawing methods. Each piece of paper was randomly picked from the box, one at a time. The selected number corresponded to a specific name on the list. The researcher then traced this number back to the corresponding name and contact information of the participant. The selected individual was invited to participate in the study.

Handling Declines and Exclusions: In cases where a selected participant declined to participate or met any exclusion criteria, the same random selection process was repeated.

The researcher continued to draw numbers from the box until the required sample size of 275 participants was achieved. This iterative process ensured that the final sample was representative, and that selection bias was minimized. By following these meticulous steps, the researcher ensured that every eligible woman in the study population had an equal opportunity to be included in the sample. This approach not only controlled for bias but also enhanced the validity and reliability of the study's findings.

### 3.6.2 Sample Size

The aim of determining the sample size was to secure a representative of the study population, especially since the study was based on a Randomized controlled trials research design. The sample was derived from the 105,540 women that were of reproductive age in Nnewi. To determine this study's sample size, the researcher

adopted the Randomized controlled trials formula proposed by Chan (2003) for sample size derivation.

$$m = \frac{c \times \pi_1(1-\pi_1) + \pi_2(1-\pi_2)}{(\pi_1 - \pi_2)^2}$$

where c =10.5 for 90% power,

$\pi_1$ and $\pi_2$ are the proportion estimates = 0.3 and 0.5 respectively.

$$m = \frac{10.5 \times 0.3(1-0.3) + 0.5(1-0.5)}{(0.3 - 0.5)^2}$$

m=125 subjects in each group

Hence 125 x 2=250 subjects plus attrition rate of 10% = 275 subjects.

Given the potential for variability in participant responses to the intervention, the sample size may need adjustment after initial data collection. If initial results indicate significant variability or unexpected dropout rates, a supplementary sampling process may be employed to ensure the final sample size remains representative. This process involved re-evaluating the sample size calculation using the observed standard deviation and effect size from preliminary data, ensuring the study retains its statistical power and validity. Additional participants may be recruited as necessary to achieve the desired sample size and maintain the integrity of the study's findings.

### 3.7 Randomization and Target Intervention

#### 3.7.1 Randomization

A rigorous randomization process was implemented to ensure each eligible participant had an equal chance of being allocated to either the control or intervention group. The following steps detail the randomization method used:

Preparation of Participant List: A research assistant compiled a list of the 275 sampled participants. This list was numbered sequentially, ensuring each participant had a unique numerical identifier.

Creation of Allocation Pieces: To facilitate random allocation, a total of 280 pieces of paper were prepared. These pieces were placed in opaque envelopes, with 140 envelopes labeled "Intervention Group" and the remaining 140 labeled "Control

Group." This slight excess allowed for a seamless randomization process in case of errors or misplacement.

Random Selection Process: The pieces of paper in the opaque envelopes were placed into a box. Using a hand-drawing method, each participant's group assignment was determined. A piece of paper was randomly picked from the box by hand drawing. The outcome of this draw (either "Intervention" or "Control") was immediately recorded next to the first name on the participant list. The process was repeated for the second participant, and so on, until all participants were allocated to a group.

Development of Allocation List: This method ensured that each participant was assigned to either the control or intervention group in a randomized manner. An allocation list was developed, containing the names of participants and their corresponding group assignments. This ensured the maintenance of balance between the control and intervention groups, minimizing differences between them. By the end of the randomization process, 140 participants were assigned to the intervention group, and 135 participants were assigned to the control group.

Maintaining Study Integrity: To maintain the integrity of the study, participants were instructed not to discuss the details of their intervention with other study participants. This helped prevent any potential contamination of the control group by information from the intervention group. This randomization process ensured a fair and unbiased distribution of participants between the intervention and control groups, supporting the validity and reliability of the study outcomes.

### 3.7.2 Target Intervention

The study was designed to be interventive, with an educational component aimed at increasing the uptake of contraceptives among women of reproductive age. Drawing from his experience as a medical practitioner, the researcher crafted a comprehensive educational intervention on contraception.

**Intervention Group:** Participants in the intervention group received a 60-minute education session on contraceptive basal knowledge and method demonstrations. These sessions were held three times per week over three consecutive weeks. The educational intervention was conducted alongside a health worker from the facility and focused on different types of modern contraception, advantages, and disadvantages of each

method, including potential side effects, effectiveness of various contraceptives in preventing sexually transmitted diseases (STDs), detailed instructions on the proper use of each contraceptive method. To facilitate engagement and address individual concerns, the sessions included discussions on perceived barriers to contraceptive use faced by the participants. A dedicated question-and-answer segment allowed participants to voice their concerns and receive personalized responses. These sessions were conducted in a large conference room at the hospital, providing a conducive environment for learning and interaction.

**Control Group:** The control group did not participate in the educational intervention during the study period. Instead, they engaged in the routine health counseling programs organized once a week by the hospital. These sessions aimed to enlighten women on various health-specific issues, including family planning, gynecological health, and mental health (covering topics such as depression and anxiety). Importantly, at the conclusion of the study, participants in the control group also received the targeted educational intervention on contraceptives, ensuring that all participants ultimately benefited from the intervention.

### 3.8 Construction of Research Instruments and Data Collection Instruments

The primary research instrument for quantitative data collection was a structured interviewer-administered questionnaire (Appendix I). This questionnaire was meticulously designed to capture comprehensive data relevant to the study's objectives. The construction process involved several critical steps to ensure the instrument was both reliable and valid.

#### Questionnaire Development

**Literature Review:** The questionnaire was developed following a thorough review of relevant literature related to the current study, including works by Anate et al. (2020), Solanke BL. (2017), Babatunde OS. (2017), and Abdulrazaq et al. (2014). These sources provided valuable insights into the types of questions needed to effectively capture the study's variables.

**Questionnaire Structure:** The questionnaire was organized into two main parts: pre-intervention and post-intervention. This structure allowed for the comparison of

participants' knowledge, perceptions, and behaviors before and after the targeted health education intervention.

**Content of Questions:**

Sociodemographic Details: Questions captured participants' age, occupation, level of education, living arrangement, income level, and religion.

Perceptions and Uptake of Contraceptives: Questions assessed participants' knowledge and perceptions of various contraceptive methods, their scale of contraceptive uptake, and the influence of previous health education.

Question Types: The questionnaire included a mix of closed-ended questions (e.g., multiple-choice, yes/no), open-ended questions for more detailed responses, and matrix-styled (Likert scale) questions to measure degrees of agreement or disagreement with specific statements.

### 3.9 Pretesting and Validation

#### 3.9.1 Pretesting

A pretested structured interviewer-administered questionnaire was used to collect quantitative data. The pre-test involved 28 women of reproductive age (representing 10% of the sample size) who accessed health services at Holy Rosary Specialist Hospital and Maternity, Onitsha. The pre-test aimed to identify and correct any issues with the wording, clarity, or relevance of the questions.

#### 3.9.2 Validity

To ensure validity, the data collection tools were pretested, and the results were used to refine and modify the tools. Senior research scientists, the Head of the Family Planning Wellbeing Department, and supervisors reviewed the questionnaires for content validity.

#### 3.9.2 Reliability

The reliability of the questionnaire was ensured through a series of meticulous steps, including pre-testing the instrument with a sample group to identify and rectify any issues. The test-retest analysis, which yielded a high Cohen’s kappa coefficient ($k = 0.894$), confirmed the consistency of responses over time. Additionally, the questionnaire was reviewed by three experts in relevant fields, and their feedback was

incorporated to refine the content further. Comprehensive training of data collectors ensured standardized data collection procedures and random allocation methods were used to maintain balance and reduce bias, all contributing to the instrument's reliability.

### 3.10 Data Collection Technique

For this study, data collection involved a structured and systematic approach using both quantitative and qualitative methods to ensure comprehensive and relevant data was gathered.

Quantitative data collection was primarily facilitated through a structured interviewer-administered questionnaire. This questionnaire was carefully organized into two main parts: pre-intervention and post-intervention. The pre-intervention section aimed to collect baseline data on participants' sociodemographic details, perceptions, knowledge of contraceptives, and current use of contraceptives. The post-intervention section, on the other hand, evaluated any changes in knowledge, perceptions, and behaviors following the health education intervention. The questionnaire featured a variety of question types, including closed-ended questions (such as multiple-choice and yes/no), open-ended questions for detailed responses, and matrix-styled (Likert scale) questions to measure attitudes and perceptions.

Participants were assessed at baseline and then again two weeks after completing the targeted educational intervention. The two-week interval was chosen to allow participants sufficient time to absorb the information provided during the oral educational intervention and make informed decisions regarding contraceptive use. Data was collected over a three-month period, from July to September 2022.

To ensure comprehension and mitigate any literacy barriers, trained interviewers conducted face-to-face interviews with the participants. This standardized approach helped to maintain consistency and reliability in the data collection process. The interviewers, including clinical nurses and physicians, received comprehensive training on data collection methods, establishing rapport, and maintaining good interpersonal relationships with participants. This training was crucial for discussing sensitive reproductive health issues effectively and ensuring data collection was conducted professionally and without bias.

Participants were randomly assigned to either the control or intervention group using a random allocation method. This involved placing pieces of paper labeled with group names in opaque envelopes and drawing them randomly to ensure an unbiased distribution of participants. Overall, the data collection technique combined structured quantitative methods with qualitative insights to provide a comprehensive assessment of the impact of targeted health education on contraceptive uptake, ensuring reliable and valid data was gathered to address the research objectives

### 3.11 Data Analysis

Data was analyzed using IBM Statistical Package for Social Sciences (SPSS) statistics for Windows, Version 25.0. Responses were coded and entered into the software. Before analysis, the entered data was checked for errors and made clean. Statistical tools like percentage frequency distribution, Chi-square test, Fisher's Exact test, and student t-test analysis were used to present the data, test the significance of the relationships between the dependent and independent variables, and to compare mean values of some variables respectively. Logistic regression was performed to determine the factors that predicted the uptake of contraceptives. The results were presented in tables and charts. The level of awareness and knowledge were determined from participant's response on a Likert scale (5-point rating scale) adopted in the study. The rating scale ranged from zero point (none) to 5 points (very high). This was used to categorize the study population into three levels – low, moderate and high. Participants who had 2 points and below were considered 'low'; those who had 3 points were considered 'moderate', while those who had 4 points and above were considered 'high'. The level of significance was set at p-values equal to or lower than 0.05 with 95% confidence interval.

### 3.12 Ethical considerations

Authority to carry out the study was obtained from Kenyatta University Graduate School, Reference number: Q97F/26161/19 (Appendix IV). Ethical approval was obtained from Nnamdi Azikiwe University Teaching Hospital Research Ethics Committee (NAUTHHREC), Reference number: NAUTH/CS/66/VOL.15/VER.3/102/2022/041 (Appendix V). Participants, including research assistants, were fully informed about the research, and written consent was obtained (Appendix II). Confidentiality and anonymity were maintained, and

participants were informed of their right to withdraw at any time. The study aimed to minimize harm, and participants were debriefed at the end. These measures ensured the ethical integrity of the research and the well-being of all participants.

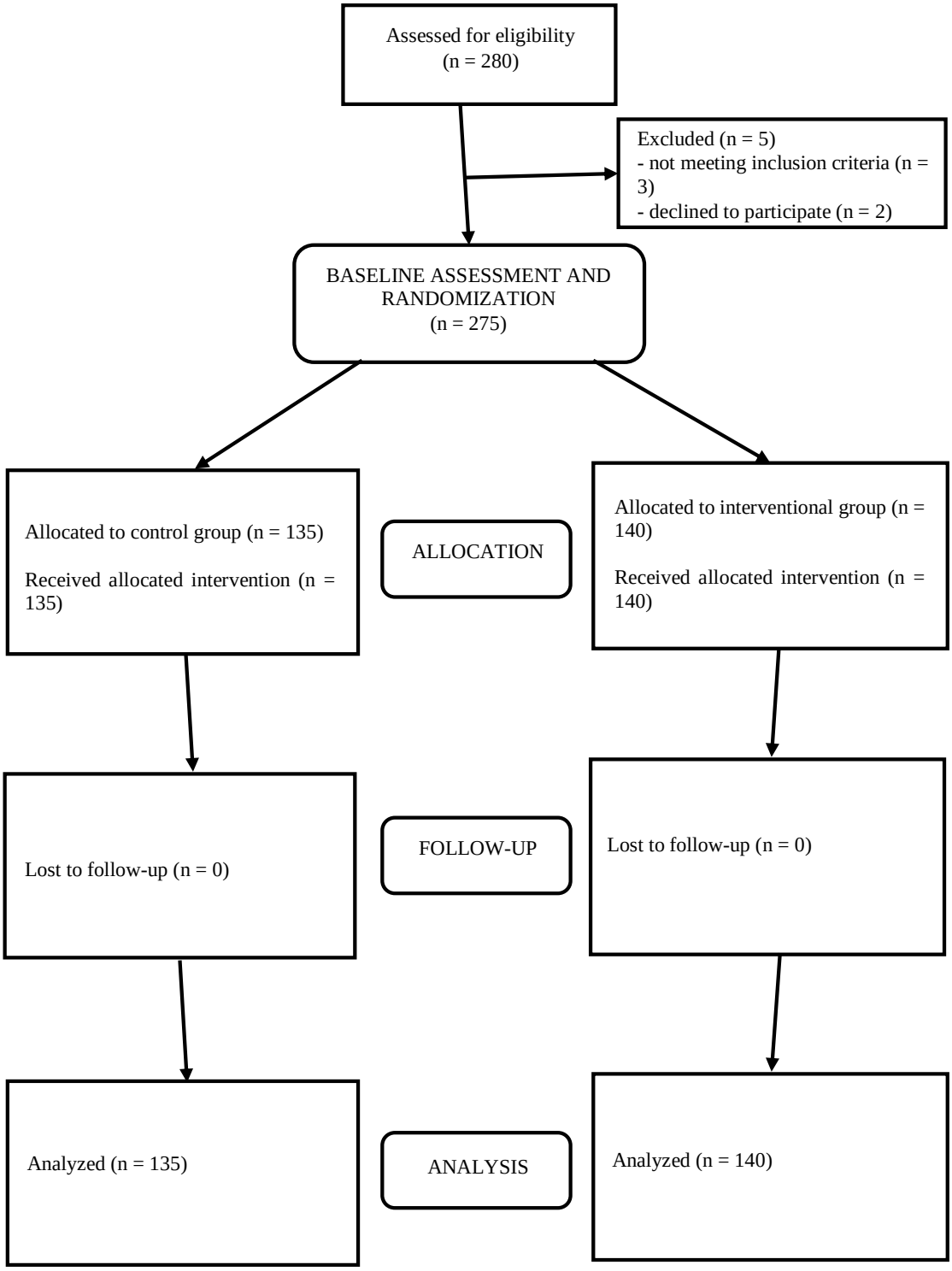


**Figure 3.1: Flow diagram of participants throughout the research.**

# CHAPTER FOUR: RESULTS

## 4.1 Introduction

This section presents the findings of the study, which aimed to evaluate the effect of targeted health education on the uptake of contraceptives among women of reproductive age (18-49 years) in NAUTH, Nnewi, Anambra State, Nigeria. The results are organized to address the study's main objective and specific objectives, detailing the level of contraceptive uptake, factors associated with uptake, sources of contraceptive information, and the perceived impact of targeted health education. Statistical analyses were performed to determine the significance of the observed changes, providing insights into the effectiveness of the intervention and its implications for reproductive health services.

## 4.2 Response Rate

Table 4.1 shows the response rates for both the intervention and control groups during the pre-intervention and post-intervention phases. Each group consisted of 140 participants in the intervention group and 135 in the control group, making a total of 275 participants. The table demonstrates that the response rate remained consistent across both waves, ensuring that the data collected was robust and representative of the entire sample.

**Table 4.1: Response Rate**

| Wave | Intervention Group | Control Group | Total |
|---|---|---|---|
| Pre-intervention | 140 | 135 | 275 |
| Post-intervention | 140 | 135 | 275 |

## 4.3 Sociodemographic Factors

### 4.3.1 Pre-intervention sociodemographic Factors

Table 4.2 presents the pre-intervention sociodemographic factors of the participants in both the intervention and control groups. The data shows that the distribution of age, education level, occupation, marital status, religious faith, and monthly income is quite similar between the two groups. This indicates that the randomization process was effective in creating comparable groups.

The majority of participants in both groups were between 18-40 years old. The mean age was roughly similar between groups, with the intervention group having a mean age of 31.34 ± 7.22 years and the control group 30.85 ± 7.26 years. Most participants had completed SSCE or higher education, with 57.1% in the intervention group and 55.6% in the control group. Civil servants formed the largest occupational group, with 44.3% in the intervention group and 40.0% in the control group, followed by traders (23.6% and 22.2%, respectively) and unemployed individuals (14.3% and 21.5%, respectively). Most participants were married, with 73.6% in the intervention group and 70.4% in the control group. The majority were Catholics, with 54.3% in the intervention group and 56.3% in the control group. Most participants had a monthly income of less than $72, with 57.1% in the intervention group and 61.5% in the control group. The p-values for all variables indicate no significant differences between the intervention and control groups ($p > 0.05$ in all cases), further confirming the balance between them.

**Table 4.2: Pre-intervention Sociodemographic Factors**

| Variable | Group *n* (%) | | | $X^2$ | p-value |
|---|---|---|---|---|---|
| | Intervention | Control | Total | | |
| **Age (years)** | | | | | |
| 18-30 | 70 (50.0) | 70 (51.9) | 140 (50.9) | 0.095 | 0.954 |
| 31-40 | 54 (38.6) | 50 (37.0) | 104 (37.8) | | |
| >40 | 16 (11.4) | 15 (11.1) | 31 (11.3) | | |
| Mean age (years) | 31.34 ± 7.22 | 30.85 ± 7.26 | 31.10 ± 7.23 | | |
| **Level of education** | | | | | |
| FSLC | 7 (5.0) | 5 (3.7) | 12 (4.4) | 0.807 | 0.848 |
| SSCE | 80 (57.1) | 75 (55.6) | 155 (56.4) | | |
| Bachelors | 43 (30.7) | 42 (31.1) | 85 (30.9) | | |
| Postgraduate | 10 (7.1) | 13 (56.5) | 13 (9.6) | | |
| **Occupation** | | | | | |
| Unemployed | 20 (14.3) | 29 (21.5) | 49 (17.8) | 2.449 | 0.485 |
| Civil servant | 62 (44.3) | 54 (40.0) | 116 (42.2) | | |
| Trader | 33 (23.6) | 30 (22.2) | 63 (22.9) | | |
| Others | 25 (17.9) | 22 (16.3) | 47 (17.1) | | |
| **Marital status** | | | | | |
| Single | 33 (23.6) | 34 (25.2) | 67 (24.4) | 0.647 | 0.723 |
| Married | 103 (73.6) | 95 (70.4) | 198 (72.0) | | |
| Divorced/Widowed | 4 (2.9) | 6 (4.4) | 10 (3.6) | | |
| **Religious faith** | | | | | |
| Pentecostal | 31 (22.1) | 27 (20.0) | 58 (21.1) | 0.200 | 0.905 |
| Catholic | 76 (54.3) | 76 (56.3) | 152 (55.3) | | |
| Others | 33 (23.6) | 32 (23.7) | 65 (23.6) | | |
| **Monthly income ($)** | | | | | |
| <72 | 80 (57.1) | 83 (61.5) | 163 (59.3) | 0.996 | 0.802 |
| 72-240 | 13 (9.3) | 9 (40.9) | 22 (8.0) | | |
| 241-480 | 38 (27.1) | 36 (26.7) | 74 (26.9) | | |
| >480 | 9 (6.4) | 7 (5.2) | 16 (5.8) | | |

### 4.3.2 Post-intervention Socio-demographic Factors

Table 4.3 presents the post-intervention socio-demographic factors of the participants in both the intervention and control groups, reflecting that there were no significant changes in the demographic distribution between the groups after the intervention. The majority of participants remained between 18-40 years old, with the mean age remaining similar between the intervention group (31.34 ± 7.22 years) and the control group (30.85 ± 7.26 years). The distribution of educational levels continued to show most participants having completed SSCE or higher education. Civil servants continued to be the largest occupational group, with 44.3% in the intervention group and 40.0% in the control group, followed by traders (23.6% and 22.2%, respectively) and unemployed individuals (14.3% and 21.5%, respectively).

The marital status distribution remained largely unchanged, with the majority of participants being married (73.6% in the intervention group and 70.4% in the control group). Catholics remained the majority religious group, with 54.3% in the intervention group and 56.3% in the control group. The income distribution also remained stable, with most participants having a monthly income of less than $72 (57.1% in the intervention group and 61.5% in the control group). The p-values for all variables again indicate no significant differences between the intervention and control groups, maintaining the demographic balance observed at baseline. This consistency ensures that any observed changes in outcomes can be attributed to the intervention rather than demographic differences.

**Table 4.3: Post-intervention Sociodemographic Factors**

| Variable | Group *n* (%) | | | $X^2$ | p-value |
|---|---|---|---|---|---|
| | Intervention | Control | Total | | |
| **Age (years)** | | | | | |
| 18-30 | 70 (50.0) | 70 (51.9) | 140 (50.9) | 0.095 | 0.954 |
| 31-40 | 54 (38.6) | 50 (37.0) | 104 (37.8) | | |
| >40 | 16 (11.4) | 15 (11.1) | 31 (11.3) | | |
| Mean age (years) | 31.34 ± 7.22 | 30.85 ± 7.26 | 31.10 ± 7.23 | | |
| **Level of education** | | | | | |
| FSLC | 7 (5.0) | 5 (3.7) | 12 (4.4) | 0.807 | 0.848 |
| SSCE | 80 (57.1) | 75 (55.6) | 155 (56.4) | | |
| Bachelors | 43 (30.7) | 42 (31.1) | 85 (30.9) | | |
| Postgraduate | 10 (7.1) | 13 (56.5) | 13 (9.6) | | |
| **Occupation** | | | | | |
| Unemployed | 20 (14.3) | 29 (21.5) | 49 (17.8) | 2.449 | 0.485 |
| Civil servant | 62 (44.3) | 54 (40.0) | 116 (42.2) | | |
| Trader | 33 (23.6) | 30 (22.2) | 63 (22.9) | | |
| Others | 25 (17.9) | 22 (16.3) | 47 (17.1) | | |
| **Marital status** | | | | | |
| Single | 33 (23.6) | 34 (25.2) | 67 (24.4) | 0.647 | 0.723 |
| Married | 103 (73.6) | 95 (70.4) | 198 (72.0) | | |
| Divorced/Widowed | 4 (2.9) | 6 (4.4) | 10 (3.6) | | |
| **Religious faith** | | | | | |
| Pentecostal | 31 (22.1) | 27 (20.0) | 58 (21.1) | 0.200 | 0.905 |
| Catholic | 76 (54.3) | 76 (56.3) | 152 (55.3) | | |
| Others | 33 (23.6) | 32 (23.7) | 65 (23.6) | | |
| **Monthly income ($)** | | | | | |
| <72 | 80 (57.1) | 83 (61.5) | 163 (59.3) | 0.996 | 0.802 |
| 72-240 | 13 (9.3) | 9 (40.9) | 22 (8.0) | | |
| 241-480 | 38 (27.1) | 36 (26.7) | 74 (26.9) | | |
| >480 | 9 (6.4) | 7 (5.2) | 16 (5.8) | | |

## 4.4 Uptake of Modern Contraceptives

### 4.4.1 Level of Uptake of Modern Contraceptives

Table 4.4 illustrates the level of contraceptive uptake among the intervention and control groups before and after the targeted educational intervention. In the pre-intervention phase, the uptake of contraceptives was similar between the two groups, with 41.1% of participants in the intervention group and 41.5% in the control group using contraceptives. The statistical analysis ($X^2 = 0.000$, p-value = 0.993) indicates no significant difference between the groups at baseline, confirming that they were comparable before the intervention. After the intervention, a significant increase in contraceptive uptake was observed in the intervention group, with 87.1% of participants using contraceptives, compared to 49.6% in the control group. The statistical analysis ($X^2 = 44.999$, p-value < 0.001) shows a highly significant difference between the groups after the intervention, demonstrating the effectiveness of the targeted educational program in increasing contraceptive uptake among the intervention group. The sharp increase in the intervention group suggests that the targeted health education intervention had a substantial impact on improving contraceptive use, while the control group's uptake remained relatively stable.

**Table 4.4: Level of Uptake of Contraceptives**

| **Wave/Group** | **Use contraceptives *n* (%)** | | **$X^2$** | **p-value** |
|---|---|---|---|---|
| | **Yes** | **No** | | |
| **Pre-intervention** | | | | |
| Intervention group | 58 (41.1) | 82 (58.6) | 0.000 | 0.993 |
| Control group | 56 (41.5) | 79 (58.5) | | |
| **Post-intervention** | | | | |
| Intervention group | 122 (87.1) | 18 (12.9) | 44.999 | 0.000 |
| Control group | 67 (49.6) | 68 (50.4) | | |

### 4.4.2 Sources of Information on Contraceptives and Access Pre-intervention

Table 4.5 displays the pre-intervention sources of information on contraceptives and access to contraceptives among the intervention and control groups. The most common sources of information were friends/relatives (37.9% in the intervention group and

36.3% in the control group) and hospitals (33.6% in the intervention group and 35.6% in the control group). The p-value (0.982) indicates no significant difference between the groups in terms of their sources of information. Most participants first used contraceptives either before their first pregnancy (34.5% in the intervention group and 35.7% in the control group) or after their first pregnancy (31.0% in the intervention group and 35.7% in the control group). The p-value (0.936) shows no significant difference between the groups regarding when they first used contraceptives.

Health workers were the most influential, with 39.7% in the intervention group and 35.7% in the control group citing them as the key influence. The p-value (0.523) indicates no significant difference between the groups in terms of who influenced their decision. The most commonly used contraceptives were periodic abstinence (31.0% in the intervention group and 28.6% in the control group) and condoms (20.7% in the intervention group and 25.0% in the control group). The p-value (0.882) suggests no significant difference between the groups in their choice of contraceptives. Overall, the data indicates that the intervention and control groups were similar in terms of their sources of information, timing of first contraceptive use, influence on decision-making, and the types of contraceptives used. This comparability supports the validity of the subsequent intervention's impact analysis.

**Table 4.5: Sources of Information on Contraceptives and Access Pre-intervention**

| Variable | Group *n* (%) | | | $X^2$ | p-value |
|---|---|---|---|---|---|
| | Intervention | Control | Total | | |
| **Sources of information on contraceptives** | | | | | |
| Friends/Relatives | 53 (37.9) | 49 (36.3) | 102 (37.1) | 0.718 | 0.982 |
| Social media | 14 (10.0) | 16 (11.9) | 30 (10.9) | | |
| Radio/Television | 8 (5.7) | 8 (5.9) | 16 (5.8) | | |
| Hospital | 47 (33.6) | 48 (35.6) | 95 (34.5) | | |
| None | 10 (7.1) | 8 (5.9) | 18 (6.5) | | |
| Others | 8 (5.7) | 6 (4.4) | 14 (5.1) | | |
| **First use of contraceptives** | | | | | |
| Before 1st pregnancy | 20 (34.5) | 20 (35.7) | 40 (35.1) | 0.820 | 0.936 |
| After 1st pregnancy | 18 (31.0) | 20 (35.7) | 38 (33.3) | | |
| After 2nd pregnancy | 6 (10.3) | 6 (10.7) | 12 (10.5) | | |
| After 3rd pregnancy | 9 (15.5) | 7 (12.5) | 16 (14.0) | | |
| Others | 5 (8.6) | 3 (5.4) | 8 (7.0) | | |
| **Who influenced decision to use a contraceptive** | | | | | |
| Media | 2 (3.4) | 6 (10.7) | 8 (7.0) | 3.215 | 0.523 |
| Health worker | 23 (39.7) | 20 (35.7) | 43 (37.7) | | |
| Friend/Relative | 8 (13.8) | 10 (17.9) | 18 (15.8) | | |
| Spouse | 17 (29.3) | 15 (26.8) | 32 (28.1) | | |
| Others | 8 (61.5) | 5 (8.9) | 13 (11.4) | | |
| **Contraceptives used the most** | | | | | |
| Withdrawal | 9 (15.5) | 10 (17.9) | 19 (16.7) | 2.375 | 0.882 |
| Breastfeeding period | 8 (13.8) | 6 (10.7) | 14 (12.3) | | |
| Periodic abstinence | 18 (31.0) | 16 (28.6) | 34 (29.8) | | |
| Condom | 12 (20.7) | 14 (25.0) | 26 (22.8) | | |
| IUCD | 6 (10.3) | 4 (7.1) | 10 (8.8) | | |
| Pills | 4 (40.0) | 6 (10.7) | 10 (8.8) | | |
| Others | 1 (1.7) | 0 | 1 (0.9) | | |

### 4.4.3 Contraceptives Use Post-intervention

Table 4.6 outlines the use of various contraceptives among the intervention and control groups following the educational intervention. Condoms were the most commonly used contraceptive in both groups, with 41.0% of the intervention group and 40.3% of the

control group reporting use. Pills were used by 18.9% of the intervention group and 14.9% of the control group. Periodic abstinence was reported by 17.2% of the intervention group and 16.4% of the control group. Withdrawal was used by 11.5% of the intervention group and 16.4% of the control group. IUCD was used by 7.4% of the intervention group and 4.5% of the control group. Breastfeeding period was used by 3.3% of the intervention group and 4.5% of the control group. The chi-square test results ($X^2 = 6.937$, p-value = 0.327) indicate no significant difference between the intervention and control groups in the types of contraceptives used post-intervention. This suggests that while the educational intervention significantly increased overall contraceptive uptake (as seen in Table 4.4), it did not significantly alter the specific types of contraceptives chosen by participants

**Table 4.6: Contraceptives Use Post-intervention**

| **Contraceptives used the most** | **Group *n* (%)** | | | **$X^2$** | **p-value** |
|---|---|---|---|---|---|
| | **Intervention** | **Control** | **Total** | | |
| Withdrawal | 14 (11.5) | 11 (16.4) | 25 (13.2) | 6.937 | 0.327 |
| Breastfeeding period | 4 (3.3) | 3 (4.5) | 7 (3.7) | | |
| Periodic abstinence | 21 (17.2) | 11 (16.40 | 32 (16.9) | | |
| Condom | 50 (41.0) | 27 (40.3) | 77 (40.7) | | |
| IUCD | 9 (7.4) | 3 (4.5) | 12 (6.3) | | |
| Pills | 23 (18.9) | 10 (14.9) | 33 (17.5) | | |
| Others | 1 (0.8) | 2 (3.0) | 3 (1.6) | | |

### 4.5 Factors Associated with Uptake of Modern Contraceptives

#### 4.5.1 Factors Associated with Uptake of Modern Contraceptive at Pre-intervention

Table 4.7 illustrates the factors associated with the uptake of modern contraceptives among the study participants before the intervention. The uptake of contraceptives was relatively similar across age groups, with 49 participants aged 18-30, 50 aged 31-40, and 15 over 40 using contraceptives. The chi-square test ($X^2 = 14.896$, $p = 0.086$)

indicates no significant difference, though the trend suggests younger participants may have slightly higher uptake. Most participants who used contraceptives had completed SSCE (66) and bachelor's degrees (37). The chi-square test ($X^2 = 4.617$, $p = 0.202$) shows no significant difference in contraceptive use based on educational level. Civil servants were the largest group using contraceptives (54), followed by traders (31) and unemployed individuals (19). The chi-square test ($X^2 = 10.831$, $p = 0.013$) indicates a significant association between occupation and contraceptive use, suggesting employment status may influence contraceptive uptake. Married participants had the highest contraceptive use (91), followed by singles (19) and divorced/widowed (10). The chi-square test ($X^2 = 6.399$, $p = 0.041$) shows a significant difference, indicating marital status affects contraceptive uptake.

The majority of contraceptive users were Catholics (64), followed by Pentecostals (27) and others (21). The chi-square test ($X^2 = 1.634$, $p = 0.442$) indicates no significant difference in contraceptive use based on religious faith. Participants with an income of less than $72 had the highest contraceptive use (68), followed by those earning $241-480 (24). The chi-square test ($X^2 = 6.960$, $p = 0.073$) shows no significant difference, but there’s a trend suggesting income level may influence contraceptive use. These findings highlight occupation and marital status as significant factors associated with contraceptive uptake before the intervention. Understanding these associations helps in designing targeted educational interventions to address specific needs and barriers within different demographic groups.

**Table 4.7: Factors Associated with Uptake of Modern Contraceptives Pre-intervention**

| Variable | Use Contraceptive (*n*) | | | $X^2$ | p-value |
|---|---|---|---|---|---|
| | Yes | No | Total | | |
| **Age (years)** | | | | | |
| 18-30 | 49 | 91 | 140 | 4.896 | 0.086 |
| 31-40 | 50 | 54 | 104 | | |
| >40 | 15 | 16 | 31 | | |
| **Level of education** | | | | | |
| FSLC | 8 | 4 | 12 | 4.617 | 0.202 |
| SSCE | 66 | 89 | 155 | | |
| Bachelors | 33 | 52 | 85 | | |
| Postgraduate | 7 | 16 | 23 | | |
| **Occupation** | | | | | |
| Unemployed | 19 | 30 | 49 | 10.831 | 0.013 |
| Civil servant | 54 | 62 | 116 | | |
| Trader | 31 | 32 | 63 | | |
| Others | 10 | 37 | 47 | | |
| **Marital status** | | | | | |
| Single | 19 | 48 | 67 | 6.399 | 0.041 |
| Married | 91 | 107 | 198 | | |
| Divorced/Widowed | 4 | 6 | 10 | | |
| **Religious faith** | | | | | |
| Pentecostal | 27 | 31 | 58 | 1.634 | 0.442 |
| Catholic | 64 | 88 | 152 | | |
| Others | 23 | 42 | 65 | | |
| **Monthly income ($)** | | | | | |
| <72 | 68 | 95 | 163 | 6.960 | 0.073 |
| 72-240 | 12 | 10 | 22 | | |
| 241-480 | 24 | 50 | 74 | | |
| >480 | 10 | 6 | 16 | | |

### 4.5.2 Factors Associated with Uptake of Modern Contraceptives at Post-intervention

Table 4.8 shows the factors associated with the uptake of modern contraceptives among study participants after the intervention. The intervention group had a significantly higher contraceptive uptake (122 participants) compared to the control group (67 participants), with a highly significant p-value ($X^2 = 44.996$, $p < 0.001$). This result underscores the effectiveness of the targeted educational intervention. The distribution of contraceptive use across age groups remained fairly similar, with 93 participants aged 18-30, 75 aged 31-40, and 22 over 40 using contraceptives. The p-value (0.633) indicates no significant difference, suggesting age did not significantly influence contraceptive uptake post-intervention. Contraceptive use was highest among participants with SSCE (100), followed by those with bachelor's degrees (43) and postgraduate degrees (12). The p-value (0.668) suggests no significant difference in contraceptive use based on education level. Civil servants continued to have the highest contraceptive use (82 participants), followed by unemployed individuals (27), traders (28), and others (23). The p-value (0.008) shows a significant association, indicating occupation influenced contraceptive use post-intervention.

Married participants remained the largest group using contraceptives (127 participants), followed by singles (40) and divorced/widowed (22). The p-value (0.185) indicates no significant difference, suggesting marital status did not significantly affect contraceptive uptake post-intervention. Catholics had the highest contraceptive use (102 participants), followed by Pentecostals (40) and others (47). The p-value (0.750) shows no significant difference in contraceptive use based on religious faith. The majority of contraceptive users had a monthly income of less than $72 (111 participants), followed by those earning $241-480 (24 participants). The p-value (0.459) indicates no significant difference, suggesting income level did not significantly influence contraceptive use post-intervention. The findings highlight that the educational intervention significantly increased contraceptive uptake, while occupation remained a significant factor influencing use. Other factors such as age, education, marital status, religious faith, and monthly income did not show significant differences post-intervention.

**Table 4.8: Factors Associated with Uptake of Modern Contraceptives Post-intervention**

| Variable | Use Contraceptive (*n*) | | | $X^2$ | p-value |
|---|---|---|---|---|---|
| | Yes | No | Total | | |
| **Study group** | | | | | |
| Intervention group | 122 | 18 | 140 | 44.996 | 0.000 |
| Control group | 67 | 68 | 135 | | |
| **Age (years)** | | | | | |
| 18-30 | 93 | 47 | 140 | 0.914 | 0.633 |
| 31-40 | 75 | 29 | 104 | | |
| >40 | 21 | 10 | 31 | | |
| **Level of education** | | | | | |
| FSLC | 9 | 3 | 12 | 1.563 | 0.668 |
| SSCE | 110 | 45 | 155 | | |
| Bachelors | 56 | 29 | 85 | | |
| Postgraduate | 14 | 9 | 23 | | |
| **Occupation** | | | | | |
| Unemployed | 27 | 22 | 49 | 11.864 | 0.008 |
| Civil servant | 82 | 34 | 116 | | |
| Trader | 52 | 11 | 63 | | |
| Others | 28 | 19 | 47 | | |
| **Marital status** | | | | | |
| Single | 40 | 27 | 67 | 3.371 | 0.185 |
| Married | 142 | 56 | 198 | | |
| Divorced/Widowed | 7 | 3 | 10 | | |
| **Religious faith** | | | | | |
| Pentecostal | 40 | 18 | 58 | 0.575 | 0.750 |
| Catholic | 102 | 50 | 152 | | |
| Others | 47 | 18 | 65 | | |
| **Monthly income ($)** | | | | | |
| <72 | 111 | 52 | 163 | 2.591 | 0.459 |
| 72-240 | 18 | 4 | 22 | | |
| 241-480 | 48 | 26 | 74 | | |
| >480 | 12 | 4 | 16 | | |

### 4.6 Chi-square Test for Goodness of Fit Intervention Group

Table 4.9 presents the Chi-square test for goodness of fit for contraceptive use within the intervention group, comparing pre-intervention and post-intervention data. Before the intervention, among the intervention group, 58 participants (41.4%) reported using contraceptives, while 82 participants (58.6%) did not. The chi-square test ($X^2 = 63.716$,

$p < 0.001$) indicates a significant deviation from expected frequencies, suggesting lower initial uptake. After the educational intervention, 122 participants (87.1%) reported using contraceptives, while 18 participants (12.9%) did not. This significant increase in uptake post-intervention is highlighted by the chi-square result. The odds ratio (OR = 4.556) with a 95% confidence interval (CI) ranging from 2.895 to 7.167 demonstrates that participants were over four times more likely to use contraceptives post-intervention compared to pre-intervention. The p-value (0.000) further emphasizes the statistical significance of this change. These results underscore the effectiveness of the targeted health education intervention in significantly enhancing contraceptive uptake among the intervention group.

**Table 4.9: Chi-square Test for Goodness of Fit Intervention Group**

| **Intervention Group** | **Utilize Contraceptive** | | **$X^2$** | **p-value** | **OR** | **95% CI** | |
|---|---|---|---|---|---|---|---|
| | **Yes** | **No** | | | | **Lower** | **Upper** |
| Pre-intervention | 58 (41.4) | 82 (58.6) | 63.716 | 0.000 | 4.556 | 2.895 | 7.167 |
| Post-intervention | 122 (87.1) | 18 (12.9) | | | | | |

### 4.7 Chi-square Test for Goodness of Fit Control Group

Table 4.10 presents the Chi-square test for goodness of fit for contraceptive use within the control group, comparing pre-intervention and post-intervention data. Before the intervention, among the control group, 56 participants (41.5%) reported using contraceptives, while 79 participants (58.5%) did not. The chi-square test ($X^2 = 1.807$, $p = 0.179$) indicates no significant deviation from expected frequencies, suggesting stable baseline contraceptive use. After the same period during which the intervention group received education, the control group saw a slight increase in contraceptive use, with 67 participants (49.6%) reporting use, while 68 participants (50.4%) did not. The chi-square test still shows no significant change. The odds ratio (OR = 1.162) with a 95% confidence interval (CI) ranging from 0.933 to 1.447 indicates that participants in the control group were only slightly more likely to use contraceptives post-intervention,

with no significant impact observed. The p-value (0.179) further emphasizes the lack of significant change. These results suggest that the educational intervention had a significant impact on the intervention group, as seen in Table 4.9, whereas the control group's contraceptive use remained relatively unchanged, highlighting the effectiveness of targeted health education.

**Table 4.10: Chi-square Test for Goodness of Fit Control Group**

| Control Group | Utilize Contraceptive | | $X^2$ | p-value | OR | 95% CI | |
|---|---|---|---|---|---|---|---|
| | Yes | No | | | | Lower | Upper |
| Pre-intervention | 56 (41.5) | 79 (58.5) | 1.807 | 0.179 | 1.162 | 0.933 | 1.447 |
| Post-intervention | 67 (49.6) | 68 (50.4) | | | | | |

### 4.8 Chi-square test for Independence

Table 4.11 presents the end-term uptake of contraceptives for both the intervention and control groups. The data shows that 122 participants (87.1%) in the intervention group used contraceptives at the end of the study, while only 18 participants (12.9%) did not. The chi-square test result ($X^2 = 44.999$, $p < 0.001$) indicates a highly significant difference in contraceptive uptake. In the control group, 67 participants (49.6%) used contraceptives, while 68 participants (50.4%) did not. The odds ratio (OR = 1.756) with a 95% confidence interval (CI) ranging from 1.464 to 2.105 demonstrates that participants in the intervention group were significantly more likely to use contraceptives compared to the control group by the end of the study. The highly significant p-value (0.000) underscores the effectiveness of the targeted health education intervention in enhancing contraceptive uptake.

**Table 4.11: End Term Uptake for both Groups**

| Group | Used Contraceptive | | $X^2$ | p-value | OR | 95% CI | |
|---|---|---|---|---|---|---|---|
| | Yes | No | | | | Lower | Upper |
| Intervention | 122 (87.1) | 18 (12.9) | 44.999 | 0.000 | 1.756 | 1.464 | 2.105 |
| Control | 67 (49.6) | 68 (50.4) | | | | | |

### 4.9 Perception of Contraceptives

#### 4.9.1 Perception of Contraceptives Pre-intervention

Table 4.12 presents the pre-intervention perceptions of contraceptives among participants in both the intervention and control groups. The data indicates that about half of the participants in both groups disagreed with the statement that contraceptives are only for adult married persons, with 50% of the intervention group and 51.1% of the control group expressing disagreement. Additionally, approximately 45% of participants in the intervention group and 43.7% in the control group agreed with the statement. This shows no significant difference between the groups regarding this perception ($p = 0.977$). When asked whether contraceptives are expensive, 55.7% of the intervention group disagreed, compared to 46.7% of the control group. Although more participants in the intervention group disagreed, the difference was not statistically significant ($p = 0.324$). Regarding the perception that adolescents who use contraceptives are bad, 41.4% of the intervention group and 37% of the control group disagreed, while 42.9% of the intervention group and 45.2% of the control group agreed. This also showed no significant difference ($p = 0.742$).

The belief that contraceptive use leads to infertility was disagreed upon by 47.1% of the intervention group and 42.2% of the control group. Again, this difference was not significant ($p = 0.641$). Similarly, the process of acquiring contraceptives was considered embarrassing by 32.9% of the intervention group and 31.1% of the control group, with no significant difference ($p = 0.947$). Approval of contraceptive use was high in both groups, with 68.6% of the intervention group and 74.1% of the control group agreeing. This difference was not significant ($p = 0.587$). Most participants

believed that contraceptives are effective in avoiding pregnancy, with 69.3% in the intervention group and 72.6% in the control group agreeing ($p = 0.832$).

Regarding the morality of advertising and information about contraceptives, 71.4% of the intervention group and 63.7% of the control group disagreed that it was immoral ($p = 0.385$). The perception that contraceptives have significant side effects was agreed upon by 60% of the intervention group and 59.3% of the control group, showing no significant difference ($p = 0.725$). Lastly, the belief that religion prohibits the use of contraception was disagreed with by 47.1% of the intervention group and 50.4% of the control group ($p = 0.708$). Overall, these results indicate that perceptions of contraceptives were similar between the intervention and control groups before the educational intervention, ensuring a comparable baseline for evaluating the impact of the intervention.

**Table 4.12: Perception of Contraceptives Pre-intervention**

| Perception/Group | Disagree | Neutral | Agree | $X^2$ | p-value |
|---|---|---|---|---|---|
| **Contraceptives are only for adult married persons** | | | | | |
| Intervention group | 70 (50.0) | 7 (5.0) | 63 (45.0) | 0.047 | 0.977 |
| Control group | 69 (51.1) | 7 (5.2) | 59 (43.7) | | |
| **Contraceptives are expensive** | | | | | |
| Intervention group | 78 (55.7) | 33 (23.6) | 29 (20.7) | 2.255 | 0.324 |
| Control group | 63 (46.7) | 38 (28.1) | 34 (25.2) | | |
| **Adolescents who use contraceptives are bad** | | | | | |
| Intervention group | 58 (41.4) | 22 (15.7) | 60 (42.9) | 0.597 | 0.742 |
| Control group | 50 (37.0) | 24 (17.8) | 61 (45.2) | | |
| **Contraceptives use leads to infertility** | | | | | |
| Intervention group | 66 (47.1) | 38 (27.1) | 36 (25.7) | 0.891 | 0.641 |
| Control group | 57 (42.2) | 43 (31.9) | 35 (25.9) | | |
| **The process of acquiring contraceptives is often embarrassing** | | | | | |
| Intervention group | 64 (45.7) | 30 (21.4) | 46 (32.9) | 0.108 | 0.947 |
| Control group | 64 (47.4) | 29 (21.5) | 42 (31.1) | | |
| **I approve use of contraceptives** | | | | | |
| Intervention group | 25 (17.9) | 19 (13.6) | 96 (68.6) | 1.066 | 0.587 |
| Control group | 19 (14.1) | 16 (11.9) | 100 (74.1) | | |
| **Contraceptives are effective in avoiding pregnancy** | | | | | |
| Intervention group | 23 (16.4) | 20 (14.3) | 97 (69.3) | 0.367 | 0.832 |
| Control group | 20 (14.8) | 17 (12.6) | 98 (72.6) | | |
| **Advertisement and information about contraceptive use is immoral** | | | | | |
| Intervention group | 100 (71.4) | 18 (12.9) | 22 (15.7) | 1.907 | 0.385 |
| Control group | 86 (63.7) | 23 (17.0) | 26 (19.3) | | |
| **Contraceptives have significant side effects** | | | | | |
| Intervention group | 27 (19.3) | 29 (20.7) | 84 (60.0) | 1.318 | 0.725 |
| Control group | 32 (23.7) | 23 (17.0) | 80 (59.3) | | |
| **Religion prohibits the use of contraception** | | | | | |
| Intervention group | 66 (47.1) | 20 (14.3) | 54 (38.6) | 0.691 | 0.708 |
| Control group | 68 (50.4) | 15 (11.1) | 52 (38.5) | | |

### 4.9.2 Perception of Contraceptives Post-intervention

Table 4.13 presents the post-intervention perceptions of contraceptives among participants in both the intervention and control groups. The data indicates that there were notable changes in perceptions following the educational intervention. Regarding the statement that contraceptives are only for adult married persons, a significantly higher percentage of participants in the intervention group disagreed with this statement post-intervention (75.7%) compared to the control group (58.5%). This significant difference, highlighted by a p-value of 0.007, suggests that the educational intervention successfully challenged the perception that contraceptives are only suitable for married adults. When considering the cost of contraceptives, 78.6% of the intervention group disagreed with the statement that contraceptives are expensive, compared to 48.9% of the control group. The p-value of 0.000 shows a significant difference, indicating that the intervention effectively altered perceptions about the cost of contraceptives. The belief that adolescents who use contraceptives are bad saw a substantial shift, with 75.0% of the intervention group disagreeing with this statement post-intervention, compared to 43.7% of the control group. The significant p-value of 0.000 demonstrates the intervention's impact in reducing the stigma towards adolescent contraceptive use.

Similarly, the perception that contraceptive use leads to infertility showed a significant change. In the intervention group, 80.7% disagreed with this statement, compared to 43.7% of the control group. The p-value of 0.000 underscores the substantial impact of the educational intervention in changing this perception. The process of acquiring contraceptives was considered embarrassing by fewer participants in the intervention group post-intervention, with 77.9% disagreeing, compared to 45.9% in the control group. This significant difference, indicated by a p-value of 0.000, reflects the intervention's effectiveness in reducing the embarrassment associated with obtaining contraceptives. Approval for contraceptive use increased significantly in the intervention group, with 86.4% expressing approval post-intervention, compared to 72.6% in the control group. The p-value of 0.014 suggests that the intervention positively influenced participants' approval of contraceptive use. When asked if contraceptives are effective in avoiding pregnancy, 87.1% of the intervention group agreed post-intervention, compared to 74.1% of the control group. This significant difference, with a p-value of 0.021, indicates increased confidence in the effectiveness of contraceptives following the intervention. Although more participants in the

intervention group disagreed that advertisement and information about contraceptive use is immoral (78.6%) compared to the control group (65.9%), the difference was not statistically significant ($p = 0.060$).

The perception that contraceptives have significant side effects showed a significant reduction in the intervention group, with 45.7% disagreeing compared to 25.1% in the control group. The p-value of 0.000 highlights the intervention's impact. Lastly, the belief that religion prohibits the use of contraception decreased in the intervention group, with 42.9% disagreeing compared to 51.1% in the control group. The significant p-value of 0.000 reflects the intervention's effectiveness in addressing religious concerns about contraceptive use. Overall, the post-intervention data indicates significant improvements in perceptions across several dimensions for the intervention group, demonstrating the effectiveness of the targeted health education intervention in altering negative perceptions about contraceptives.

**Table 4.13: Perception of Contraceptives Post-intervention**

| Perception/Group | Disagree | Neutral | Agree | $X^2$ | p-value |
|---|---|---|---|---|---|
| **Contraceptives are only for adult married persons** | | | | | |
| Intervention group | 106 (75.7) | 1 (0.7) | 33 (23.6) | 9.900 | 0.007 |
| Control group | 79 (58.5) | 4 (3.00 | 52 (38.5) | | |
| **Contraceptives are expensive** | | | | | |
| Intervention group | 110 (78.6) | 15 (10.7) | 15 (10.7) | 26.374 | 0.000 |
| Control group | 66 (48.9) | 37 (27.4) | 32 (23.7) | | |
| **Adolescents who use contraceptives are bad** | | | | | |
| Intervention group | 105 (75.0) | 7 (5.0) | 28 (20.0) | 28.824 | 0.000 |
| Control group | 59 (43.7) | 22 (16.3) | 54 (40.0) | | |
| **Contraceptives use leads to infertility** | | | | | |
| Intervention group | 113 (80.7) | 18 (12.9) | 9 (6.4) | 41.011 | 0.000 |
| Control group | 59 (43.7) | 42 (31.1) | 34 (25.2) | | |
| **The process of acquiring contraceptives is often embarrassing** | | | | | |
| Intervention group | 109 (77.9) | 11 (7.9) | 20 (14.3) | 29.937 | 0.000 |
| Control group | 62 (45.9) | 29 (21.5) | 44 (32.6) | | |
| **I approve use of contraceptives** | | | | | |
| Intervention group | 9 (6.4) | 10 (7.1) | 121 (86.4) | 8.512 | 0.014 |
| Control group | 21 (15.6) | 16 (11.9) | 98 (72.6) | | |
| **Contraceptives are effective in avoiding pregnancy** | | | | | |
| Intervention group | 8 (5.7) | 10 (7.1) | 122 (87.1) | 7.753 | 0.021 |
| Control group | 18 (13.3) | 17 (12.6) | 100 (74.1) | | |
| **Advertisement and information about contraceptive use is immoral** | | | | | |
| Intervention group | 110 (78.6) | 15 (10.7) | 15 (10.7) | 5.627 | 0.060 |
| Control group | 89 (65.9) | 21 (15.6) | 25 (18.5) | | |
| **Contraceptives have significant side effects** | | | | | |
| Intervention group | 64 (45.7) | 29 (20.7) | 47 (33.6) | 20.678 | 0.000 |
| Control group | 34 (25.1) | 21 (15.6) | 80 (59.3) | | |
| **Religion prohibits the use of contraception** | | | | | |
| Intervention group | 60 (42.9) | 48 (34.3) | 32 (22.9) | 22.179 | 0.000 |
| Control group | 69 (51.1) | 15 (11.1) | 51 (37.8) | | |

### 4.10 Perceived Barriers to Utilization of Contraceptives

Table 4.14 outlines the perceived barriers to contraceptive utilization among participants in both the intervention and control groups. The most commonly cited barrier was low awareness, reported by 37.7% of participants in the intervention group and 31.2% in the control group, making it the most significant obstacle overall. This was followed by a lack of interest, identified by 24.5% of the intervention group and 22.6% of the control group. Concerns about the effectiveness of contraceptives were noted by 9.4% of the intervention group and 6.5% of the control group. Cost was considered a barrier by 5.7% of participants in the intervention group and 6.5% in the control group. Religious beliefs were cited by 7.5% of the intervention group and 5.4% of the control group. The inconvenience associated with contraceptive use was mentioned by 1.9% of the intervention group and 4.3% of the control group.

Some participants felt that contraceptive use encourages immorality among teenagers, with 7.5% in the intervention group and 11.8% in the control group expressing this concern. Lastly, the non-involvement of male partners was noted as a barrier by 5.7% of the intervention group and 11.8% of the control group. Overall, 53.3% of the perceived barriers were reported by participants in the intervention group, while 46.7% were reported by the control group. These findings highlight key areas to address in future educational interventions to improve contraceptive uptake, focusing on increasing awareness, addressing concerns about effectiveness, and involving male partners.

**Table 4.14: Perceived barriers to utilization of contraceptives**

| **Barrier** | **Group *n* (%)** | | |
|---|---|---|---|
| | **Intervention** | **Control** | **Total** |
| Religious belief | 8 (7.5) | 5 (5.4) | 13 (6.5) |
| Lack of interest | 26 (24.5) | 21 (22.6) | 47 (23.6) |
| Not trusting its effectiveness | 10 (9.4) | 6 (6.5) | 16 (8.0) |
| Cost | 6 (5.7) | 6 (6.5) | 12 (6.0) |
| Low awareness | 40 (37.7) | 29 (31.2) | 69 (34.7) |
| Inconvenience | 2 (1.9) | 4 (4.3) | 6 (3.0) |
| Encourages immorality among teenagers | 8 (7.5) | 11 (11.8) | 19 (9.5) |
| Non-involvement of male partners | 6 (5.7) | 11 (11.8) | 17 (8.5) |
| Total | 106 (53.3) | 93 (46.7) | 199 (100) |

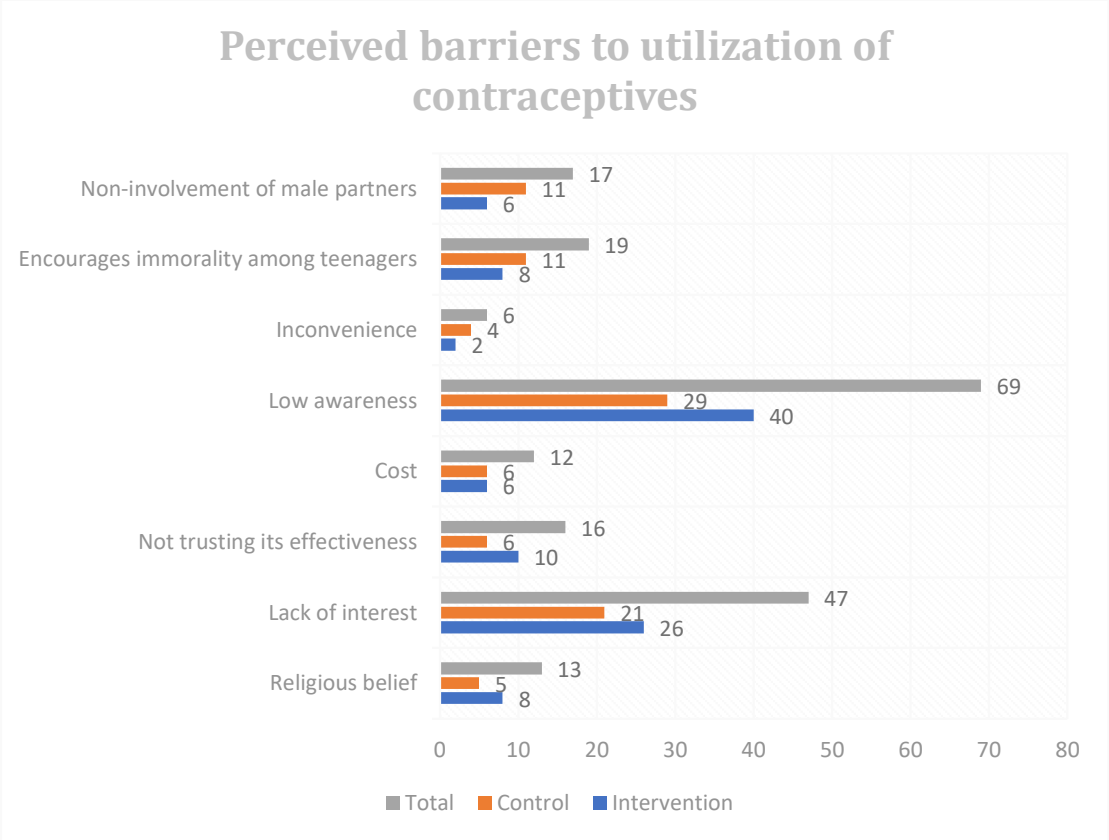


**Figure 4.1: Perceived barriers to utilization of contraceptives**

# CHAPTER FIVE: DISCUSSION, CONCLUSION AND RECOMMENDATION

## 5.1 Discussion

This study aimed to evaluate the effect of targeted health education on the uptake of contraceptives among women of reproductive age in NAUTH, Nnewi. The results demonstrated a significant increase in contraceptive use in the intervention group compared to the control group. The educational intervention positively influenced participants' knowledge and perceptions of contraceptives, addressing key barriers to contraceptive use such as low awareness, misconceptions about side effects, and religious concerns. The findings indicate that targeted health education is an effective strategy for improving contraceptive uptake among women in this setting.

### 5.1.1 Uptake of contraceptives

The findings of this study align with existing literature on the impact of targeted health education on contraceptive uptake. Several studies have highlighted the importance of educational interventions in improving knowledge and altering perceptions about contraceptives, ultimately leading to higher uptake rates. For example, a study by Bradley and Casterline (2014) found that targeted educational programs significantly increased contraceptive use by addressing common misconceptions and providing accurate information about contraceptive methods. Similarly, Lassi et al. (2023) demonstrated that educational interventions not only enhanced contraceptive knowledge but also empowered women to make informed reproductive health decisions, resulting in increased uptake of modern contraceptives.

Our study's findings are consistent with these results, showing a significant increase in contraceptive use in the intervention group compared to the control group. Pre-intervention, the uptake of contraceptives was similar between both groups, with 41.1% in the intervention group and 41.5% in the control group using contraceptives. Post-intervention, the uptake in the intervention group rose dramatically to 87.1%, while the control group saw a modest increase to 49.6%. This significant difference underscores the effectiveness of the targeted educational intervention in promoting contraceptive use.

Additionally, our study found that addressing barriers such as low awareness and misconceptions about contraceptives can lead to substantial improvements in uptake. This finding is supported by the work of Aung, Mitchell, and Braun (2020), who emphasized the role of educational interventions in overcoming cultural and informational barriers to contraceptive use.

However, some discrepancies were noted when comparing our results with other studies. For instance, while Anate et al. (2020) and Obasale and Joseph (2017) reported that socioeconomic factors like income and education levels had a significant impact on contraceptive use, our study found that these factors did not show significant differences post-intervention. This discrepancy may be due to the comprehensive nature of our educational intervention, which effectively addressed a wide range of barriers and influenced a broader demographic spectrum.

### 5.1.2 Factors associated with uptake of contraceptives

The uptake of contraceptives among women is influenced by a variety of factors, as highlighted by both the pre-intervention and post-intervention phases of this study. Age emerged as a consistent influencer of contraceptive uptake. Younger women, particularly those aged 18-30, demonstrated higher levels of contraceptive use compared to older women. This trend aligns with the findings of Bradley and Casterline (2014), who observed that younger women are generally more receptive to adopting modern contraceptive methods, likely due to greater exposure to educational campaigns and a more progressive attitude towards family planning. Education level was another significant factor. Participants with higher levels of education, such as those with secondary education (SSCE) and higher degrees, were more likely to use contraceptives compared to those with only primary education or no formal education. This observation supports the findings of Anate et al. (2020) and Obasale and Joseph (2017), who noted that educational attainment has a profound impact on reproductive health decisions and access to contraceptive information.

Occupation played a crucial role in influencing contraceptive use, especially after the intervention. The study found that civil servants and those in formal employment exhibited higher rates of contraceptive use compared to unemployed participants. This suggests that employment status, coupled with financial stability and access to health information, facilitates better health choices. These findings are in line with the results

of Aung, Mitchell, and Braun (2020), who emphasized the importance of socio-economic status in health behavior. Marital status also had a significant impact on contraceptive use. Married women were more likely to use contraceptives compared to single or divorced/widowed women. This trend could be attributed to the necessity of family planning within stable marital relationships, as similarly observed in studies by Lassi et al. (2023). The educational intervention appeared to reinforce this trend, highlighting the effectiveness of tailored health education for married couples. Religious beliefs presented a notable barrier to contraceptive use. Participants with strong religious views often showed reluctance to use contraceptives, reflecting a significant challenge for public health interventions. This barrier is consistent with the findings of Bradley and Casterline (2014), who stressed the need for culturally sensitive health education programs that address and respect religious concerns.

Income level, while not showing significant differences post-intervention, still influenced contraceptive uptake. Participants with higher income levels were more likely to afford and use contraceptives. However, the comprehensive educational intervention helped bridge some of these gaps by providing information and support that transcended financial barriers. Awareness and access to information were critical determinants of contraceptive use. The educational intervention significantly improved participants' knowledge and perceptions about contraceptives, reducing misconceptions and emphasizing the benefits of their use. This finding underscores the importance of continuous educational efforts, as highlighted by Bradley and Casterline (2014) and Lassi et al. (2023).

### 5.1.3 Sources of information on contraceptives and perceived access to contraceptives

Before the intervention, participants reported a variety of sources from which they obtained information about contraceptives. The most frequently mentioned sources included friends and relatives (37.1%), hospitals (34.5%), and social media (10.9%). Traditional media outlets like radio and television accounted for a smaller proportion (5.8%), while some participants reported having no sources of information on contraceptives (6.5%). These findings echo the results from studies by Adeyemi et al. (2016) and Bankole & Onasote (2016), which highlighted the importance of interpersonal communication and healthcare facilities in disseminating information

about contraceptives. However, our study also emphasized the growing role of social media, particularly among younger participants, aligning with Bankole and Onasote's (2016) observation that social media is a preferred information source for younger demographics.

The perceived access to contraceptives was evaluated both before and after the intervention. Pre-intervention, many participants reported barriers such as low awareness (34.7%), lack of interest (23.6%), and doubts about the effectiveness of contraceptives (8.0%). Cost was also a perceived barrier for some participants (6.0%), though not as significant as other factors. These barriers are consistent with those identified in the literature by Dasgupta et al. (2016), who discussed how geographic and economic constraints often limit access to contraceptives, particularly in rural areas. Post-intervention, there was a marked improvement in participants' perceptions of access to contraceptives. The educational intervention effectively addressed many of the identified barriers by providing comprehensive information and dispelling common myths about contraceptives. This was particularly evident in the significant reduction of participants who perceived low awareness as a barrier. Additionally, there was an improvement in trust towards the effectiveness of contraceptives, indicating the success of the intervention in enhancing knowledge and confidence among participants.

### 5.1.4 Impact of targeted health education on the uptake of contraceptives among women aged 18-49 in NAUTH, Nnewi

The impact of targeted health education on the uptake of contraceptives was clearly demonstrated by the findings of this study. The educational intervention significantly improved participants' knowledge and perceptions regarding contraceptive methods, leading to a marked increase in contraceptive use among the intervention group.

Before the intervention, the uptake of contraceptives was relatively low, with 41.1% of participants in the intervention group using contraceptives. This changed dramatically post-intervention, with 87.1% of the intervention group adopting contraceptives. This stark contrast highlights the effectiveness of the targeted health education program. The control group, on the other hand, only saw a modest increase from 41.5% to 49.6%, underscoring the specific impact of the intervention itself. The educational sessions addressed common misconceptions and barriers associated with contraceptive use, such as perceived side effects, religious prohibitions, and misinformation about efficacy.

Post-intervention, there was a significant shift in perceptions, with more participants in the intervention group disagreeing with statements that portrayed contraceptives negatively. For instance, the percentage of participants who disagreed that contraceptives are only for adult married persons increased to 75.7% in the intervention group, compared to 58.5% in the control group.

The intervention was particularly effective in reducing the perceived barriers to contraceptive use. Pre-intervention, low awareness was the most cited barrier, reported by 37.7% of the intervention group. Post-intervention, this barrier saw a significant reduction, indicating that the educational sessions successfully raised awareness about contraceptive methods and their benefits. Additionally, concerns about the expense of contraceptives were addressed, with 78.6% of the intervention group disagreeing that contraceptive are expensive post-intervention, compared to 48.9% in the control group. These findings are consistent with previous research, such as the studies by Bradley and Casterline (2014) and Lassi et al. (2023), which found that educational interventions effectively improve contraceptive uptake by addressing misconceptions and empowering women with accurate information. The significant increase in contraceptive use among the intervention group aligns with Aung, Mitchell, and Braun's (2020) emphasis on the role of education in overcoming cultural and informational barriers.

The study's results suggest that targeted health education should be integral to reproductive health programs. Health educators can significantly improve contraceptive uptake by tailoring educational content to address specific misconceptions and barriers. This has broader implications for public health policy, indicating that investments in educational interventions can yield substantial benefits in terms of reproductive health outcomes.

### 5.1.5 Summary of Discussion

The study found that targeted health education significantly increased the uptake of contraceptives among women of reproductive age. The intervention group saw a dramatic rise in contraceptive use from 41.1% to 87.1%, underscoring the effectiveness of the educational program. This result is consistent with previous studies by Bradley and Casterline (2014) and Lassi et al. (2023), demonstrating that educational

interventions improve contraceptive uptake by addressing misconceptions and empowering women with accurate information.

Key factors associated with higher contraceptive use included younger age, higher education levels, formal employment, and marital status, while religious beliefs and income levels posed challenges. The intervention effectively addressed barriers such as low awareness and concerns about the effectiveness and cost of contraceptives, leading to improved perceptions and increased use. The findings highlight the critical role of targeted health education in enhancing reproductive health outcomes and suggest that such interventions should be integral to public health strategies.

## 5.2 Conclusion

This study has demonstrated the significant impact of targeted health education on the uptake of contraceptives among women of reproductive age in NAUTH, Nnewi. The educational intervention led to a substantial increase in contraceptive use, from 41.1% to 87.1% in the intervention group, highlighting the effectiveness of such programs in addressing misconceptions and empowering women with accurate information.

The findings also revealed key factors influencing contraceptive use, including age, education level, occupation, marital status, religious beliefs, and income. Addressing these factors through tailored educational programs can significantly enhance reproductive health outcomes.

The study underscores the critical role of targeted health education in improving contraceptive uptake and suggests that such interventions should be an integral part of public health strategies. Continued efforts to provide accurate and comprehensive reproductive health education are essential for empowering women to make informed decisions and achieve better health outcomes.

## 5.3 Recommendations

### 5.3.1 Recommendation from the study

1. Health education interventions should be integral to public health strategies to improve contraceptive uptake. Tailored educational programs addressing specific misconceptions, barriers, and cultural sensitivities can significantly enhance reproductive health outcomes.

2. Awareness campaigns should leverage multiple information channels, including social media, healthcare facilities, and community leaders, to reach diverse demographic groups. Emphasis should be placed on accurate information about contraceptive methods, their benefits, and addressing common myths.

3. Healthcare providers should receive regular training on the latest contraceptive methods, counseling techniques, and strategies for addressing patients' concerns and cultural beliefs. This ensures that they can provide non-judgmental, comprehensive, and effective reproductive health services.

4. Efforts should be made to include male partners in family planning discussions and education. Addressing male involvement can help reduce barriers related to gender dynamics and support women in their contraceptive choices.

5. Policies aimed at reducing the cost of contraceptives and improving their accessibility should be implemented. Subsidies, free distribution programs, and ensuring the availability of contraceptives in both urban and rural areas can help overcome economic constraints.

### 5.3.2 Recommendations for further research

1. Future research should include longitudinal studies to track the long-term effects of targeted health education interventions on contraceptive uptake. This will provide insights into the sustainability of these interventions over time.

2. Studies should be conducted across different regions and among diverse population groups to understand how various cultural, socioeconomic, and demographic factors influence contraceptive uptake and the effectiveness of educational interventions.

3. Research should explore the impact of involving male partners in contraceptive education and family planning services. Understanding the role of men in contraceptive decision-making can help design more inclusive and effective programs.

4. Investigate the use of mobile health (mHealth) and digital platforms for delivering contraceptive education. These technologies can expand reach and engagement, particularly among younger populations who are more digitally connected.

5. Further research is needed to understand the complex relationship between religious beliefs and contraceptive use. Studies should aim to identify effective ways to provide culturally sensitive education that respects religious beliefs while promoting reproductive health.

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## Appendix I: Questionnaire

**<u>Questions to ask before the intervention</u>**

**Section A: Sociodemographic information of respondents**

**Instruction: Please answer the following questions, and tick against your most preferred option for questions with options**

1. Respondent's number: _____
2. What is your age as at your last birthday? _____
3. Gender (Female) – All respondents are females. If any exception, please indicate _____
4. What is your highest educational qualification? (1) No formal education [ ] (2) First School Leaving Certificate [ ] (3) SSCE [ ] (4) OND/HND [ ] (5) Bachelors [ ] (6) Postgraduate [ ]
5. What is your employment status or occupation? (1) Unemployed [ ] (2) Civil Servant [ ] (3) Farmer [ ] (4) Trader [ ] (5) Others (kindly state) _____
6. Kindly rate your monthly income level US Dollars? (1) less than minimum wage (USD <72) [ ] (2) 72-240 [ ] (3) 241-480[ ] (4)>480 [ ]
7. What best describes your living arrangement? (1) Living with spouse [ ] (2) Not living with spouse [ ]
8. What best describes your marital status? (1) Single [ ] (2) Married [ ] (3) Divorced [ ] (4) Widowed [ ]
9. What best describes your religious faith? (1) Pentecostal [ ] (2) Catholic [ ] (3) Atheist [ ] (4) Others (please specify) _____
10. What media outlet are you most conversant with? (1) Social Media [ ] (2) Television [ ] (3) Radio [ ] (4) Newspapers and magazines [ ] (5) All of the above [ ] (6) None of the above [ ]
11. How many children do you have at present? _____

12. Kindly rate the distance of your home away from the health facility. (1) Too near [ ] (2) A bit near [ ] (3) A bit far [ ] (4) Too far [ ]

**Section B: Research issues**

**Instruction: Please answer the following questions, and tick against your most preferred option for questions with options**

13. Kindly rate your level of awareness on contraceptives. (0) Not aware [ ] (1) Very low [ ] (2) Low [ ] (3) Moderate [ ] (4) High [ ] (5) Very high [ ]
14. Kindly rate your knowledge on contraceptives. (0) No knowledge [ ] (1) Very low [ ] (2) Low [ ] (3) Moderate [ ] (4) High [ ] (5) Very high [ ]
15. Where was the first place you ever heard of contraceptives? (1) Friends and relatives [ ] (2) Social media [ ] (3) Radio [ ] (4) Television [ ] (5) Health centre or hospital [ ] (6) None [ ] (6) Others (please specify) _____
16. When did you first use a contraceptive? (1) Before your first pregnancy [ ] (2) After your first pregnancy [ ] (3) After your first two pregnancies [ ] (4) After your first three pregnancies [ ] (5) Others (please specify) _____
17. Who influenced your decision to use a contraceptive? (1) Media [ ] (2) Health worker [ ] (3) Friends [ ] (4) Relatives [ ] (5) Spouse [ ] (6) Others (please specify) _____
18. Kindly rate your consistency in the use of contraceptives. (0) Not consistent [ ] (1) Very low [ ] (2) Low [ ] (3) Moderate [ ] (4) High [ ] (5) Very high [ ]
19. What contraceptive do you use the most? (1) Withdrawal [ ] (2) Breastfeeding period or lactation amenorrhea [ ] (3) Periodic abstinence [ ] (4) Male condoms [ ] (5) Female condoms [ ] (6) Intrauterine Contraceptive Devices (IUCDs) [ ] (7) Pills [ ] (8) Vasectomy [ ] (9) Others (please specify) _____
20. Do you face resistance from your partner in using your most preferred contraceptive? (1) Yes [ ] (2) No [ ] (3) Somehow [ ]

21. Have you ever attended family planning with your partner? (1) Yes [ ] (2) No [ ] (3) Somehow [ ]

22. Have you ever discontinued the use of contraceptive? (1) Yes [ ] (2) No [ ] (3) Somehow [ ]

23. If "yes" to Q22, what best describes your reason?**[multiple answers can apply]** (1) It failed you [ ] (2) Desire to become pregnant [ ] (3) Side effects/health concerns [ ] (4) Financial problem [ ] (5) Infrequent sex or partner was away [ ] (6) Inconvenience [ ] (7) Religion [ ] (8) Lack of knowledge regarding the method [ ] (9) The attitude of the health workers [ ] (10) They sold it to you [ ] (11) Others (please specify) _____

24. How do you prefer sex? (1) Without condom [ ] (2) With condom [ ] (3) Indifferent [ ] (4) Prefers not to disclose [ ]

25. Have you ever expressed regret after having sex without using contraceptives? (1) Yes [ ] (2) No [ ] (3) Somehow [ ]

26. If "yes" to Q25, what was your regret? (1) Pregnancy [ ] (2) STDs [ ] (3) Others (please specify) _____

27. Ever had an unplanned pregnancy? (1) Yes [ ] (2) No [ ] (3) Somehow [ ]

28. How does the hospital educate women about contraceptives (1) Media [ ] (2) Antenatal [ ] (3) Immunization [ ] (4) Community outreach [ ] (5) All of the above [ ] (6) None of the above [ ]

29. Do you participate in the hospital's education on contraceptives? (1) Yes [ ] (2) No [ ] (3) Somehow [ ]

30. Kindly rate the hospital's efforts in educating women on contraceptives. (1) Too poor [ ] (2) Poor [ ] (3) Moderate [ ] (4) Good [ ] (5) Too good [ ] (6) Don't know [ ]

31. Besides the education on contraceptives within the hospital, are you aware of any other? (1) Yes [ ] (2) No [ ]

32. If "yes" to Q31, kindly mention -

_____

33. What challenge do you think education on contraceptives is facing in Nnewi?

_____

_____

34. Kindly rate your attendance to ANC. (1) None attendance [ ] (2) Not regular [ ] (3) Somewhat regular [ ] (4) Regular [ ]

35. Are contraceptives free of charge here? (1) Yes [ ] (2) No [ ] (3) Don't know [ ]

**Section C: Perceptions about contraceptives**

**Instruction: Kindly tick below your most preferred response to each of the statements**

| S/No | Perception | Strongly disagree | Disagree | Neither Agree Nor Disagree | Agree | Strongly Agree |
|---|---|---|---|---|---|---|
| 36 | Contraceptives are only for adult married persons | | | | | |
| 37 | Contraceptives are expensive | | | | | |
| 38 | Adolescents who use contraceptives are bad | | | | | |
| 39 | Contraceptive use leads to infertility | | | | | |
| 40 | The process of acquiring contraceptive is often embarrassing | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 41 | I approve use of contraceptives | | | | | |
| 42 | Contraceptives are effective in avoiding pregnancy | | | | | |
| 43 | Advertisement and information about contraceptive use is immoral | | | | | |
| 44 | Contraceptives have significant side effects | | | | | |
| 45 | Religion prohibits the use of contraception | | | | | |

**Questions to ask after intervention**

**Instruction: Please answer the following questions, and tick against your most preferred option for questions with options**

1. Kindly rate your level of awareness on contraceptives. (0) Not aware [ ] (1) Very low [ ] (2) Low [ ] (3) Moderate [ ] (4) High [ ] (5) Very high [ ]
2. Kindly rate your knowledge on contraceptives. (0) No knowledge [ ] (1) Very low [ ] (2) Low [ ] (3) Moderate [ ] (4) High [ ] (5) Very high [ ]
3. Since after the educational event we had, kindly rate your consistency in the use of contraceptives currently (0) Not consistent [ ] (1) Very low [ ] (2) Low [ ] (3) Moderate [ ] (4) High [ ] (5) Very high [ ]
4. What contraceptive do you use the most? (1) Withdrawal [ ] (2) Breastfeeding period or lactation amenorrhea [ ] (3) Periodic abstinence [ ] (4) Male condoms [ ] (5) Female condoms [ ] (6) Intrauterine Contraceptive Devices (IUCDs) [ ] (7) Pills [ ] (8) Vasectomy [ ] (9) Others (please specify) _____

5. Since after our educational programme, have you made an attempt to talk to your partner on the need to use contraceptives? (1) Yes [ ] (2) No [ ] (3) Somehow [ ]

6. Do you still face resistance from your partner in using your most preferred contraceptive? (1) Yes [ ] (2) No [ ] (3) Somehow [ ]

7. Have you tried to attend family planning with your partner since after our educational programme? (1) Yes [ ] (2) No [ ] (3) Somehow [ ]

8. Have you discontinued the use of contraceptive? (1) Yes [ ] (2) No [ ] (3) Somehow [ ]

9. Will you discontinue the use of contraceptive? (1) Yes [ ] (2) No [ ] (3) Somehow [ ]

10. If you have or will in future discontinue the use of contraceptives, what will likely be your reason? (1) It failed me [ ] (2) Desire to become pregnant [ ] (3) Side effects/health concerns [ ] (4) Financial problem [ ] (5) Infrequent sex or partner was away [ ] (6) Inconvenience [ ] (7) Religion [ ] (8) Lack of knowledge regarding the method [ ] (9) You switched to other method [ ] (10) The attitude of the health workers [ ] (11) They sold it to you [ ] (12) Others (please specify) _____

11. Currently, is there any change to how you have sex with your partner? (1) Yes [ ] (2) No [ ] (3) Somehow [ ]

12. If yes to Q11, what option is the best description? (1) Without condom [ ] (2) With condom [ ] (3) Indifferent [ ] (4) Prefers not to disclose [ ] (5) Others _____

13. Kindly rate the educational programme we had with you on contraceptives. (1) Too poor [ ] (2) Poor [ ] (3) Moderate [ ] (4) Good [ ] (5) Too good [ ] (6) Don’t know [ ]

14. What suggestion do you have that can improve the educational programme we had with you?

_____

15. Since after the educational programme, will you encourage attendance to ANC? (1) Yes [ ] (2) No [ ] (3) Don't know [ ]

**Section C: Perceptions about contraceptives**

**Instruction: Kindly tick below your most preferred response to each of the statements**

| S/No | Perception | Strongly disagree | Disagree | Neither Agree Nor Disagree | Agree | Strongly Agree |
|---|---|---|---|---|---|---|
| 16 | Contraceptives are only for adult married persons | | | | | |
| 17 | Contraceptives are expensive | | | | | |
| 18 | Adolescents who use contraceptives are bad | | | | | |
| 19 | Contraceptive use leads to infertility | | | | | |
| 20 | The process of acquiring contraceptive is often embarrassing | | | | | |
| 21 | I approve use of contraceptives | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 22 | Contraceptives are effective in avoiding pregnancy | | | | | |
| 23 | Advertisement and information about contraceptive use is immoral | | | | | |
| 24 | Contraceptives have significant side effects | | | | | |
| 25 | Religion prohibits the use of contraception | | | | | |

## Appendix II: Informed Consent Form

1. **Name and address of principal investigator:** Yanmeer SimeoneTyotswam Department of Population, Reproduction Health and Community Resource Management, School of Public Health and Applied Human Sciences, Kenyatta University Nairobi-Kenya.
2. **Brief on the nature of research as it relates to participants:** An unintended pregnancy also contributes to the rapid population growth that impairs desperately needed social and economic progress. The reasons for high fertility in developing countries are complex but past experience makes it clear that improving contraceptive technology and delivery of family planning information and services can help lower fertility and make an important contribution to reproductive health in all countries.

Many women and men will not use contraception because of their fears about contraceptive safety or side effects. Many others discontinue use because they did not find a method suitable-often because of unpleasant side effects and many others have an unintended pregnancy because of contraceptive failure.

The role of contraceptive delivery systems is to evaluate an extensive body of research to evaluate family planning service delivery systems which has brought about improvements in both efficiency and effectiveness of family planning and reproductive health programs. In spite of this, Nigeria is yet above replacement level, with contraceptive prevalence rate being low. However, considering the above factors and statistics, a study to assess the effects of targeted health education on uptake of contraceptives among women of reproductive age in Nnewi-city southeast Nigeria.

3. **Purpose of the study:** The general objective of this study is to assess the effect of targeted education on use of contraceptive methods among reproductive age women in Nnewi-city Nigeria.
4. **Voluntary Participation:**

Participants are free to decide on whether to participate in this study or not.

5. **Confidentiality:**

   Participants' identity in this study will be confidential. The results of the study may be published for scientific purposes but will not give the name or include any identifiable references of each respondent.

6. **Right to withdraw without repercussion:**

Participants are free to withdraw at any time without incurring any penalty.

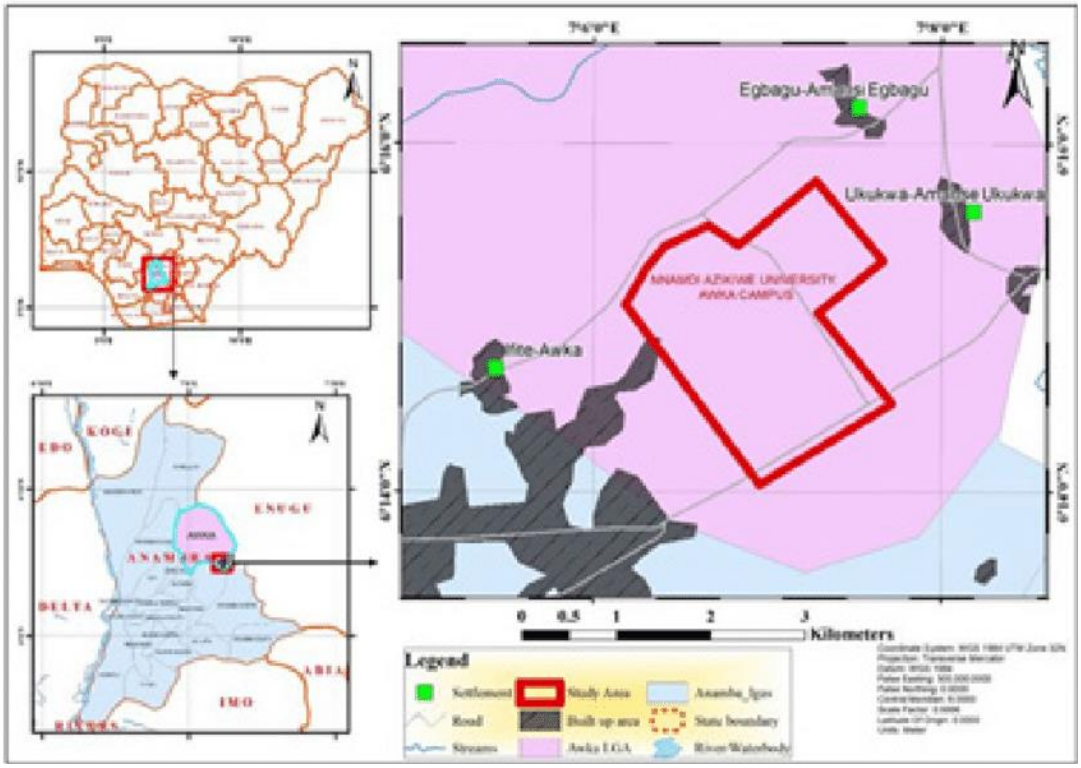
7. **Ethical issues arising from result:**

There will be no ethical issues arising from the study

8. **Name and address of Supervisor: .....**

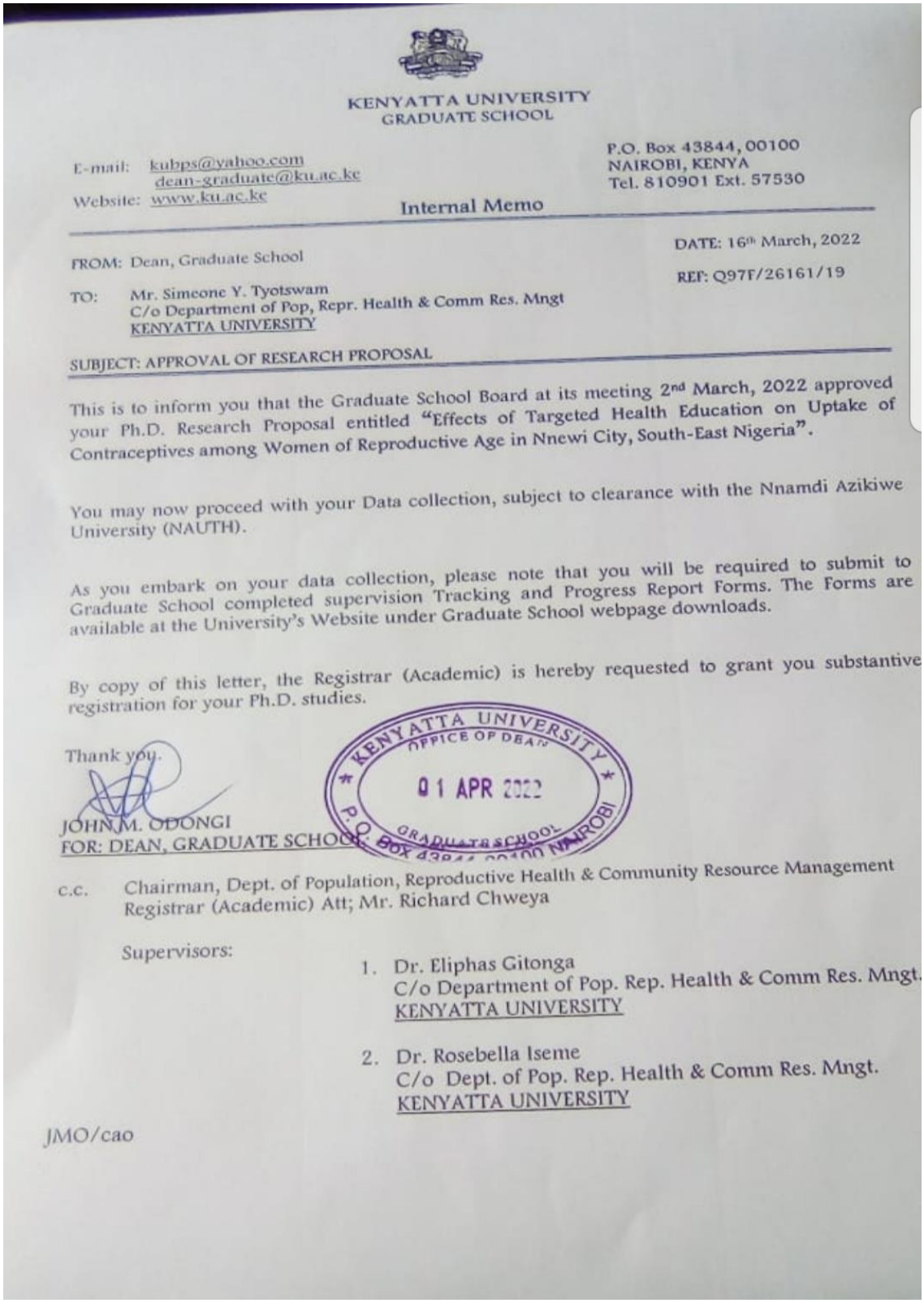
9. **Signature/thumbprint of participant……**

## Appendix III: Map of the study area




**Map showing NAUTH (Source: Ogbodo et al, 2020)**

## Appendix IV: Ethical Approval



KENYATTA UNIVERSITY
GRADUATE SCHOOL

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P.O. Box 43844, 00100
NAIROBI, KENYA
Tel. 810901 Ext. 57530

Internal Memo

FROM: Dean, Graduate School

DATE: 16th March, 2022

REF: Q97F/26161/19

TO: Mr. Simeone Y. Tyotswam
C/o Department of Pop, Repr. Health & Comm Res. Mngt
KENYATTA UNIVERSITY

SUBJECT: APPROVAL OF RESEARCH PROPOSAL

This is to inform you that the Graduate School Board at its meeting 2nd March, 2022 approved your Ph.D. Research Proposal entitled "Effects of Targeted Health Education on Uptake of Contraceptives among Women of Reproductive Age in Nnewi City, South-East Nigeria".

You may now proceed with your Data collection, subject to clearance with the Nnamdi Azikiwe University (NAUTH).

As you embark on your data collection, please note that you will be required to submit to Graduate School completed supervision Tracking and Progress Report Forms. The Forms are available at the University's Website under Graduate School webpage downloads.

By copy of this letter, the Registrar (Academic) is hereby requested to grant you substantive registration for your Ph.D. studies.

Thank you.

KENYATTA UNIVERSITY OFFICE OF DEAN 01 APR 2022 GRADUATE SCHOOL P.O. Box 43844 - 00100 NAIROBI

JOHN M. ODONGI
FOR: DEAN, GRADUATE SCHOOL

c.c. Chairman, Dept. of Population, Reproductive Health & Community Resource Management
Registrar (Academic) Att; Mr. Richard Chweya

Supervisors:

1. Dr. Eliphas Gitonga
C/o Department of Pop. Rep. Health & Comm Res. Mngt.
KENYATTA UNIVERSITY

2. Dr. Rosebella Iseme
C/o Dept. of Pop. Rep. Health & Comm Res. Mngt.
KENYATTA UNIVERSITY

JMO/cao

## Appendix V: Ethical Approval


**NNAMDI AZIKIWE UNIVERSITY TEACHING HOSPITAL**

*P.M.B. 5025, NNEWI, ANAMBRA STATE, NIGERIA*

Chief Ezekiel Irmiya E. Afukonyo
B.A Hist, M.A Int'l Law and Diplomacy.
Chairman
Board of Management

Mrs. Chinyelu Ogoamaka Nwofor
B.Ed, M.Ed, MHP&M, AHA, FCAI
Director of Administration/
Secretary to the Board

Dr. Joseph O. Ugboaja
MBBS (NAU), FMCOG, FWACS, FICS, FMAS, DMAS, Dip. ART (Ind)
Chief Medical Director/
Chief Executive Officer

Dr. Ogochukwu I. Ezejiofor
MBBS (Benin), FMCP, Dip. Cosmetic Derma (India)
Chairman
Medical Advisory Committee

E-mail: nauthcmd@yahoo.co.uk
nauthnnewi@hotmail.com


*Our Ref:* NAUTH/CS/66/VOL.15/VER.3/102/2022/041

*Your Ref:* _____

*Date:* 5th July, 2022

**Simeone Yanmeer Tyotswam,**
Department of Population, Reproductive Health and
Community Resource Management,
School of Public Health & Applied Human Sciences,
Kenyatta University,
Nairobi-Kenya

**ATTENTION: NOTICE OF FULL NAUTH HEALTH RESEARCH ETHICS COMMITTEE APPROVAL**

**RE: EFFECTS OF TARGETED HEALTH EDUCATION ON UPTAKE OF CONTRACEPTIVES AMONG WOMEN OF REPRODUCTIVE AGE IN NNEWI CITY, SOUTH-EAST NIGERIA**

This is to inform you that the research described in the submitted protocol, the consent form and other participant's information materials have been reviewed and full approval granted by NAUTHHREC.

The approval is for one year starting from 5th July, 2022 to 4th June, 2023. If there is delay in starting the research, please inform the Secretariat so that the date of the approval will be adjusted accordingly.

In multiyear research you are required to submit your annual report to Secretariat early in order to renew your approval and avoid disruption of the research.

You are required to comply with all institutional guidelines, rules and regulations and also ensuring that adverse events are reported promptly to the Secretariat.

You are not permitted to make changes in the research without prior notification and approval of the NAUTHHREC.

We reserve the right to conduct compliance visit to your research site without previous notification.

Please note that this approval is subject to revocation if you fail to adhere to these guidelines.

**Prof. Chisolum Okafor**
Chairman, NAUTHHREC

**Mrs. Rita C. Ikeanyionwu**
Sec., NAUTHHREC