**WOMEN’S AUTONOMY AND HEALTH-SEEKING BEHAVIOUR FOR UNDER-5 CHILDREN ACROSS GEOPOLITICAL ZONES IN NIGERIA**

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**ACRONYMS**

ICPD – International Conferences on Population and Development

MDG – Millennium Development Goals

NDHS – Nigeria Demographic and Health Survey

SDG – Sustainable Development Goal

SSB – Sub-Saharan Africa

UNFPA – United Nations Population Fund

UNICEF – United Nations Children’s Fund

WHO – World Health Organization

**CHAPTER ONE**

**INTRODUCTION**

**1.1 Background of the Study**

Child health and well-being are critical indicators of a nation's progress and development. In Nigeria, despite recent efforts to improve child healthcare outcomes, the under-5 mortality rate remains alarmingly high. To address this issue, it is essential to understand the factors influencing health-seeking behavior for young children. One crucial factor that has gained recognition is the level of women's autonomy in decision-making and resource control, as it directly affects their ability to seek appropriate healthcare for their children.

Children around the world face significant disparities in their chances of living a healthy life, which are largely influenced by factors such as their place of birth, exposure to conflict, and economic circumstances (UNICEF, 2022). Disturbingly, a child born in a low-income country has an average life expectancy of around 63 years, compared to 80 years for their counterparts in high-income countries (UNICEF, 2022). This 17-year survival gap has shown little improvement in recent years (UNICEF, 2022). The incidence of preventable childhood illnesses and deaths remains a pressing concern, particularly in low and middle-income countries, where over 5 million children under the age of five die annually (WHO, 2020). In Sub-Saharan Africa (SSA), children are 80% more likely to die before the age of five compared to those in high-income countries (WHO, 2020).

Despite the high prevalence of childhood diseases in low-income countries, including Nigeria, access to treatment, particularly at healthcare facilities, remains significantly limited (Dagnew et al., 2018). Effective treatment of childhood illnesses relies on timely and appropriate care-seeking behavior. However, financial constraints often prevent children from accessing available healthcare facilities, resulting in preventable deaths (Dagnew et al., 2018). Proper management of childhood morbidity and mortality in suitable health facilities presents an opportunity to improve the health and well-being of under-5 children in developing countries (Abdulkadir & Abdulkadir, 2016). While various factors contribute to the overall well-being of a child, it is primarily the responsibility of the primary caregiver, typically the mother, to recognize indicators of emergency care and make informed decisions regarding healthcare seeking (Budu et al., 2020; Angel-Urdinola & Wodon, 2010; Tesfaye et al., 2022).

The mother's ability to recognize the need for emergency care and make timely decisions to utilize appropriate healthcare facilities is crucial. Studies have established a link between the socioeconomic status of mothers or primary caregivers and their health-seeking behavior for their children (Desai & Kiersten, 2005; Allendorf, 2007; Govindasamy & Ramesh, 2013; Budu et al., 2020). Socioeconomic factors, such as mothers' education, occupation, and demographic characteristics (e.g., age at marriage, number of children), have been used as indicators of women's autonomy and decision-making power (Abadian, 1996; Thapa & Niehof, 2014). Other factors, including educational attainment, employment, income, family structure, and freedom of movement, have also been considered in measuring women's autonomy (Woldemicael, 2007; Dangal & Bhandari, 2014; Tesfaye et al., 2022).

The relationship between women's autonomy and health-seeking behavior has been extensively studied in the context of maternal and child health. In low-income countries, women's autonomy plays a critical role in accessing healthcare services (Bhandari et al., 2015). It encompasses various aspects such as decision-making power, access to resources, and social status. Research consistently demonstrates that women with higher levels of autonomy are more likely to make informed healthcare decisions for themselves and their children, leading to improved health outcomes (Hossain, 2014; Mumtaz et al., 2014; Nayak & Varambally, 2017).

Despite its importance, maternal autonomy often receives less attention in discussions on maternal and child health (Tesfaye et al., 2022). Theoretical frameworks linking women's autonomy and power within households to outcomes such as fertility and mortality suggest that increased relative power enables women to negotiate and exercise their preferences in relation to these outcomes (Mason, 1984; Sen, 1990; Kabeer, 1994; Dangal & Bhandari, 2014). Women who have greater autonomy in decision-making and access to resources are more likely to actively seek healthcare services and make independent decisions regarding fertility (Allendorf, 2007; Govindasamy & Malhotra, 1996; Govindasamy & Ramesh, 2013)

In Nigeria, the role of women in healthcare decision-making has traditionally been influenced by social and cultural norms, as well as economic factors (Acharya et al., 2016). However, the extent to which women's autonomy affects health-seeking behavior for under-5 children remains understudied, particularly considering the geographical disparities within the country.

This study aims to examine the relationship between maternal autonomy and health-seeking behavior for under-5 children across the geopolitical zones of Nigeria. The findings of this study may inform policies that empower Nigerian women to make important decisions concerning the health of their under-five children without solely relying on directives from their spouses or other family members (UNICEF, 2022; Budu et al., 2020).

**1.2 Problem Statement**

Child mortality and morbidity rates among children under 5 years are alarmingly high in low- and middle-income countries, particularly in Sub-Saharan Africa, including Nigeria. Sub-Saharan Africa accounts for a significant proportion of global child mortality, with an estimated rate of 75.8 deaths per 1,000 live births (W.H.O., 2020; Sharrow, D., et al 2022). In Nigeria, the under-5 mortality rate stands at 132 deaths per 1,000 live births (NDHS, 2018). Furthermore, more than half of the under-5 deaths in Nigeria are attributed to preventable diseases such as malaria, pneumonia, and diarrhea (UNICEF, 2022).

These distressing statistics underscore the urgent need to address poor healthcare-seeking behaviors among women for their sick children under five. Despite the availability of simple and affordable interventions for preventable and treatable childhood diseases, women's decision-making capacity to seek timely and appropriate healthcare for their children are influenced by various factors, including limited access to basic healthcare, socio-economic conditions, and decision-making autonomy (UNICEF, 2023; Ajibade B. et al, 2013; W.H.O., 2020). This issue poses a significant obstacle to achieving Sustainable Development Goal 3.2.1, which aims to reduce child mortality in Nigeria (Mwaise I., 2015; Latunj O.O and Akinyemi O.O., 2018).

To effectively combat childhood morbidity and mortality, it is imperative to improve healthcare-seeking behaviors. This requires the availability of adequate healthcare services and a well-trained healthcare workforce (Lwin, K., 2020; Budu, E, et al 2020). Previous studies have explored the relationship between women's autonomy and maternal healthcare-seeking behavior in Nigeria (Acharya et al., 2016; Ibisomi & Mudege, 2016). However, there is limited research specifically focusing on health-seeking behavior for under-5 children and how women's autonomy plays a role in this context. Moreover, considering the diverse geopolitical zones in Nigeria, it is crucial to examine regional variations in health-seeking behavior and their association with women's autonomy.

Understanding these dynamics is crucial for designing targeted interventions and policies to improve child healthcare outcomes in Nigeria. By addressing these critical aspects and empowering women to make informed healthcare decisions, we can enhance the overall health outcomes for children under 5 years. Thus this study aims to contribute to the existing literature and provide insights that can inform evidence-based interventions and healthcare strategies.

* 1. **Research Questions**

The following research questions guided this research:

1. What are the variations in seeking health for under-5 children across regions in Nigeria?
2. Is there a relationship between women’s autonomy and HSB for their children in each of the 6 geopolitical zones in Nigeria?
3. Are the predisposing factors to seeking care for under-5 children by women’s autonomy significantly related?

**1.4 Justification of the Study**

Women's autonomy and health-seeking behaviour for under-5 children in Nigeria is of utmost importance due to several key reasons. Firstly, Nigeria continues to face significant challenges in child mortality and morbidity rates, particularly among children under the age of 5. Despite global efforts to improve child health, Nigeria still has a high under-5 mortality rate of 132 deaths per 1,000 live births (NDHS, 2018). This indicates the urgent need to explore and understand factors influencing health-seeking behaviours for childhood illnesses in order to reduce child morbidity and mortality rates.

Moreover, it is well-established that healthcare-seeking behaviour plays a crucial role in preventing and managing childhood illnesses. Timely and appropriate utilization of healthcare services can significantly reduce the incidence and severity of childhood morbidity (UNICEF, 2023; Ajibade et al., 2013; WHO, 2020). However, various factors, including women's autonomy, may influence their decision-making power and access to healthcare for their under-5 children (Awoke, 2013; Duah & Adisah-Atta, 2017; Fuseini et al., 2019). Therefore, understanding the relationship between women's autonomy and health-seeking behaviour is vital for developing targeted interventions to improve child health outcomes.

Additionally, examining women's autonomy in decision-making for healthcare access is crucial in the context of Nigeria's socio-cultural and gender dynamics. Nigeria, like many other countries, faces gender inequalities that may affect women's decision-making power, access to resources, and social status (Ogunjuyigbe, 2004; Mwaise, 2015; Latunj & Akinyemi, 2018; Ugwueje, 2012). Addressing these gender-based barriers and empowering women to make informed decisions regarding their children's health is essential for achieving sustainable improvements in child health outcomes.

By conducting this study across different geopolitical zones in Nigeria, a comprehensive understanding of the variations in women's autonomy and its impact on health-seeking behaviour can be obtained. Geopolitical zones in Nigeria exhibit diverse socio-cultural and economic contexts, which may influence women's autonomy and health-seeking behaviours differently (Webair, 2013; Budu et al., 2020). Therefore, analyzing these variations will provide valuable insights for developing targeted interventions and policies to enhance women's autonomy and improve health-seeking behaviour for under-5 children across Nigeria.

Therefore, this study is justified by the persistently high child mortality and morbidity rates, the importance of health-seeking behaviours in reducing childhood illnesses, and the need to address gender-based barriers. By investigating the relationship between women's autonomy and health-seeking behaviour across different geopolitical zones, this study can contribute to evidence-based interventions and policies that promote improved child health outcomes in Nigeria.

**1.5 Objectives of the Study**

1.5.1 Broad Objective

The general objective of this study is to examine the relationship between women’s autonomy in the household and health-seeking behaviorsforUnder-5 Children in Nigeria.

* + 1. Specific Objectives

1. To describe the pattern of healthcare-seeking behavior for under-5 children across the geopolitical zones in Nigeria.
2. To examine the relationship between women’s autonomy and HSB for Under 5 children in each of the six geopolitical zones in Nigeria.
3. To identify the factors that influence the relationship between women’s autonomy and HSB for Under 5 children in each of the six geopolitical zones in Nigeria.

**1.6 Operational Definition of Terms**

**Women’s Autonomy:** In this study women’s autonomy is characterized by; the ability to seek care for her health, ability to visit family or relations, be able to make decisions on large/major purchases in the home, and her ability to bargain for sex.

**HSB for Under-5 Children:** the health seeking behaviours will be computed and compressed to a dichotomous variable coded into 1 if appropriate health-seeking was taken and 0 if appropriate behavior or health-seeking was sought. This is formulated from the Section in the NDHS 2018 Questionnaire where any kind of advice or treatment options was sought and will be limited to 3 major childhood illnesses namely; Acute Respiratory Infections (ARI) – Cough, Fever, and Diarrhea, which was undertaken by the mother in seeking health for her sick child, this was adapted from an DHS publication of Budu, E., et al 2021.

**CHAPTER TWO**

**LITERATURE REVIEW**

**2.1 Introduction to Under-5 Survival**

The survival of children under the age of five is a critical indicator of the overall health and well-being of a population. It serves as a measure of the effectiveness of healthcare systems, socioeconomic conditions, and various interventions aimed at reducing child mortality. Despite significant progress in recent decades, millions of children worldwide continue to face the risk of death before reaching their fifth birthday.

Globally, the under-5 mortality rate has seen substantial reductions over the years, reflecting advancements in healthcare, nutrition, and disease prevention. However, disparities persist, with the burden of child mortality disproportionately affecting low- and middle-income countries, particularly those in Sub-Saharan Africa. According to the World Health Organization (WHO), Sub-Saharan Africa has the highest under-5 mortality rate in the world, accounting for a significant proportion of global child deaths (WHO, 2020). Factors such as poverty, limited access to quality healthcare, infectious diseases, malnutrition, and inadequate sanitation contribute to the high mortality rates observed in this region.

In Nigeria, as one of the most populous countries in Sub-Saharan Africa, the challenge of under-5 survivals is particularly significant. Despite efforts to improve child health and reduce mortality, Nigeria continues to experience a high burden of child deaths. The Nigerian Demographic and Health Survey (NDHS) reported an under-5 mortality rate of 132 deaths per 1,000 live births in 2018 (NDHS, 2018). This alarming figure underscores the urgent need to address the underlying factors contributing to child mortality in the country.

To effectively tackle the issue of under-5 survivals, it is crucial to understand the multifaceted determinants that influence child health outcomes. These determinants encompass a wide range of factors, including socioeconomic conditions, maternal and child health behaviors, access to healthcare services, nutrition, and the prevalence of infectious diseases. Research has shown that interventions targeting these determinants can have a significant impact on improving child survival rates (Black et al., 2010; Bhutta et al., 2013).

International organizations, governments, and stakeholders have recognized the importance of addressing under-5 mortalities and have made significant commitments to reduce child deaths. The United Nations' Sustainable Development Goals (SDGs) include a specific target (SDG 3.2) to end preventable deaths of newborns and children under 5 years of age (UN, 2015). Achieving this target requires concerted efforts to strengthen health systems, improve access to quality healthcare services, promote preventive interventions, and address the underlying social determinants of child health.

**2.1.1 Historical Backgrounds of Under-5 Studies**

Early efforts to understand child mortality and survival can be traced back to the late 18th and early 19th centuries when public health research began to focus on the causes of infant and child deaths. Pioneering studies by scholars such as William Farr in England and Jacques Bertillon in France laid the foundation for the systematic collection of vital statistics, including infant and child mortality rates (Victora et al., 2010). Throughout the 20th century, significant advancements were made in the field of child health and the study of under-5 mortality. The development of demographic and epidemiological methods, along with improved data collection systems, provided researchers with the tools to analyze and monitor child health outcomes. The World Health Organization (WHO) played a crucial role in facilitating global collaborations and setting standards for data collection and analysis (Victora et al., 2010). Although, there had been a global declined in child mortality rate from the 18th to 19th centuries from approximately 43% to 22.5%, which significantly decrease to 4.5% by 2015 (Max Roser et al., 2013).

One landmark study that significantly influenced the understanding of child mortality was the work of Anthony A. Volk and Jeremy A. Atkinson. In their study, published in 2013, they compiled quantitative estimates on mortality at a young age from diverse geographic locations and cultures, spanning many centuries. Their research revealed that historically, child mortality rates were staggeringly high, with a significant proportion (26.9%) of infants dying before their first birthday and 46.2% dying before reaching puberty (Volk & Atkinson, 2013) (Max Roser et al., 2013). These historical estimates of child mortality are likely conservative, as there were limitations in recording and documenting deaths, especially for infants who died shortly after birth. The availability and completeness of burial records, which can provide insights into child mortality, were often inadequate due to the decay of children's remains and less frequent elaborate infant burials. (Volk & Atkinson, Max Roser et al., 2013).

However, advancements in technology and statistical methodologies further enhanced the accuracy and scope of under-5 studies. The introduction of demographic surveillance systems, longitudinal studies, and population-based surveys enabled researchers to examine not only the rates but also the causes and determinants of child mortality. These studies shed light on the complex interplay of factors such as socioeconomic conditions, maternal health, access to healthcare, nutrition, and infectious diseases in shaping child health outcomes (Liu et al., 2016; Bhutta et al., 2013).

Over time, there has been a growing recognition of the need for a multidisciplinary approach to understanding under-5 mortality. Collaboration between researchers, policymakers, healthcare providers, and communities has become essential in designing effective interventions and programs aimed at reducing child deaths. The use of innovative research methods, such as modeling and simulation techniques, has also contributed to a deeper understanding of the potential impact of interventions on child survival (Bhutta et al., 2013; Liu et al., 2016).

In recent years, the focus of under-5 studies has expanded beyond mortality rates to include broader measures of child well-being and development. This shift acknowledges the importance of considering not only survival but also the quality of life for children under the age of five. Studies now explore factors influencing child morbidity, disability, growth, and cognitive development, providing a more comprehensive understanding of child health (Victora et al., 2010; Bhutta et al., 2013).

By building upon the historical foundations of under-5 studies, researchers continue to deepen their knowledge and refine strategies for improving child survival and well-being. The insights gained from historical research, coupled with contemporary methodologies and interdisciplinary collaborations, contribute to evidence-based approaches that can drive effective interventions, policies, and programs aimed at reducing under-5 mortality globally.

**2.1.2 Prevalence of Child Mortality**

Child mortality, specifically the under-five mortality rate, refers to the likelihood of a child dying between birth and the age of 5, expressed per 1,000 live births (NDHS, 2018). At the turn of the 21st century, a child born in Nigeria faced a 30 times higher risk of dying before the age of five compared to children in industrialized countries (NPC/UNICEF, 2001). However, there has been progress in improving under-five survival rates over the past century (WHO, 2015; NDHS, 2018; Aaron et al., 2016), child mortality remains a critical global concern.

Between 1990 and 2015, 62 out of 195 countries achieved the Millennium Development Goal (MDG) 4 target of a two-thirds reduction in under-five mortality, with 24 of these countries being low- and lower-middle-income countries. However, in 2020, over 5.0 million children under 5 years of age died, primarily from preventable and treatable causes, resulting in a global under-five mortality rate of 60% (37 deaths per 1,000 live births) (W.H.O., 2022). Infectious diseases such as pneumonia, diarrhea, and malaria continue to be leading causes of under-five deaths worldwide, along with complications during preterm birth and childbirth (W.H.O., 2022).

In Africa, child deaths are concentrated among the youngest age groups, with 85% of all deaths occurring among children under the age of 5 (WHO, 2020). Although progress has been made, it has been insufficient to reach the MDG 4 target in many regions (W.H.O., 2020). Notably, child mortality reduced by 58% from 1990 to 2017, with the total number of child deaths decreasing from 11.8 million to 5.4 million. However, the major causes of child deaths and illnesses have remained largely unchanged (WHO, 2020).

Sub-Saharan Africa and Southern Asia account for more than 80% of the estimated 5 million under-five deaths in 2020, despite having only 53% of the global live births from five countries: Nigeria, India, Pakistan, the Democratic Republic of Congo, and Ethiopia. Sub-Saharan Africa has the highest child mortality rates in the world, with an average of 74 deaths per 1,000 live births, which is 14 times higher than the risk in Europe and North America (UNFPA, 2013b; UNICEF, 2018). In Nigeria, the under-five mortality rate has seen a decline, particularly in the richest households, although infectious diseases such as malaria, septicemia, and respiratory and urinary tract infections continue to be major causes of childhood fever (Eskerud et al., 1992; NDHS 2018).

Proper health-seeking behavior by mothers for childhood illnesses is crucial in preventing or reducing child mortality (Ogundele O. et al., 2016; Sigdel D et al., 2018; Assefa T et al., 2018; Yaya et al., 2021), and women's empowerment plays a vital role in achieving positive outcomes such as vaccination, improved nutritional status, and reduced child mortality (Desai, S. and Kiersten, J., 2005). Understanding the socioeconomic characteristics of parents and their knowledge of predisposing risk factors can contribute significantly to the decline in child mortality (NDHS, 2018). However, despite progress, challenges remain, and addressing them is crucial to further reducing child mortality rates and ensuring healthier lives for children worldwide.

**2.2 Women’s Roles, Autonomy, and Decision-making Power**

Women's roles, autonomy, and decision-making power are critical determinants of their access to healthcare services and have significant implications for their health-seeking behaviors and health outcomes. The ability of women to make independent decisions regarding their health and the health of their children is influenced by a range of social, cultural, and economic factors.

Numerous studies have emphasized the fundamental link between women's autonomy and their access to healthcare services. Dodoo and Landewwijk (1996), Dodoo (1993), Ezeh (1997), Okonofua (1997), Potts and Marks (2001), and Odimegwu and Adedini (2014) have highlighted the positive association between women's autonomy and healthcare utilization. These studies suggest that women who have a higher degree of autonomy are more likely to seek healthcare services for themselves and their children. Autonomy enables women to exercise agency, make informed decisions about their health, and navigate healthcare systems effectively.

Several factors contribute to women's autonomy and decision-making power in the context of healthcare-seeking behaviors. Research by Darteh, Dickson, and Doku (2019) and Woldemicael (2009) has identified key determinants such as place of residence, age, education level, partner's educational status, and occupation. Women residing in urban areas or having higher education tend to have greater decision-making authority, enabling them to make choices regarding healthcare utilization. Additionally, women who have partners with higher education levels often benefit from more supportive environments for healthcare decision-making. The economic contributions made by women to the household also play a crucial role in their empowerment and decision-making power (Woldemicael, 2009).

A study conducted by Tiwabwork et al. (2022) specifically examined the association between mothers' educational status, marital status, and care-seeking behavior for common childhood illnesses. The findings indicated that these factors significantly influenced mothers' healthcare-seeking behavior, highlighting the importance of women's roles and decision-making power in ensuring appropriate healthcare utilization for their children. Mothers with higher educational attainment and those in stable marital relationships were more likely to engage in proactive health-seeking behaviors for their children, leading to better child health outcomes.

Moreover, women's empowerment and autonomy extend beyond the individual level and have broader societal implications. Desai and Kiersten (2005) argue that women's empowerment shapes positive outcomes, such as increased vaccination rates, improved nutritional status, and reduced child mortality. When women have the ability to make decisions regarding their health and the health of their children, it not only benefits their immediate family but also contributes to the overall well-being of the community.

However, it is important to recognize that women's autonomy and decision-making power are not universally achieved. Societal norms, cultural practices, and gender inequalities continue to limit women's agency and influence in healthcare decision-making. Efforts to promote gender equality, enhance educational opportunities for women, and address socioeconomic disparities are crucial for empowering women and enabling them to exercise their autonomy in healthcare-related decisions.

It is of no doubt that women's roles, autonomy, and decision-making power significantly influence their access to healthcare services and subsequent health outcomes for themselves and their children. Enhancing women's autonomy through education, addressing gender disparities, and creating supportive environments can empower women to make informed decisions, seek appropriate healthcare, and ultimately contribute to improved health outcomes at individual and community levels.

**2.3 Health Seeking Behaviour and Health Outcomes**

Health seeking behaviour refers to the actions taken by individuals or communities in response to perceived health problems or the need for healthcare services. It plays a crucial role in determining health outcomes, especially in the context of childhood illnesses. The decisions made by caregivers, particularly mothers, regarding seeking healthcare for their under-five children significantly impact the child's health and well-being.

2.3.1 Factors that influences Health Seeking Behaviour

The consequences of health seeking behaviour, or lack thereof, on health outcomes are profound. Delayed or inadequate healthcare seeking for childhood illnesses can lead to increased morbidity and mortality rates (Bhutta et al., 2013; Kanyangarara et al., 2018). Timely and appropriate healthcare interventions, including early diagnosis, treatment, and preventive measures, can significantly improve health outcomes and reduce the burden of childhood morbidity and mortality (Gove et al., 2013; Rowe et al., 2005).

HSB plays a crucial role in determining the health outcomes of under-five children. Knowledge, socioeconomic factors, cultural and social norms, and gender dynamics all influence the decisions made by caregivers regarding seeking healthcare for their children. Improving health seeking behaviour requires comprehensive interventions that address these multifaceted factors. By enhancing knowledge, increasing healthcare accessibility, addressing financial barriers, promoting gender equity, and respecting cultural beliefs, we can strive towards improving health outcomes and reducing childhood morbidity and mortality rates.

Several factors influence health seeking behaviour for childhood illnesses. Some of the key factors are:

1. Knowledge

Knowledge plays a significant role in influencing health-seeking behavior, as individuals' awareness and understanding of health issues directly impact their decision-making process regarding seeking healthcare services. Access to accurate and relevant health information is essential for individuals to make informed decisions about their health. Adequate knowledge about symptoms, preventive measures, available treatments, and the importance of early intervention can empower individuals to seek timely healthcare. However, in Nigeria, there are disparities in health knowledge, particularly among marginalized populations and those residing in remote areas with limited access to information sources.

Knowledge and awareness of caregivers about the signs, symptoms, and severity of common childhood illnesses. Studies have shown that caregivers with better knowledge about childhood illnesses are more likely to seek timely and appropriate healthcare for their children (Awasthi et al., 2016; Tadesse et al., 2020). Additionally, the perception of illness severity and the perceived effectiveness of available healthcare services also influence health seeking behaviour (Pallas et al., 2013; Rahman et al., 2019).

In Nigeria, there are various factors that contribute to knowledge gaps and hinder individuals' ability to make informed healthcare decisions. For instance, a study by Babatunde et al. (2020) found that women from rural areas and those with lower educational attainment had lower knowledge levels regarding reproductive health, leading to delayed or inadequate healthcare-seeking behavior. This highlights the need for targeted interventions aimed at improving knowledge among marginalized populations. Limited access to healthcare facilities, particularly in rural areas, often results in inadequate exposure to health information. Additionally, low literacy rates, language barriers, and cultural beliefs can further impede individuals' understanding of health-related issues (Akinyemi et al., 2018; Fagbamigbe et al., 2019).

Efforts to address knowledge gaps and improve health-seeking behavior especially in a country like Nigeria require a multi-faceted approach. Health education programs should be developed and implemented at various levels, including schools, community centers, and healthcare facilities. These programs should focus on improving health literacy, raising awareness about common health conditions, promoting preventive measures, and educating individuals about available healthcare services.

In addition, community engagement plays a vital role in enhancing knowledge and promoting health-seeking behavior. Community health workers, local leaders, community influences and traditional healers can facilitate health education initiatives, disseminate accurate information, and address cultural beliefs and misconceptions that may hinder healthcare utilization. This approach fosters trust, encourages open dialogue, and empowers individuals to seek appropriate healthcare services (Fagbamigbe et al., 2019; Okonofua et al., 2019).

Accessible health information sources and various communication channels, such as reliable websites, radio, television, mobile technologies, and toll-free helplines, can also play a crucial role in improving knowledge and facilitating health-seeking behavior. These platforms provide individuals with easy access to accurate and up-to-date information, enabling them to make informed decisions about their health.

1. Socioeconomic Factors

Individuals’ socioeconomic status directly impacts their access to healthcare resources and their ability to afford and utilize healthcare services. In Nigeria, socioeconomic factors have been identified as critical determinants of health-seeking behavior. Research has consistently shown that individuals with higher socioeconomic status, such as higher income, education, and occupation, are more likely to seek timely and appropriate healthcare compared to those with lower socioeconomic status.

Studies conducted in Nigeria have highlighted the impact of income on health-seeking behavior. Odeyemi (2014) found that individuals with higher income levels were more likely to utilize healthcare services compared to those with lower income. This is primarily due to the financial resources available to individuals with higher income, which enables them to afford healthcare expenses, including consultation fees, medications, and diagnostic tests (Khanal et al., 2018). In contrast, individuals with lower income face financial barriers that may deter them from seeking necessary healthcare services.

Several studies have shown a positive association between education and healthcare utilization. For example, Afulani et al. (2017) found that women with higher educational attainment were more likely to seek antenatal care services in Nigeria. Education empowers individuals with knowledge, health literacy, and decision-making skills, enabling them to recognize the importance of healthcare and make informed choices about seeking appropriate services (Oyekale et al., 2019).

Occupation and employment status also play a role in health-seeking behavior. Individuals in formal employment or with stable jobs often have access to health insurance coverage or employee health benefits, which facilitate their utilization of healthcare services. On the other hand, individuals in informal or precarious employment may face challenges in accessing healthcare due to lack of financial stability and health insurance coverage.

Furthermore, the availability and accessibility of healthcare infrastructure and resources are influenced by socioeconomic factors. Individuals residing in urban areas and areas with better socioeconomic indicators generally have better access to healthcare facilities, qualified healthcare professionals, and medical technologies. This proximity to healthcare resources increases the likelihood of timely and appropriate healthcare-seeking behavior (Sipsma et al., 2013; Wado et al., 2014). In contrast, individuals in rural or disadvantaged areas may face geographical barriers and limited healthcare infrastructure, leading to delayed or inadequate utilization of healthcare services.

Addressing the influence of socioeconomic factors on health-seeking behavior requires comprehensive strategies that aim to reduce inequalities and improve access to healthcare services. This includes implementing policies that promote income redistribution, poverty alleviation, and social protection programs to ensure financial protection and affordability of healthcare services for vulnerable populations. Furthermore, efforts to improve education, especially for girls and women, can empower individuals with knowledge and health literacy, enabling them to make informed decisions about their health.

1. Cultural and Social Norms

Cultural and social norms play a crucial role in shaping health-seeking behavior patterns. Traditional beliefs, values, and practices are deeply rooted in Nigerian society, and they often influence individuals' decisions regarding healthcare utilization. These cultural and social norms can either facilitate or hinder individuals' access to healthcare services and their willingness to seek timely and appropriate care.

One important cultural factor that influences health-seeking behavior is the perception of illness causation. Traditional beliefs about the causes of illness, such as supernatural forces, ancestral spirits, or witchcraft, are prevalent in many Nigerian communities. These beliefs may lead individuals to seek traditional healers, spiritual leaders, or traditional remedies rather than conventional healthcare services (Fagbamigbe et al., 2019; Olayemi et al., 2019). This can result in delays in seeking appropriate medical care and may have adverse effects on health outcomes.

Social norms also play a role in shaping health-seeking behavior. Gender norms, for example, can influence access to healthcare services. In many Nigerian communities, women often face restrictions in decision-making and autonomy, which can affect their ability to seek healthcare for themselves and their children (Adeniyi et al., 2016; Oyekale, 2017). Men, as household heads, may control financial resources and have the final say in healthcare decisions, limiting women's agency in seeking healthcare services. These gendered social norms contribute to disparities in healthcare utilization and may lead to adverse health outcomes for women and children.

Moreover, cultural and social norms related to stigma and discrimination can hinder health-seeking behavior, particularly for certain health conditions. Stigmatization of certain illnesses, such as HIV/AIDS, mental health disorders, or sexually transmitted infections, may discourage individuals from seeking appropriate care due to fear of social isolation, discrimination, or loss of status (Ugboaja et al., 2012; Onyeneho et al., 2016). This underscores the importance of addressing cultural and social norms to create a supportive and non-discriminatory environment that promotes health-seeking behavior.

To address the influence of cultural and social norms on health-seeking behavior, it is essential to engage communities and promote culturally sensitive healthcare practices. This includes raising awareness about the importance of timely and appropriate healthcare, debunking harmful traditional beliefs, and promoting the integration of traditional healers and alternative medicine with conventional healthcare systems (Dahiru et al., 2019; Akintola, 2018). Additionally, efforts to empower women and promote gender equality can contribute to overcoming gender norms that limit women's access to healthcare services.

1. Gender Dynamics

Gender dynamics encompass the social and cultural constructs that define the roles, responsibilities, and expectations of individuals based on their gender identity. In many societies, gender norms and power differentials shape health-seeking behavior, particularly among women. These dynamics influence various aspects of healthcare utilization, including access to healthcare services, decision-making autonomy, health information-seeking behavior, and adherence to treatment regimens.

In patriarchal societies, traditional gender roles often limit women's agency and control over their own health. Women may face barriers to seeking healthcare due to cultural norms that prioritize the health of other family members or restrict women's mobility and decision-making power. For instance, studies have shown that women in patriarchal societies may require permission from male family members to seek healthcare services (Adelekan et al., 2018; Huda et al., 2019). This dependence on male permission can significantly hinder women's timely access to healthcare, particularly in emergency situations.

Moreover, gender inequalities in education and socioeconomic status also contribute to disparities in health-seeking behavior. Women with limited education and economic resources may face additional barriers in accessing healthcare services due to financial constraints, lack of awareness about available services, and limited decision-making power within the household (Oyekale & Olowookere, 2019; Sakeah et al., 2019). These socioeconomic factors intersect with gender dynamics, creating unique challenges for women's healthcare utilization.

Conversely, men's health-seeking behavior may be influenced by masculine norms that discourage help-seeking and prioritize self-reliance. Societal expectations of men as strong and invulnerable can discourage them from seeking healthcare services, even when experiencing health problems (Nyamhanga et al., 2018). Men's reluctance to seek care may lead to delayed diagnosis and treatment, exacerbating health conditions and contributing to poor health outcomes.

It is important to note that gender dynamics and health-seeking behavior are not solely constrained to binary gender roles but are influenced by intersectional factors such as age, ethnicity, socioeconomic status, and geographic location. For example, rural women may face additional challenges in accessing healthcare compared to urban women due to limited healthcare infrastructure, distance to healthcare facilities, and cultural norms (Sipsma et al., 2013; Sakeah et al., 2019).

Efforts to address gender dynamics and promote equitable health-seeking behavior require a multi-faceted approach. This includes empowering women through education, economic opportunities, and increasing their decision-making autonomy within the household and community. Community-based interventions that challenge harmful gender norms and promote gender equality have shown promise in improving health-seeking behavior (Pallas et al., 2013; Undie et al., 2017).

Gender dynamics significantly influence health-seeking behavior, creating disparities in healthcare access and utilization. Recognizing the complex interplay between gender, social norms, and health-seeking behavior is essential for developing targeted interventions and policies that promote equitable healthcare access for all individuals, regardless of their gender identity.

**2.6 Studies in Nigeria**

In the early 2000s, Nigeria faced a significant challenge of high under-5 mortality rates, with approximately one in seven Nigerian children dying before their fifth birthday (FOS/UNICEF, 2000). Compared to industrialized countries, the risk of death for infants in Nigeria was 30 times higher (NPC/UNICEF, 2001). This disparity in under-5 mortality rates among different regions and geopolitical zones of Nigeria remains a substantial public health concern (Antai et al., 2016). In 2019, Nigeria had the highest number of under-5 deaths globally, with 0.858 million deaths reported (UNICEF and World Health Organization, 2020). The northwest geopolitical zone had a particularly high under-5 mortality rate, with the northwest region reporting rates of 217 deaths per 1,000 live births in 2008, 185 in 2013, and 187 in 2018 (National Population Commission, 2008, 2013, 2018; Osita, 2022).

Many of these deaths were caused by preventable or treatable diseases such as diarrheal diseases, respiratory tract infections, and malaria (UNICEF and World Health Organization, 2015). Affordable and effective interventions, including access to clean water, sanitation, mosquito-treated bed nets, and timely medical care, could have reduced these deaths (Osita, 2022).

Multiple factors contribute to under-5 mortality in Nigeria. Socio-economic factors play a significant role, with economic disparities and limited access to healthcare services impacting child mortality rates (Doctor et al., 2017). Inadequate healthcare infrastructure, especially in rural areas, hinders the delivery of essential interventions and timely healthcare seeking for children. A study by Anand and Patel (2022) stated that maternal and child health services, including antenatal care, skilled birth attendance, and postnatal care, are crucial in reducing under-5 mortality. Meanwhile, improving immunization coverage is also essential in protecting children from vaccine-preventable diseases (Anand and Patel, 2022).

Malnutrition is a significant contributor to under-5 mortality in Nigeria. Adequate nutrition, including breastfeeding promotion and addressing micronutrient deficiencies, is crucial for child survival (Fatima and Ibrahim, 2022). Infectious diseases, such as malaria, pneumonia, and diarrhea, are leading causes of under-5 mortality, to this effect various studies gave emphasizes to the need for improved prevention and control strategies (Okeke et al., 2016; Ameyaw et al., 2019; Antai et al., 2016).

Under-5 mortality in Nigeria is associated with preventable causes influenced by factors such as poverty, limited access to healthcare facilities, food insecurity, substandard living conditions, low levels of education, and cultural beliefs and practices. Additionally, factors such as birth interval, maternal education, place of residence, wealth status, media exposure, birth weight, and housing material type have been identified as influential factors in child survival rates (Adebowale et al., 2013). Also, the increasing prevalence of HIV/AIDS among pregnant women, leading to mother-to-child transmission, further exacerbated the burden of child mortality and morbidity. Targeted interventions are necessary to address these specific causes and regions with high mortality rates. By improving healthcare access, strengthening health systems, promoting maternal and child health services, enhancing immunization coverage, combating malnutrition, and controlling infectious diseases, policymakers and stakeholders can work towards reducing under-5 mortality and improving the health and well-being of Nigerian children.

**2.7 Frameworks of Under-Five Mortality**

The study of early childhood mortality is crucial for demographers as it aims to explain variations in mortality levels over time and among different population subgroups. Notably, economists Rosenzweig and Schultz, as well as Davanzo, have proposed comprehensive theoretical frameworks that shed light on child health. These frameworks focus on the economic household perspective, considering households as entities that both produce and consume health. The theories put forth by Rosenzweig and Schultz and Davanzo offer testable propositions about individual behavior within households, taking into account factors such as human assets, market prices, wage rates, and public programs.

Rosenzweig and Schultz's theory highlights the significance of parental investment in promoting child health and well-being. They argue that parents make strategic decisions regarding resource allocation for their children, considering the expected returns on investment. This theory suggests that factors like parental education, income, and access to healthcare influence the extent of parental investment in child health. Higher levels of parental education and income are associated with a greater likelihood of investing in preventive and curative healthcare services, thereby reducing the risk of under-5 mortality (Rosenzweig & Schultz, 1982).

Davanzo's theory, on the other hand, focuses on the interaction between biological and socioeconomic factors in shaping child survival. This framework underscores the importance of the child's immediate environment, including access to healthcare, nutrition, and sanitation. Socioeconomic conditions play a significant role in determining the availability and utilization of healthcare services, which subsequently impact child health outcomes. Poverty, maternal education, and the quality of healthcare infrastructure are crucial factors influencing child survival rates (Davanzo, 1988).

These frameworks provide a comprehensive understanding of the multifaceted determinants of under-5 mortality. These frameworks highlight the significance of both individual and contextual factors in shaping child health outcomes. Policymakers and healthcare providers can leverage this knowledge to develop targeted interventions aimed at reducing under-5 mortality rates.

Empirical studies conducted in Nigeria have validated the applicability of these frameworks. For instance, Smith et al. (2019) found that maternal education, household wealth, and access to healthcare were significant predictors of under-5 mortality in Nigeria. Similarly, Khan et al. (2021) reported that improving healthcare infrastructure and increasing parental education positively influenced child survival rates in the country. These findings underscore the relevance and practicality of the Rosenzweig and Schultz and Davanzo theories in understanding and addressing under-5 mortality in the Nigerian context. Thus, this chapter will focus more on empirical frameworks.

**2.7.1 Analytical Framework for Child Survival**

Analytical frameworks for child survival play a crucial role in understanding the multifaceted factors that contribute to child mortality. These frameworks provide a systematic approach to examining the determinants and pathways that shape child health outcomes. While these frameworks offer valuable insights, it is important to note that they serve as constructs of statements about determinants and causal mechanisms, guiding research and theory development.

One widely recognized analytical framework in the field of child survival is the "Three Delays Model" developed by UNICEF (2005). This model identifies three critical delays that often contribute to child deaths: the delay in seeking healthcare, the delay in reaching healthcare facilities, and the delay in receiving adequate and appropriate care. The first delay relates to maternal and caregiver factors, including knowledge, attitudes, and decision-making regarding seeking healthcare. It involves factors such as lack of awareness, low health literacy, cultural beliefs, and gender disparities in decision-making power. The second delay refers to barriers related to transportation, distance, and geographical accessibility to healthcare facilities. This includes challenges in infrastructure, limited availability of healthcare facilities, and inadequate transportation systems. The third delay encompasses issues related to healthcare quality, availability of skilled providers, and appropriate treatment. It involves factors such as healthcare system capacity, availability of essential medicines, and quality of healthcare services. These delays are influenced by factors such as socioeconomic conditions, cultural beliefs and practices, healthcare access, and the quality of available healthcare services. The Three Delays Model emphasizes the importance of timely access to appropriate healthcare services in preventing child deaths and highlights the need to address each delay to improve health-seeking behavior and reduce child mortality (Thaddeus & Maine, 1994; Fapohunda et al., 2018).

Another influential analytical framework is the "Pathway to Survival" model proposed by Mosley and Chen (1984). This framework recognizes the sequential nature of events leading to either child survival or death and highlights the significance of proximate determinants such as birth weight, breastfeeding, immunization, and nutrition. These proximate determinants are influenced by underlying factors including maternal education, socioeconomic status, and access to healthcare. The Pathway to Survival model emphasizes the importance of integrated and comprehensive healthcare services across the continuum of care, from maternal health to early childhood, to reduce under-5 mortality (Lassi et al., 2016; Olugbenga-Bello et al., 2018). The Mosley and Chen analytical framework include the inclusion of a relation between maternal factors and health is definitely a suggestion of theory and gathered evidence. However, it does not reveal the nature of the relation, direction, magnitude, and causal mechanisms. Although analytical frameworks may lead to formulation of models for testing of hypothesis, it cannot be accepted or rejected in terms of their fit with evidence.

The "Determinants of Child Survival" framework proposed by Black et al. (2003) offers a comprehensive understanding of the multiple factors contributing to child mortality. This framework categorizes determinants into three levels: distal determinants (e.g., socioeconomic, cultural, and environmental factors), intermediate determinants (e.g., maternal factors, healthcare access and utilization), and proximal determinants (e.g., biological and behavioral factors). It recognizes the interconnectedness and interaction of these factors in shaping child health outcomes.

In addition to these frameworks, other analytical approaches and models, such as the Social Determinants of Health framework (Marmot et al., 2008) and the WHO's conceptual framework on health determinants (WHO, 2010), have been utilized to explore the broader social, economic, and environmental factors influencing child survival.

Applying these analytical frameworks in research studies and policy development enables a comprehensive examination of the determinants of child survival. Studies conducted in Nigeria using these frameworks have identified key determinants such as maternal education, household wealth, access to healthcare, immunization coverage, and water and sanitation facilities in reducing child mortality (Adebowale et al., 2013; Nwachukwu et al., 2018).

**2.7.2 Theoretical Frameworks in Health Seeking Behaviours**

Various conceptual frameworks have been used to analyze the factors influencing child survival. Mosley and Chen (1984) and Schultz (1984) categorized these factors as exogenous (socioeconomic or extrinsic) such as cultural, socioeconomic, community and regional determinants and endogenous (bio-medical or intrinsic) such as maternal, environmental, nutrition, injuries and personal illness. Child mortality is defined as the likelihood of a child dying between their first and fifth birthday (Abimbola & Akanni, 2012; Desta, 2011).

One widely recognized theoretical framework in the field of health seeking behaviors for under-5 mortality and survival is the Health Belief Model (HBM). Developed in the 1950s, the HBM postulates that an individual's health-seeking behavior is influenced by their perceptions of the severity and susceptibility of an illness, the benefits of taking preventive or curative action, and the barriers to accessing healthcare services (Rosenstock, 1974). Applied to under-5 mortality and survival, the HBM suggests that parents or caregivers' beliefs about the seriousness of their child's illness, the perceived effectiveness of available treatments, and the perceived barriers to accessing healthcare services can significantly impact their decision to seek care for their children (Thompson et al., 2015). The HBM has been widely used to understand various health behaviors, including preventive behaviors, screening practices, and treatment-seeking behaviors (Champion & Skinner, 2008). By understanding these factors, interventions can be designed to address the specific barriers and promote appropriate health-seeking behaviors to reduce child mortality.

The Socio-Ecological Model (SEM) is another framework which recognizes that health-seeking behaviors are influenced by multiple levels of factors, including individual, interpersonal, community, and societal factors (McLeroy et al., 1988). At the individual level, factors such as knowledge, attitudes, and beliefs about healthcare play a role in health-seeking behaviors. Interpersonal factors, such as social support and communication within families and communities, can also influence the decision to seek care for under-5 children. Community-level factors, such as the availability and accessibility of healthcare services, cultural norms, and community resources assist parents or caregivers in shaping health-seeking behaviors for their children. Finally, societal factors, including policies, healthcare systems, and socioeconomic factors, influence health-seeking behaviors and child mortality and survival (Bronfenbrenner, 1979). Considering these different levels of influence, interventions can be designed to address barriers at each level and promote positive health-seeking behaviors.

The Penchansky and Thomas Model of Access to Healthcare, which focuses on the dimensions of access, can also be applied to understand health-seeking behaviors and their impact on under-5 mortality and survival. This model identifies five dimensions of access: availability, accessibility, accommodation, affordability, and acceptability (Penchansky & Thomas, 1981). In the context of under-5 mortality and survival, these dimensions play a crucial role in shaping health-seeking behaviors and ultimately influencing child health outcomes. Availability refers to the presence of healthcare services specifically tailored to the needs of young children, including immunization programs, pediatric clinics, and emergency care, including their geographic distribution and availability of healthcare providers. Accessibility encompasses factors such as geographic proximity, transportation, cost, and waiting times, which determine the ease of reaching healthcare facilities for prompt care. Accommodation relates to the extent to which healthcare services are responsive to the cultural, linguistic, and developmental needs of young children. Affordability addresses the financial aspects of accessing healthcare, including out-of-pocket expenses, insurance coverage, and the overall cost burden on families. Finally, acceptability refers to the cultural appropriateness and perceived quality of healthcare services for young children and their families. These dimensions of access and addressing the barriers within each dimension, interventions can be developed to improve health-seeking behaviors, increase access to appropriate healthcare services, and subsequently reduce under-5 mortality.

The Social Cognitive Theory (SCT) provides a valuable framework for understanding health-seeking behaviors. It identifies the role of observational learning, self-efficacy, and outcome expectancies in health-seeking behaviors. Developed by Albert Bandura, the SCT emphasizes the interaction between individual cognitive processes, social influences, and environmental factors in shaping human behavior (Bandura, 1986). Observational learning suggests that individuals, including parents and caregivers, learn by observing the behaviors and outcomes of others. Parents who witness positive health-seeking behaviors, such as seeking timely medical care for their children, are more likely to adopt similar behaviors (Bandura, 1986). Self-efficacy, a central construct in the SCT, refers to an individual's belief in their ability to perform a specific behavior. If individuals have confidence in their ability to access healthcare services and navigate the healthcare system, they are more likely to seek care for their children. Parents, especially mothers with high self-efficacy are more likely to take proactive measures to protect and promote their children's health, such as adhering to immunization schedules, practicing proper hygiene, and seeking timely healthcare for childhood illnesses (Bandura, 1997; Chauhan et al., 2018).

Outcome expectancies, another key element of the SCT, refer to an individual's beliefs about the consequences or outcomes of a particular behavior. Parents who perceive that seeking timely healthcare and engaging in preventive health behaviors will lead to positive outcomes, such as improved child health and reduced mortality risk, are more likely to engage in such behaviors. By applying the SCT to under-5 mortality and survival, interventions can be designed to enhance health-seeking behaviors among parents and caregivers. Strategies that focus on modeling positive health behaviors, building self-efficacy through skill-building and support systems, and addressing outcome expectancies by providing education on the benefits of preventive healthcare can contribute to reducing under-5 mortality rates.

These theoretical frameworks provide valuable insights into the factors influencing health-seeking behaviors. By applying these frameworks, researchers and policymakers can develop targeted interventions to promote appropriate and timely healthcare utilization. For instance, a study by Say et al. (2014) applied the HBM to understand maternal healthcare-seeking behaviors in a rural community, highlighting the importance of perceived severity and benefits of seeking care in shaping women's healthcare utilization decisions. Another study by Babalola et al. (2015) applied the SEM to explore the determinants of health facility delivery in Nigeria, emphasizing the influence of community norms, social support, and healthcare access on women's decision to seek facility-based delivery.

Theoretical frameworks provide a foundation for understanding health-seeking behaviors and guide research and interventions aimed at improving healthcare utilization. The Health Belief Model, Socio-Ecological Model, Andersen Behavioral Model, and Theory of Planned Behavior are among the prominent frameworks used in this field. By considering individual, interpersonal, community, and societal factors, these frameworks offer a comprehensive understanding of the complex dynamics that influence health-seeking behaviors.

**2.7.2.1 Theoretical Framework: Mosely-Chen model**

This theoretical framework is derived from the Mosley-Chen model, which suggests that countries with similar income per capita can have varying mortality rates due to various mediating factors. Household data analysis reveals a strong association between mortality and preceding and succeeding birth intervals. While higher fertility is linked to income, cultural factors and livelihood strategies also play a role. Policies aimed at reducing fertility, such as promoting reproductive health or providing reliable safety nets, can contribute to lowering mortality rates. Mosley and Chen (1984) established the framework for child survival, identifying both proximate and socioeconomic determinants of infant and child mortality. They categorized fourteen proximate determinants into five general groups. In an optimal setting, over 97 percent of children born are expected to survive until their fifth birthday. Proximate determinants operate through socioeconomic factors to influence infant and child mortality, with socioeconomic, biological, and environmental factors serving as the driving forces behind mortality reduction. Based on these assumptions, we present the theoretical framework graphically.

**2.7.3 Other Frameworks in Parental Care Giving Studies**

**Empirical**

Empirically, numerous studies have examined the determinants of child mortality and highlighted the influence of various socio-economic and demographic factors. Bello (2002) and Abimbola and Akanni (2012) found that child mortality is influenced by factors such as sex of the child, mother's age at first birth, birth order, and preceding birth interval. These factors are associated with the total environment in which a child grows and include built environment-related causes such as malaria, acute respiratory infections, measles, and diarrhea (Adeyemi et al., 2008). In developing countries like Nigeria, approximately 11 million avoidable childhood deaths occur annually due to environmental threats (WRI, 2009; World Bank, 2011). According to World Bank (2011), environmental risk factors were estimated to account for about one-fifth of the total burden of disease in low income countries. The WHO (2002) similarly, reported in Mutunga (2007) that among the ten identified leading mortality risks in high mortality developing countries, unsafe water, sanitation and hygiene ranked second while smoke from solid fuels ranked fourth.

Kumar and File (2010) conducted a study in Ethiopia and identified birth interval with the previous child and the mother's standard of living index as vital factors associated with child mortality. Mother's education and birth order were also found to have a significant impact on child mortality in Ethiopia. This was also found to be causing infant and child mortality across African sub-Sahara as contained in Bello (2002). Similarly, Mesike and Mojekwu (2012) used principal component analysis and multiple regression modeling to examine the environmental determinants of child mortality in Nigeria. They found that household environmental characteristics, such as access to immunization, sanitation facilities, proper refuse disposal, and low-polluting fuels, were associated with lower mortality rates.

Charmarbagwala et al. (2005) conducted a meta-study that highlighted the crucial role of household income in determining child health. However, they also noted that income is not always a significant determinant of infant mortality, particularly as mortality rates decline. This can partly be explained by the fact that as mortality falls, the bulk of under-five-mortality is rather those of infants than child death, and these deaths are more sensitive to health provision than socio-economic conditions (White, 2004). Omariba, Beaujot, and Rajulton (2007) found that demographic factors are more important in explaining infant (<12months) mortality, while socio-economic, socio-cultural, and hygienic factors play a greater role in explaining child mortality (<5years).

Aguayo-Rico et al. (2005) evaluated the Solow model with human capital and found that health services had the most significant impact on economic growth. They concluded that a higher awareness of the health of the people is necessary if sustainable growth is pursued especially for the third world for policy implications. Goro (2007) examined the determinants of infant and child mortality in Ghana and found that maternal education, birth order, and marital status were significant determinants for infant mortality, while only maternal education had a significant impact on child mortality. Jinadu et al. (2010) identified factors such as dirty feeding utensils, inadequate household refuse disposal, and poor storage of drinking water as contributors to the high incidence of diarrhea. However, Younger (2007) did not find significant effects of variables related to the quality of drinking water and sanitation on infant mortality.

Kombo and Ginneken (2009) analyzed data from the Zimbabwean DHS and found that birth order with short preceding intervals and multiple births were associated with higher infant and child mortality. However, they did not observe the expected U-shaped relationship between birth order, maternal age, and infant and child mortality. Kenya, Mustafa, and Odimegwu (2008) examined the socioeconomic determinants of infant mortality in Kenya and found regional variations in infant and child mortality rates. Factors such as household wealth, ethnicity, breastfeeding, and the child's sex were associated with infant mortality.

Muntago (2004) investigated the impact of socioeconomic and environmental variables on infant and child mortality in urban areas of Kenya. The study found that factors such as birth order, birth interval, household wealth, access to drinking water and sanitation facilities, and use of low-polluting fuels were associated with lower mortality rates. Maternal age, maternal education, and the child's gender did not show a significant association with child mortality. Hill (2001) also found that mother's educational level and economic status influenced infant and child mortality, with urban areas having higher risks of mortality. However, controlling for HIV prevalence, child mortality was lower in urban areas.

Sahn and Stifle (2003) analyzed data from 24 African countries and found that infant mortality rates were lower in urban areas compared to rural areas. Factors such as better education and improved public and health infrastructures in urban areas contributed to this variation. However, the HIV/AIDS epidemic was identified as a significant factor contributing to high infant and child mortality rates in sub-Saharan Africa.

**2.8 Theoretical Framework for this Study**

**Proximate Determinants Framework**

The Proximate Determinants Framework is a theoretical framework widely used in the field of child survival to understand the immediate causes or factors that directly influence under-5 mortality and survival. It identifies a set of intermediate variables, referred to as proximate determinants, which act as key factors in determining the risk of morbidity and mortality in children. However, defining and measuring these determinants pose challenges, as variables may have varying levels of proximity in relation to the outcome being studied. One challenge is the categorization of variables, such as low birth weight as a potential risk factor for subsequent child survival within the framework. Despite these challenges, the development of the proximate determinants framework is based on several premises.

1. In an ideal setting, more than 97% of newborn infants would be expected to survive their first five years of life. However, this study focuses on children beyond the newborn stage.
2. The reduction in child survival probability can be attributed to various social, economic, biological, and environmental influences.
3. Socioeconomic determinants (independent/response variable) operate through more basic proximate determinants, which serve as forces in the risk of disease and disease outcome.
4. Specific diseases and nutrient deficiencies observed in the surviving population serve as biological indicators of the functioning of proximate determinants.
5. Growth faltering and child mortality (dependent variable) are the cumulative results of multiple disease processes and their interactions, rather than being caused by a single isolated disease episode.

The key aspect of this model lies in the identification of proximate determinants or intermediate variables that directly impact the risk of morbidity and mortality. These variables, referred to as proximate determinants, are influenced by social, economic, biological, and environmental factors, ultimately affecting child health outcomes. The proximate determinants are grouped into five major categories: maternal factors, environmental contamination, nutrient deficiency, injury, and personal illness control.

1. Maternal Factors

Maternal age, parity (number of previous births), and birth interval (spacing between pregnancies) are crucial factors influencing child survival. Studies have shown that younger maternal age is associated with higher child mortality rates (Kumar & File, 2005; Raj et al., 2010; Adebowale et al., 2013). Additionally, higher parity (having multiple children) has been linked to increased child mortality due to limited resources and maternal fatigue (Ezeh et al., 2010; Adebowale et al., 2013). Birth interval, the time between consecutive births, is also a significant determinant of child survival. Short birth intervals are associated with higher child mortality rates due to increased maternal and child health risks (Rutstein, 2005; Adebowale et al., 2013).

1. Environmental Contamination

Environmental contamination refers to the presence of harmful substances in the environment that can adversely affect child health. Environmental factors, such as air pollution, contaminated food, water, and improper hygiene practices, play a significant role in child health outcomes. Exposure to pollutants, inadequate sanitation facilities, and poor hygiene practices contribute to the risk of infectious diseases and malnutrition among children (Akhtar et al., 2017; Azage et al., 2014). Exposure to indoor and outdoor air pollution has been associated with increased risk of respiratory infections and other health problems in children (World Health Organization, 2018). Contaminated food, water, and inadequate hygiene practices contribute to diarrheal diseases, which are a leading cause of under-5 mortality (Liu et al., 2016). Vector-borne diseases transmitted by insects, such as malaria and dengue fever, also pose a significant threat to child health (WHO, 2020).

1. Nutrient Deficiency

Nutrient deficiency refers to inadequate intake or absorption of essential nutrients necessary for proper growth and development of children. Adequate nutrition is vital for child growth and development. Caloric intake, protein consumption, and micronutrient deficiencies (such as vitamin and mineral deficiencies) are critical determinants of child health. Malnutrition, including both undernutrition and overnutrition, contributes to increased child morbidity and mortality (Black et al., 2013; Victora et al., 2008). Insufficient calorie intake leads to stunted growth, increased susceptibility to infections, and impaired immune function (Prentice et al., 2013). Protein-energy malnutrition and micronutrient deficiencies, such as vitamin A and iron deficiencies, further compromise child health and increase the risk of mortality (Bhutta et al., 2013; Stevens et al., 2015).

1. Injury

Injuries are a significant contributor to under-5 mortality and can occur through accidental or intentional means. Accidental injuries include falls, burns, drowning, and road traffic accidents, among others. Intentional injuries encompass child abuse and neglect. Injuries are a leading cause of death and disability in children globally (Peden et al., 2008). Factors such as unsafe environments, lack of supervision, violence expose, and inadequate safety measures contribute to the occurrence of childhood injuries, leading to increased morbidity and mortality (World Health Organization, 2008). Preventive measures, such as childproofing homes, promoting road safety, and raising awareness about child abuse, are essential to reduce child mortality due to injuries (Hyder et al., 2009).

1. Personal Illness Control

Personal illness control refers to the ability of individuals and caregivers to prevent and manage illnesses. Personal preventive measures and access to medical treatment are essential for child health. Adequate nutrition, hygiene practices, healthcare services, immunizations, and timely treatment of illnesses are critical in preventing infectious diseases and reducing child mortality (Jones et al., 2018; Bryce et al., 2005; United Nations, 2008). Access to quality healthcare services, including timely and appropriate medical treatment, is crucial for managing illnesses and preventing complications (World Health Organization, 2015). Factors such as healthcare availability, affordability, and utilization significantly impact child survival rates.

It is important to note that the Proximate Determinants Framework does not operate in isolation but interacts with broader social, economic, and environmental determinants of child health. By considering the immediate factors that directly influence child health outcomes, policymakers and healthcare professionals can develop targeted interventions and strategies to reduce child mortality rates. The framework provides a comprehensive and multidimensional approach to understanding under-5 mortality and survival, enabling a comprehensive approach to improving child health and survival.

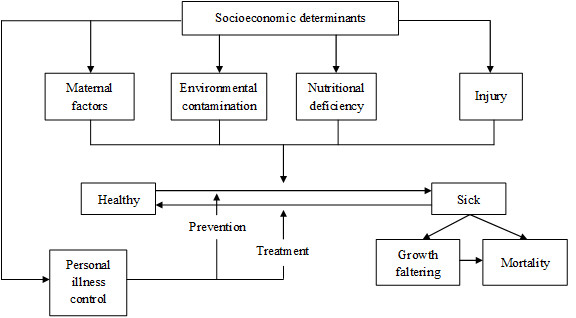


Figure 1: Operation of the five groups of proximate determinants on the health dynamics of a population. Source: Adapted from Mosley and Chen (1984).

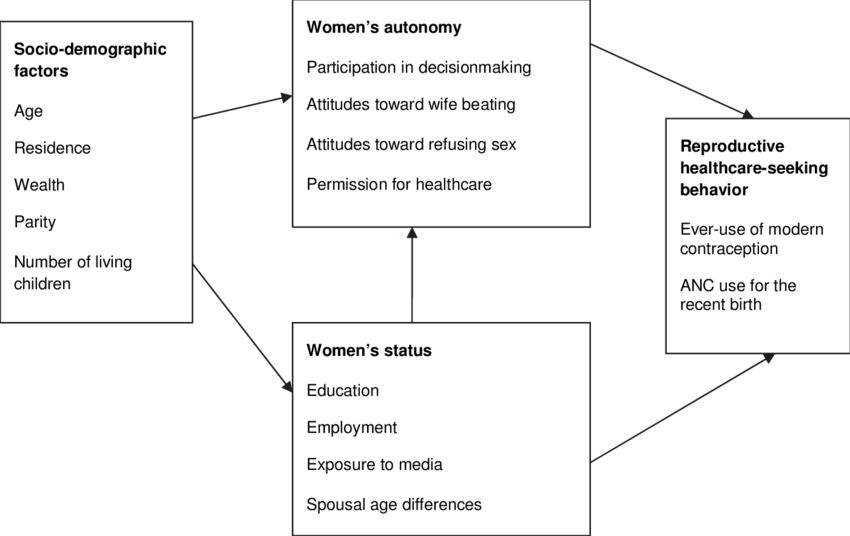


Figure 2: Conceptual framework of the relationship between women's autonomy and reproductive healthcare-seeking behavior. Source: Adapted from Wado, Y.D. (2018).

**CHAPTER THREE**

**METHODOLOGY**

**3.1 Study Area**

Nigeria, located in the West African sub-region, is situated between latitudes 4º16' and 13º53' north and longitudes 2º40' and 14º41' east. It shares borders with Niger to the north, Chad to the northeast, Cameroon to the east, and Benin to the west. The southern part of Nigeria is bordered by approximately 850 kilometres of the Atlantic Ocean, extending from Badagry in the west to the Rio del Rey in the east. With a total land area of 923,768 square kilometres, Nigeria consists of 36 states, a Federal Capital Territory (FCT), and 774 Local Government Areas (LGAs). It is the fourteenth largest country in Africa in terms of land mass. Nigeria is home to about 374 ethnic groups, with the Hausa, Igbo, and Yoruba being the major groups. The country is divided into six geopolitical zones: North Central, North East, North West, South East, South South, and South West. These regions are characterized by homogeneity and share similar socio-cultural characteristics. Adult literacy rates for males and females stand at 71.3% and 52.7%, respectively, while health-related characteristics such as access to healthcare, environment, and housing exhibit similarities within each region

**3.2 Study Design**

The study utilized the 2018 Nigeria Demographic Health Survey (NDHS), which was a cross-sectional study. The sample design enabled the calculation of specific indicators for each geopolitical zone, all 36 states, and the Federal Capital Territory (FCT), Abuja.

**3.3 Study Population**

The nationally representative 2018 NDHS was carried out by the National Population Commission (NPC) in collaboration with ICF Macro, Calverton, MD, USA. The survey utilized the list of enumeration areas (EAs) from the 2006 population census of the Federal Republic of Nigeria, which was provided by the National Population Commission, as the sampling frame.

**3.4** **Selection Criteria**

3.4.1 Inclusion Criteria

1. Mothers having at least a child or children under the age of 5 years Old,
2. Persons aged 15-49 years of Age who responded and comprehended the questions.

3.4.2 Exclusion Criteria

1. Any person outside the reproductive age groups will be excluded.
2. Persons with disability that impedes their ability (physical, mental or psychological) to comprehend or process interview questions
3. Persons who do not have children or all their children are aged older than 5 years of age
   1. **Description of Variables**

The dependent variable of interest is the child's healthcare, which will be recoded into a binary variable. A value of 1 will indicate that any health check was recorded for the child, while a value of 0 will indicate no health checks or uncertainty regarding the recording of health checks. The selection of independent variables will largely align with previous literature, drawing from suggestions made by Mason and Smith (1986), Mosley and Chen (1984), Lartey et al. (2016), Getachew and Bekele (2016), and Adebowale et al. (2017).

3.5.1 Independent Variables

Include proximate and socioeconomic variables including Regions, residence, Wealth Index, education, occupation, ethnicity, income status of respondent, religion, type of marriage, amongst others.

3.5.2 Intervening Variables

Mother’s Autonomy, age at first birth, toilet facility, water source, place of delivery, mother’s age and Parity (birth Order), the wealth index is directly available in the data set.

3.5.3 Main Variables and Definition of Terms

| **S/N** | **Variables** | **Definition of Variables** | **Variable Code 2018 NDHS** |
| --- | --- | --- | --- |
| **BACKGROUND CHARACTERISTICS** | | | |
| 1 | Age (Current age of respondent at survey) | Range from 15 – 49 years, Grouped Ages | V013 |
| 2 | Number of living/surviving children | Total Number Alive | V218 |
| 3 | Income status of respondent | Wealth Index | V190 |
| 4 | Highest Educational level of respondent | None, primary, secondary, tertiary | V106 |
| 5 | Occupation of respondent | Employed, self-employed, unemployed | V716 |
| 6 | Religion | Christian, Muslim, others | V130 |
| 7 | Type of marriage | Religious, traditional, registry | V501 |
| 8 | Type of place of residence | Urban / Rural | V102 |
| 9 | Ethnicity | Yoruba, Igbo, Hausa and Others | V131 |
| 10 | Total no of children ever lost | Nature of loss (illness, accident, etc) | V206, V207 |
| 11 | Sex differentials of surviving children | Ratio of female to Male Children | V202-V205 |
| 12 | Parity | Birth order (BORD) | BIDX$01-20 |
|  | REGION | 6 Geopolitical regions | V024, V101 |
| **AUTONOMY OF THE MOTHER/PRIMARY CARE GIVER** | | |  |
| 1 | Seek health care for self | Contraceptive/Reproductive, | V394, V467A |
| 2 | Visit family/relatives | Visits without/with Consultation | V743D |
| 3 | Make major purchases | E.g. buys TV etc. without/with Consultation | V743B |
| 4 | Sexual bargaining power | Initiate Sex first | V850A INDIVIDUAL RECODE |
|  | RECODE INTO 1 Participates in all 4 decision making or 0 if participates in none | | |
| **\*HEALTH SEEKING BEHAVIOUR/PRACTICE FOR UNDER-5 (Intermediate Variables)** | | |  |
| 1 | Caregivers’ recognition and response to illness | Knowledge of emergency health indicators for children | V416, V466 |
| 2 | Making use of community-based treatment options | Recent health access /Exposure to health care facility (Medical treatment), Immunization, other health reasons | Q611, Q624  V467D |
| 3 | Accessing biomedical services | Number & type of immunization taken for child | V466 |
| 4 | Making use of other treatment options | Non-Medical, Patent Medicine, traditional, etc | Q625 |
|  | \*Compute all variables and recoded into Appropriate HSB  (Likert scale like- list out and accord 1 to each recognition of symptoms, check up or recent use of medical facilities accord 1for at least one child, Every immunization taken for at least one child accord, making use of any other treatment options accord -1 to each use, collate and compute to assign a figure to each respondent, none information on child accord -1 ) | 1 appropriate HS behaviour (if figure is 70% and above)  0 Inappropriate HS behaviour (if Below 70% ) |  |
| **DEPENDENT/RESPONSE VARIABLE** | | |  |
|  | Health seeking behaviour for under-5 | 1 appropriate HS behaviour (if figure is 70% and above)  0 Inappropriate HS behaviour (if Below 70% ) |  |

**3.6 Sample Size Estimation**

Out of the sample of 41,668 households, 40,666 were found to be occupied. Among the occupied households, 40,427 were successfully surveyed, resulting in a response rate of 99%. Within these interviewed households, a total of 42,121 women aged 15-49 years were identified for individual interviews, and 41,821 women were successfully interviewed, resulting in a response rate of 99%.

**3.7 Data Collection Method and Sampling Technique**

Data was obtained from the Nigeria Demographic Health Survey 2018 dataset, which employed a stratified three-stage cluster design for participant selection. The Local Government Areas (LGAs) were selected after which the Primary Sampling Units (PSUs) referred to as clusters were selected, then the selection of households within the selected PSUs. The sample included 42,000 households nested within 1,400 clusters. The survey was conducted successfully in 1,389 clusters after excluding 11 clusters affected by deteriorating law-and-order situations during fieldwork, specifically in Zamfara (4 clusters), Lagos (1 cluster), Katsina (2 clusters), Sokoto (3 clusters), and Borno (1 cluster). In Borno, 11 out of 27 Local Government Areas (LGAs) were dropped due to high insecurity. The survey covered various aspects including household socio-demographics, maternal health, and the well-being of children under five years old. The study utilized the "Kids recode" and "Women's personal recode data" to analyze information on under-five children born to interviewed women within the five years preceding the survey.

**3.8 Ethical Consideration**

The survey protocol underwent review and approval by the National Health Research Ethics Committee of Nigeria (NHREC) and the ICF Institutional Review Board. Once all questionnaires were finalized in English, they were translated into Hausa, Yoruba, and Igbo languages. Computer-assisted personal interviewing (CAPI) was utilized for data collection during the 2018 NDHS. Permission was sought from the Demographic Health Survey to access and utilize the data for the specific topic and objectives.

**3.9 Scope and Limitation**

Considerable variation exists in the global definition and conceptualization of women's empowerment/autonomy (Frade, S, & Odimegwu, C., 2018). the operational definition was adapted from the NDHS 2018 to include Women's Negotiation for Sex. However, it is important to note that the exclusion of men and the absence of information on attitudes towards Covid-19 in relation to health-seeking behavior may hinder a comprehensive understanding of the healthcare needs for children under the age of 5. Additionally, the NDHS 2018 did not capture reasons for spousal disagreements/agreements regarding healthcare choices for children under the age of 5, which might serve as a limitation to this study. In the datasets used, SPSS converted the values that are not applicable to system missing, while missing values were considered as user missing. Responses coded as 'inconsistent' in the recode files, which were identified during the secondary editing of the collected data by DHS, which were excluded during the analysis stage. Furthermore, only women who had ever been married or lived in a consensual union were eligible for interview. It is important to note that the age range of eligibility varied across different surveys, such as ever-married women aged 12-49.

**3.10 Data Management and Analysis**

Statistical methods such as odds ratio, confidence intervals, and chi-square tests were employed to test hypotheses and assess significant associations. While logistic regression models, analysis of variance, and non-parametric tests was adopted to test for correlations. Tables was constructed for different variables, and certain variables were recomputed and recoded.

3.10.1. Data Preparation

SPSS version 26 was used for data analysis and cleaning. Variables with a p-value less than 0.25 in binary logistic regression were included for multivariable regression. Descriptive statistics, composite score analysis, bivariate and multivariate binary logistic regression were employed to achieve the objectives. The Hosmer-Lemeshow goodness of fit test (p-value = 0.60) was used to assess model fit. Additionally, a multicollinearity test using the variance inflation factor (VIF) with a threshold of <5 or an average VIF of 1.19 was conducted to check for inter-association between independent variables

3.10.2 Data Analysis Plan

| S/N | OBJECTIVES | INDEPENDENT VARIABLES | DEPENDENT VARIABLES | DATA ANALYSIS |
| --- | --- | --- | --- | --- |
| 1 | To describe the socio-demographic determinants of accessing under 5 Care Utilization across regions | Parental/Caregiver Background Characteristics | HSB for under-5 (Binary recode) | Chi-square test |
| 2 | To determine the variations with Women’s Autonomy across regions | Age, Religion, Education, Wealth Index, Occupation, Marriage type, Ethnicity, No of children, Sex differentials of Children (Background Characteristics) | women’s autonomy (recoded: with or without Permission) | Bivariate Analysis |
| 3 | To describe the relationship between Women’s Autonomy and recognition of health symptoms for Under 5 care across regions | Background variables (Proximate determinants)  women’s autonomy (recoded: alone or not alone) | HSB for under-5 (Binary recode) | MANOVA, CORRELATION (Pearson’s) |
| 4 | To identify the relationship between type of health care services accessed for under 5 children and Women’s Autonomy across regions | Types of health care facility visited: Medical facility, Trado Medical, Patent Stores etc | women’s autonomy (as operationalized above) | Logistic Regression |
| 5 | To compare Women’s Autonomy with Utilization of health facility accessed across regions | women’s autonomy (as operationalized) | health seeking behaviour for under-5 (Binary recode) | Regression Analysis |

3.10.3 Section and Variable Description – Individual

In the DHS I individual recode only living children were included.

HIDXA Index to the birth history. All children born in the last years have entries in this section.

Children of multiple births each have their own entry as in the maternity history.

**BASE:** Children born in the last 5 years (B19 < 60).

**DIARRHOEA**

Variables H11 to H21 relate to the prevalence and treatment of diarrhea.

**BASE:** All living children born in the last five years for H11 (B19 < 60 and B5 = 1), and children having an episode of diarrhea in the last two weeks (H11 = 1 or H11 = 2) for H11B to H21.

H11 Whether the child had diarrhea in the last 24 hours or within the last two weeks. Code 1 is country specific for surveys after DHS II. Code 1 indicates that the child had been ill in the last 24 hours; code 2 indicates that the child had been ill with diarrhea in the last two weeks.

In case the question about diarrhea in the last 24 hours is used, the code 1 can be used, in this case the code 2 is used to indicate that the child had diarrhea the last two weeks but not in the last 24 hours otherwise the code 2 is for the last 2 weeks including the last 24 hours.

H11B Whether there was any blood in the stools. This question is no longer part of the DHS VII core questionnaire, but the variable is kept in the DHS VII recode.

H12A-X The place at which medical treatment or advice was sought for the last episode of diarrhea.

This question has multiple coding categories and each category is recorded separately in these variables. A few of the categories are standard (H12A, J, K, L, X). However, room has been left for country-specific categories (H12B, C, D, E, F, G, H, I, M, N, O, P, Q, R, S, T, U, V, W). Any category not used in a particular country is left blank.

Variables H11 to H21 relate to the prevalence and treatment of diarrhea.

H12A-X The place at which medical treatment or advice was sought for the last episode of diarrhea

H13 & H13B if ORS was given

H14 if the child was given the recommended home solution

H15 (HA-I) Whether the child was given antibiotic pills or syrups

H20 Whether the child received any other treatment

**FEVER**

H22 Whether the child had fever in the last two weeks.

Variables H31 to H32Z relate to the prevalence and treatment of cough in the two weeks preceding the interview.

**BASE:** All living children born in the last five years for H22, H31, H31B and H34, and children suffering from fever or short rapid breaths or difficulty breathing in the last two weeks for H32A to H32Z and H37A to H37Z (H22 = 1 or H31B = 1).

H31 Whether the child had suffered from a cough in the last two weeks and whether the child had been ill with the cough in the last 24 hours. Code 1 indicates that the child had been ill in the last 24 hours*;* code 2 indicates that the child had been ill with the cough in the last two weeks. Code 1 is country specific for surveys after DHS II. In case code 1 is used, code 2 indicates that the child had cough in last two weeks but not in the last 24 hours. H31B Whether the child had suffered from rapid breathing.

**BASE**: All living children born in the last 5 years. In previous recodes the base was restricted to children who had suffered from cough.

H31C Whether the child has a problem in the chest or a blocked or running nose.

H31D Amount offered to the child to drink. This question is no longer part of the DHS VII core questionnaire, but the variable is kept in the DHS VII recode.

H31E Amount offered to the child to eat. This question is no longer part of the DHS VII core questionnaire, but the variable is kept in the DHS VII recode.

H32A-X The place at which medical treatment or advice was sought for the last episode of fever and/or difficulty breathing. This question has multiple coding categories and each category is recorded separately in these variables. A few of the categories are standard (H32A, J, K,

L, X). However, room has been left for country-specific categories (H32B, C, D, E, F, G, H, I, M, N, O, P, Q, R, S, T, U, V, W). Any category not used in a particular country is left blank.

H32Y Whether no treatment or advice was sought for the fever and/or cough as reported by the respondent.

H32Z Whether the child was taken to a medical facility for treatment of the fever and/or cough.

This usually includes being taken to all Public Sector facilities and all Medical Private Sector facilities except for Pharmacy. This variable is a summary of these preceding variables as is used in the final reports.

H34 Whether the respondent received or not a vitamin A dose in form of an ampoule, a capsule or syrup in last 6 months

**BASE:** All living children born in the last five years (B19 < 60 and B5 = 1)

**COUGH**

Var Description **DHS VII** Standard Recode 88 August 29, 2018

Treatment taken for fever or difficulty breathing

**BASE** for H37A to H37Z is children suffering from fever or short rapid breaths or difficulty breathing in the last two weeks (H22 = 1 or H31B = 1). In previous recodes the base was restricted to children with fever in the last 2 weeks (H22 = 1).

H37A SP/Fansidar

H37B Chloroquine

H37C Amodiaquine

H37D Quinine

H37DA Quinine injection/IV

H37E Combination with artemisinin

H37AA Artesunate rectal

H37AB Artesunate injection/IV

H37F Country specific antimalarial

H37G Country specific antimalarial

H37H Other antimalarial

H37I Antibiotic pills or syrup

H37J Antibiotic injection

H37K Aspirin

H37L Acetaminophen/paracetamol/panadol

H37M Ibuprofen

H37N Country specific

H37O Country specific

H37P Country specific

H37X Other

H37Y Nothing

H37Z Don't know if or what was taken

**Drinking and eating pattern during diarrhea**

H38 Amount offered to drink

H39 Amount offered to eat

**BASE** for H38 and H39**:** Diarrhea last two weeks (H11 = 1 or H11 = 2).

H42 Taking iron pills, sprinkles with iron or iron syrup in the last 7 days

**BASE:** All living children born in the last five years (B19 < 60 and B5 = 1)

H43 Drugs for intestinal parasites in last 6 months

**BASE:** All living children born in the last five years (B19 < 60 and B5 = 1)

**Diarrhea**

Questions pertaining to H44B, H44C and H45 are no longer part of the DHS VII core questionnaire, but the variables are kept in the DHS VII recode.

H44A Place first sought treatment for diarrhea

**BASE:** Received diarrhea treatment (H12Y = 0).

H44B Days after diarrhea sought advice or treatment

H44C Still has diarrhea

H45 Times zinc was given. This question is no longer part of the DHS VII core questionnaire, but the variable is kept in the DHS VII recode.

**Fever**

H46A Place first sought treatment for fever of difficulty breathing

H46B Days after fever sought advice or treatment. This questions is no longer part of the DHS VII

core questionnaire, but the variable is kept in the DHS VII recode.

**BASE:** Children who received treatment for fever or difficulty breathing last 2 weeks (H32Y = 0).

H47 Blood taken from child's finger/heel for testing

**BASE:** Children with a fever in the last 2 weeks (H22 = 1)

CHAPTER FOUR

RESULT

4.1 Socio-demographics Characteristics of the Respondents

Table 1 shows the socio-demographics characteristics of the 6,733 respondents, displaying the percentage distribution of various socio-demographic factors. The mean age of the respondents is 30.2±5.55. The results show that the majority of respondents were in the age range of 25-34 (47%), followed by 15-24 (26.5%), and 35-49 (26.5%). More than half of the respondents had no formal education (52.6%), while 26.3% had completed secondary education. The partner's education category showed that 41.7% of partners had no formal education, while 31.2% had completed secondary education. The vast majority of respondents were married (97.2%) and only a small proportion was cohabiting (2.8%).

Majority of respondents were employed (67.7%), while 32.3% were unemployed. Many of respondents were Muslim (69.3%), while 30.3% were Christian. More than half of the respondents belonged to the poor category (54.3%), while 25.3% were rich, and 20.5% belonged to the middle class. A major fraction (52. 4%) of respondents were Hausa/Fulani/Kanuri, while Yoruba and Igbo constituted 5.0% and 9.7% respectively. 37.5% of respondents had two under-5 children, while 32.5% had only one child in this category. Majority of respondents had not lost any children (65.1%), while only a small proportion had lost three or more children (6.5%).

More than half (55.1%) of respondents were exposed to media, 52.3% had no autonomy, while only 17.8% had full autonomy, meanwhile 71.2% lived in rural areas. The North East region had the highest proportion of respondents (31.7%), followed by the North West (32.8%), and the North Central (14.4%), while the South-East, South-South, and South-West regions had smaller proportions of respondents.

Table 1: Socio-demographic Characteristics of the Respondents

| **Characteristics** | **(N=6733)**  **Frequency (n)** | **Percentage (%)** |
| --- | --- | --- |
| **Age** |  |  |
| 15-24 | 1784 | 26.5 |
| 25-34 | 3167 | 47.0 |
| 35-49 | 1782 | 26.5 |
| **Mean±S.D=30.2±5.55** |  |  |
| **Education** |  |  |
| None | 3538 | 52.6 |
| Primary | 1070 | 15.9 |
| Secondary | 1770 | 26.3 |
| Tertiary | 355 | 5.3 |
| **Partner’s Education** |  |  |
| None | 2810 | 41.7 |
| Primary | 941 | 14.0 |
| Secondary | 2099 | 31.2 |
| Tertiary | 883 | 13.1 |
| **Marital Status** |  |  |
| Married | 6545 | 97.2 |
| Co-habiting | 188 | 2.8 |
| **Occupation Status** |  |  |
| Unemployed | 2175 | 32.3 |
| Employed | 4558 | 67.7 |
| **Religion** |  |  |
| Christianity | 2042 | 30.3 |
| Islam | 4665 | 69.3 |
| Other | 26 | 0.4 |
| **Wealth Status** |  |  |
| Poor | 3653 | 54.3 |
| Middle | 1378 | 20.5 |
| Rich | 1702 | 25.3 |
| **Ethnicity** |  |  |
| Yoruba | 333 | 5.0 |
| Igbo | 652 | 9.7 |
| Hausa | 3528 | 52.4 |
| Other | 2220 | 33.0 |
| **Number of under-5 Children** |  |  |
| One | 2187 | 32.5 |
| Two | 2526 | 37.5 |
| Three | 1127 | 16.7 |
| Four and above | 893 | 13.3 |
| **Number of Children Lost** |  |  |
| None | 4383 | 65.1 |
| One | 1295 | 19.2 |
| Two | 619 | 9.2 |
| Three and above | 436 | 6.5 |

Table 1: Socio-demographic Characteristics of the Respondents Cont’d

| **Characteristics** | **(N=6733)**  **Frequency (n)** | **Percentage (%)** |
| --- | --- | --- |
| **Number of Living Children** |  |  |
| One | 1173 | 17.4 |
| Two | 1266 | 18.8 |
| Three | 1124 | 16.7 |
| Four | 975 | 14.5 |
| Five and above | 2195 | 32.6 |
| **Media Exposure** |  |  |
| Not Exposed | 3026 | 44.9 |
| Exposed | 3707 | 55.1 |
| **Women Autonomy** |  |  |
| None | 3518 | 52.3 |
| Partial Autonomy | 2017 | 30.0 |
| Full Autonomy | 1198 | 17.8 |
| **Place of Residence** |  |  |
| Urban | 1940 | 28.8 |
| Rural | 4793 | 71.2 |
| **Region** |  |  |
| North Central | 970 | 14.4 |
| North East | 2137 | 31.7 |
| North West | 2209 | 32.8 |
| South East | 545 | 8.1 |
| South South | 520 | 7.7 |
| South West | 352 | 5.2 |

4.2 Socio-demographic Characteristics of Respondents Based on their Autonomy

Table 2 shows the distribution of socio-demographic characteristics of respondents based on their autonomy in household decision making, with a total of 6,733 respondents. Majority, (64.6%) of the respondents have no autonomy in decision-making about their health, while 66.9% have no autonomy in large household purchases. This percentage is lower for decision-making about visits to family or relatives (45.8%) and sex refusal (49.8%).

The highest level of no autonomy in decision-making was within the 15-24 age group, 71.3% of the respondents had no decision making power on their health, 73.7% on large household purchases, while 50.1% and 54.3% had no decision-making power on visits to family or relatives and sex refusal respectively compared to the older age groups. Respondents with no formal education have the highest level of no autonomy in household decision-making, ranging from 57.5% for visits to family or relatives to 81.8% for large household purchases, while respondents with lowest level of autonomy were found within those with tertiary education. The partner's education has a similar pattern to the respondent's education.

Married respondents have the highest level of no autonomy in household decision-making in large household purchases (67.9%) and 46.5% for visits to family or relatives, this was the same with unemployed respondents with highest level of no autonomy in large household purchases (83.2%) and 57.9% for sex refusal. Respondents who were Muslim have the highest percentage of no autonomy ranging from 55.1% for visits to family or relatives to 79.3% for large household purchases. Wealth status has a similar pattern to education, where respondents in the poor category have the highest percentage of no autonomy in household decision-making, and lowest in the rich category. Hausa respondents have the highest percentage of no autonomy in household decision-making, ranging from 56.2% for visits to family or relatives to 82.7% for large household purchases. The Igbo ethnic group has the lowest percentage in all four types of decision-making. In terms of the number of under-5 children, respondents with four or more children have the highest percentage of no autonomy in household decision-making, ranging from 74.7% for respondent’s health to 81.0% for large household purchases. Respondents with only one child have the lowest percentage of no autonomy.

Table 2: Socio-demographics of Respondents Based Autonomy in Household Decision Making

| **Variables** | **Decision on Respondent’s Health** | **Decision on Large Household Purchases** | **Decision on visits to Family or Relatives** | **Sex Refusal** |
| --- | --- | --- | --- | --- |
| **Total** | **N = 6733** | **N = 6733** | **N = 6733** | **N = 6733** |
| % (Sub-Total) | 64.6 (4348) | 66.9 (4503) | 45.8 (3085) | 49.8 (3353) |
| **Age** | % (n) | %(n) | %(n) | %(n) |
| 15-24 | 71.3 (1272) | 73.7 (1314) | 50.1 (893) | 54.3 (969) |
| 25-34 | 63.8 (2020) | 65.3 (2069) | 45.0 (1424) | 47.6 (1507) |
| 35-49 | 59.3 (1056) | 62.9 (1120) | 43.1 (768) | 49.2 (877) |
| **Education** |  |  |  |  |
| None | 80.1 (2834) | 81.8 (2895) | 57.5 (2034) | 66.2 (2342) |
| Primary | 56.0 (599) | 59.4 (635) | 38.6 (413) | 42.8 (458) |
| Secondary | 45.3 (801) | 47.8 (846) | 31.4 (555) | 26.8 (474) |
| Tertiary | 32.1 (114) | 35.8 (127) | 23.4 (83) | 22.3 (79) |
| **Partner’s Education** |  |  |  |  |
| None | 80.9 (2273) | 82.5 (2318) | 59.4 (1668) | 67.3 (1892) |
| Primary | 58.2 (548) | 60.8 (572) | 39.7 (374) | 45.5 (428) |
| Secondary | 50.4 (1057) | 53.4 (1121) | 33.5 (703) | 33.4 (702) |
| Tertiary | 53.2 (470) | 55.7 (492) | 38.5 (340) | 37.5 (331) |
| **Marital Status** |  |  |  |  |
| Married | 65.7 (4298) | 67.9 (4447) | 46.5 (3041) | 50.6 (3309) |
| Co-habiting | 26.6 (50) | 29.8 (56) | 23.4 (44) | 23.4 (44) |
| **Occupation Status** |  |  |  |  |
| Unemployed | 80.4 (1749) | 83.2 (1809) | 58.9 (1282) | 57.9 (1259) |
| Employed | 57.0 (2599) | 59.1 (2694) | 39.6 (1803) | 45.9 (2094) |
| **Religion** |  |  |  |  |
| Christianity | 34.7 (708) | 38.4 (785) | 24.8 (506) | 22.0 (450) |
| Islam | 77.6 (3618) | 79.3 (3699) | 55.1 (2569) | 61.9 (2887) |
| Other | 84.6 (22) | 73.1 (19) | 38.5 (10) | 61.5 (16) |
| **Wealth Status** |  |  |  |  |
| Poor | 75.2 (2748) | 76.8 (2807) | 53.9 (1968) | 61.4 (2242) |
| Middle | 58.4 (805) | 61.0 (841) | 39.0 (538) | 42.5 (585) |
| Rich | 46.7 (795) | 50.2 (855) | 34.0 (579) | 30.9 (526) |
| **Ethnicity** |  |  |  |  |
| Yoruba | 38.4 (128) | 47.8 (159) | 27.3 (91) | 22.2 (74) |
| Igbo | 27.8 (181) | 27.9 (182) | 23.5 (153) | 13.0 (85) |
| Hausa | 80.3 (2834) | 82.7 (2919) | 56.2 (1984) | 64.1 (2262) |
| Other | 54.3 (1205) | 56.0 (1243) | 38.6 (857) | 42.0 (932) |
| **Number of under-5 Children** |  |  |  |  |
| One | 58.5 (1280) | 61.4 (1343) | 41.6 (910) | 44.4 (972) |
| Two | 63.3 (1598) | 64.3 (1624) | 44.8 (1131) | 48.9 (1235) |
| Three | 71.3 (803) | 72.1 (813) | 51.5 (580) | 52.4 (591) |
| Four and above | 74.7 (667) | 81.0 (723) | 52.0 (464) | 62.2 (555) |

Table 2: Socio-demographics of Respondents Based on Autonomy in Household Decision MakingCont’d

| **Variables** | **Decision on Respondent’s Health** | **Decision on Large Household Purchases** | **Decision on visits to Family or Relatives** | **Sex Refusal** |
| --- | --- | --- | --- | --- |
| **Number of Children Lost** | % (n) | %(n) | %(n) | %(n) |
| None | 60.9 (2671) | 63.5 (2782) | 43.7 (1913) | 45.7 (2003) |
| One | 67.8 (878) | 69.5 (900) | 47.7 (618) | 53.8 (696) |
| Two | 73.8 (457) | 76.7 (475) | 52.0 (322) | 58.2 (360) |
| Three and above | 78.4 (342) | 79.4 (346) | 53.2 (232) | 67.4 (294) |
| **Number of Living Children** |  |  |  |  |
| One | 63.6 (746) | 67.5 (792) | 45.3 (531) | 48.1 (564) |
| Two | 63.9 (809) | 66.4 (841) | 45.6 (577) | 48.3 (612) |
| Three | 60.7 (682) | 62.6 (704) | 42.3 (475) | 47.8 (537) |
| Four | 65.9 (642) | 66.5 (648) | 46.3 (451) | 49.2 (480) |
| Five and above | 66.9 (1469) | 69.2 (1518) | 47.9 (1051) | 52.9 (1160) |
| **Media Exposure** |  |  |  |  |
| Not Exposed | 75.6 (2288) | 76.0 (2299) | 52.4 (1584) | 61.3 (1856) |
| Exposed | 55.6 (2060) | 59.5 (2204) | 40.5 (1501) | 40.4 (1497) |
| **Place of Residence** |  |  |  |  |
| Urban | 50.7 (984) | 53.0 (1028) | 36.7 (712) | 34.7 (674) |
| Rural | 70.2 (3364) | 72.5 (3475) | 49.5 (2373) | 55.9 (2679) |
| **Region** |  |  |  |  |
| North Central | 63.0 (611) | 64.0 (621) | 42.3 (410) | 49.0 (475) |
| North East | 71 (1518) | 70.2 (1500) | 52.8 (1128) | 51.5 (1101) |
| North West | 81.2 (1794) | 85.1 (1879) | 53.1 (1172) | 68.2 (1506) |
| South East | 26.8 (146) | 26.1 (142) | 22.2 (121) | 12.5 (68) |
| South South | 31.9 (166) | 38.1 (198) | 30.4 (158) | 21.0 (109) |
| South West | 32.1 (113) | 46.3 (163) | 27.3 (96) | 26.7 (94) |

4.3 Association between Socio-demographics and Health-Seeking Behavior

Table 3 shows the association between demographics and health-seeking behavior for child illness. A total of 6,733 women were included in the study. The table presents the percentage of women who sought/given treatment and those who did not seek/given treatment for child illness based on their socio-demographic characteristics.

Percentage of women who sought/given treatment for child illness was similar across age groups. Education, partner's education, wealth status, media exposure, women autonomy, place of residence and region were all significantly associated with treatment-seeking behavior (p < 0.001). Women who sought/given treatment increased with higher levels of education, partner's education, wealth status, media exposure, and women autonomy. Women living in urban areas were more likely to seek/given treatment for child illness compared to those living in rural areas.

Meanwhile, marital status, religion, ethnicity, number of under-5 children, number of children lost, and number of living children were not significantly associated with treatment-seeking behavior (p > 0.05). It is noteworthy that a higher percentage of women did not seek/given treatment for child illness, ranging from 26.1% to 39.3%, across all socio-characteristics.

Table 3: Association between Socio-demographics and Health-Seeking Behavior

| **Variables** | **Treatment**  **Sought/Given** | **Treatment not Sought/Given** |  |  |
| --- | --- | --- | --- | --- |
| **Total** | **N = 4575** | **N = 2158** | **x2** | **p-value** |
| **Age** | % (n) | %(n) |  |  |
| 15-24 | 67.9 (1211) | 32.1 (573) | 0.28 | 0.869 |
| 25-34 | 68.2 (2161) | 31.8 (1006) |  |  |
| 35-49 | 67.5 (1203) | 32.5 (579) |  |  |
| **Education** |  |  |  |  |
| None | 62.7 (2217) | 37.3 (1321) | 107.7 | <0.001\*\* |
| Primary | 71.2 (762) | 28.8 (308) |  |  |
| Secondary | 73.9 (1308) | 26.1 (462) |  |  |
| Tertiary | 81.1 (288) | 18.9 (67) |  |  |
| **Partner’s Education** |  |  |  |  |
| None | 60.7 (1705) | 39.3 (1105) | 147.8 | <0.001\*\* |
| Primary | 68.5 (645) | 31.5 (296) |  |  |
| Secondary | 72.2 (1516) | 27.8 (583) |  |  |
| Tertiary | 80.3 (709) | 19.7 (174) |  |  |
| **Marital Status** |  |  |  |  |
| Married | 68.1 (4457) | 31.9 (2088) | 2.39 | 0.122 |
| Co-habiting | 62.8 (118) | 37.2 (70) |  |  |
| **Occupation Status** |  |  |  |  |
| Unemployed | 63.7 (1386) | 36.3 (789) | 26.3 | <0.001\*\* |
| Employed | 70.0 (3189) | 30.0 (1369) |  |  |
| **Religion** |  |  |  |  |
| Christianity | 69.8 (1426) | 30.2 (616) | 4.83 | 0.089 |
| Islam | 67.1 (3131) | 32.9 (1534) |  |  |
| Other | 69.2 (18) | 30.8 (8) |  |  |
| **Wealth Status** |  |  |  |  |
| Poor | 62.4 (2281) | 37.6 (1372) | 131.7 | <0.001\*\* |
| Middle | 70.3 (968) | 29.8 (410) |  |  |
| Rich | 77.9 (1326) | 22.1 (376) |  |  |
| **Ethnicity** |  |  |  |  |
| Yoruba | 66.7 (222) | 33.3 (111) | 3.59 | 0.310 |
| Igbo | 71.2 (464) | 28.8 (188) |  |  |
| Hausa | 67.6 (2385) | 32.4 (1143) |  |  |
| Other | 67.8 (1504) | 32.3 (716) |  |  |
| **Number of under-5 Children** |  |  |  |  |
| One | 68.5 (1498) | 31.5 (689) | 4.64 | 0.200 |
| Two | 68.9 (1741) | 31.1 (785) |  |  |
| Three | 66.6 (750) | 33.5 (377) |  |  |
| Four and above | 65.6 (586) | 34.4 (307) |  |  |
| **Number of Children Lost** |  |  |  |  |
| None | 68.7 (3011) | 31.3 (1372) | 3.90 | 0.273 |
| One | 66.9 (866) | 33.1 (429) |  |  |
| Two | 67.0 (415) | 33.0 (204) |  |  |
| Three and above | 64.9 (283) | 35.1 (153) |  |  |

Table 3: Association between Socio-demographics and Health-Seeking Behavior on Cont’d

| **Variables** | **Treatment**  **Sought/Given** | **Treatment not Sought/Given** |  |  |
| --- | --- | --- | --- | --- |
| **Total** | **N = 4575** | **N = 2158** | **χ 2** | **p-value** |
| **Number of Living Children** | % (n) | %(n) |  |  |
| One | 69.1 (810) | 31.0 (363) | 1.37 | 0.849 |
| Two | 68.6 (868) | 31.4 (398) |  |  |
| Three | 67.6 (760) | 32.4 (364) |  |  |
| Four | 67.6 (659) | 32.4 (316) |  |  |
| Five and above | 67.3 (1478) | 32.7 (717) |  |  |
| **Media Exposure** |  |  |  |  |
| Not Exposed | 61.4 (1857) | 38.6 (1169) | 109.3 | <0.001\*\* |
| Exposed | 73.3 (2718) | 26.7 (989) |  |  |
| **Women Autonomy** |  |  |  |  |
| None | 64.8 (2280) | 35.2 (1238) | 36.35 | <0.001\*\* |
| Partial Autonomy | 72.5 (1462) | 27.5 (555) |  |  |
| Full Autonomy | 69.5 (833) | 30.5 (365) |  |  |
| **Place of Residence** |  |  |  |  |
| Urban | 75.5 (1464) | 24.5 (476) | 70.67 | <0.001\*\* |
| Rural | 64.9 (3111) | 35.1 (1682) |  |  |
| **Region** |  |  |  |  |
| North Central | 64.1 (622) | 35.9 (348) | 89.14 | <0.001\*\* |
| North East | 62.1 (1326) | 38.0 (811) |  |  |
| North West | 72.3 (1597) | 27.7 (612) |  |  |
| South East | 70.6 (385) | 29.4 (160) |  |  |
| South South | 78.7 (409) | 21.4 (111) |  |  |
| South West | 67.1 (236) | 33.0 (116) |  |  |

\*\*p<0.001, \*p<0.05 \*- significant \*\* - highly significant

4.4 Association between Socio-demographic Characteristics and Women's Autonomy

Table 4 shows the association between demographic characteristics and women's autonomy in household decision making based on their level of autonomy: no autonomy, partial autonomy, and full autonomy. The results showed that younger women aged 15-24 are less likely to have autonomy compared to older women aged 25-34 and 35-49 (p<0.001).

Respondents socio-demographic characteristics such as educational status (χ2=1180.6, p<0.001), partners’ education status (χ2=819.8, p<0.001), marital status (χ2=133.6, p<0.001), occupation (χ2=405.1, p<0.001), religion (χ2=1536.4, p<0.001), wealth status (χ2=577.0, p<0.001), ethnicity (χ2=1391.9, p<0.001), number of under-5 children (χ2=154.2, p<0.001), number of lost children (χ2=120.0, p<0.001) were significantly associated with women's autonomy.

Overall, the findings suggest that women's autonomy in household decision-making is influenced by various demographic characteristics, including age, education, partner's education, marital status, occupation status, religion, wealth status, ethnicity, and number of children. This highlights the need for policies and programs that address these factors to promote gender equality and women's empowerment.

Table 4: Association between Socio-demographic Characteristics and Women's Autonomy

| **Variables** | **No Autonomy** | **Partial Autonomy** | **Full Autonomy** |  |  |
| --- | --- | --- | --- | --- | --- |
| **Total** | **N = 6733** | **N = 6733** | **N = 6733** | **χ 2** | **p-value** |
| Sub-Total | 52.3 (3518) | 30.0 (2017) | 17.8 (1198) |  |  |
| **Age** | % (n) | %(n) | %(n) |  |  |
| 15-24 | 58.4 (1041) | 30.5 (544) | 11.2 (199) | 85.4 | <0.001\*\* |
| 25-34 | 51.4 (1628) | 28.5 (903) | 20.1 (636) |  |  |
| 35-49 | 47.6 (849) | 32.0 (570) | 20.4 (363) |  |  |
| **Education** |  |  |  |  |  |
| None | 68.9 (2438) | 25.5 (901) | 5.6 (199) | 1180.6 | <0.001\*\* |
| Primary | 42.8 (458) | 34.7 (371) | 22.5 (241) |  |  |
| Secondary | 31.1 (551) | 34.6 (613) | 34.2 (606) |  |  |
| Tertiary | 20.0 (71) | 37.2 (132) | 42.8 (152) |  |  |
| **Partner’s Education** |  |  |  |  |  |
| None | 70.5 (1982) | 24.2 (679) | 5.3 (149) | 819.8 | <0.001\*\* |
| Primary | 45.6 (429) | 32.4 (305) | 22 (207) |  |  |
| Secondary | 35.8 (752) | 34.8 (730) | 29.4 (617) |  |  |
| Tertiary | 40.2 (355) | 34.3 (303) | 25.5 (225) |  |  |
| **Marital Status** |  |  |  |  |  |
| Married | 53.3 (3487) | 29.7 (1945) | 17 (1113) | 133.6 | <0.001\*\* |
| Co-habiting | 16.5 (31) | 38.3 (72) | 45.2 (85) |  |  |
| **Occupation Status** |  |  |  |  |  |
| Unemployed | 69.1 (1503) | 23.1 (502) | 7.8 (170) | 405.1 | <0.001\*\* |
| Employed | 44.2 (2015) | 33.2 (1515) | 22.6 (1028) |  |  |
| **Religion** |  |  |  |  |  |
| Christianity | 21.7 (442) | 36.3 (741) | 42.1 (859) | 1536.4 | <0.001\*\* |
| Islam | 65.6 (3060) | 27.2 (1270) | 7.2 (335) |  |  |
| Other | 61.5 (16) | 23.1 (6) | 15.4 (4) |  |  |
| **Wealth Status** |  |  |  |  |  |
| Poor | 64.1 (2342) | 25.7 (940) | 10.2 (371) | 577.0 | <0.001\*\* |
| Middle | 44.3 (611) | 33.7 (464) | 22 (303) |  |  |
| Rich | 33.2 (565) | 36 (613) | 30.8 (524) |  |  |
| **Ethnicity** |  |  |  |  |  |
| Yoruba | 27.3 (91) | 37.5 (125) | 35.1 (117) | 1391.9 | <0.001\*\* |
| Igbo | 16.3 (106) | 30.5 (199) | 53.2 (347) |  |  |
| Hausa | 68.4 (2414) | 26.9 (948) | 4.7 (166) |  |  |
| Other | 40.9 (907) | 33.6 (745) | 25.6 (568) |  |  |
| **Number of under-5 Children** |  |  |  |  |  |
| One | 45.9 (1004) | 32.1 (703) | 22 (480) | 154.2 | <0.001\*\* |
| Two | 51.2 (1292) | 29 (732) | 19.9 (502) |  |  |
| Three | 57.8 (651) | 28.1 (317) | 14.1 (159) |  |  |
| Four and above | 63.9 (571) | 29.7 (265) | 6.4 (57) |  |  |

Table 4: Association between Socio-demographic Characteristics and Women's Autonomy Cont’d

| **Variables** | **No Autonomy** | **Partial Autonomy** | **Full Autonomy** |  |  |
| --- | --- | --- | --- | --- | --- |
| **Total** | **N = 6733** | **N = 6733** | **N = 6733** | **χ 2** | **p-value** |
| **Number of Children Lost** |  |  |  |  |  |
| None | 48.4 (2122) | 31.2 (1368) | 20.4 (893) | 120.0 | <0.001\*\* |
| One | 55.1 (713) | 29.4 (381) | 15.5 (201) |  |  |
| Two | 62.7 (388) | 24.9 (154) | 12.4 (77) |  |  |
| Three and above | 67.7 (295) | 26.2 (114) | 6.2 (27) |  |  |
| **Number of Living Children** |  |  |  |  |  |
| One | 51.5 (604) | 30.9 (362) | 17.7 (207) | 26.8 | 0.0008 |
| Two | 51.8 (656) | 28.7 (363) | 19.5 (247) |  |  |
| Three | 48.7 (547) | 30.3 (340) | 21.1 (237) |  |  |
| Four | 53.1 (518) | 28.4 (277) | 18.5 (180) |  |  |
| Five and above | 54.4 (1193) | 30.8 (675) | 14.9 (327) |  |  |
| **Media Exposure** |  |  |  |  |  |
| Not Exposed | 63.4 (1918) | 26.4 (798) | 10.2 (310) | 330.0 | <0.001\*\* |
| Exposed | 43.2 (1600) | 32.9 (1219) | 24 (888) |  |  |
| **Place of Residence** |  |  |  |  |  |
| Urban | 37.3 (723) | 34.4 (667) | 28.4 (550) | 305.6 | <0.001\*\* |
| Rural | 58.3 (2795) | 28.2 (1350) | 13.5 (648) |  |  |
| **Region** |  |  |  |  |  |
| North Central | 47.2 (458) | 34.5 (335) | 18.3 (177) | 1363.6 | <0.001\*\* |
| North East | 57 (1219) | 29.5 (630) | 13.5 (288) |  |  |
| North West | 70.5 (1558) | 25 (553) | 4.4 (98) |  |  |
| South East | 15.1 (82) | 30.6 (167) | 54.3 (296) |  |  |
| South South | 21.4 (111) | 36.9 (192) | 41.7 (217) |  |  |
| South West | 25.6 (90) | 39.8 (140) | 34.7 (122) |  |  |

\*\*p<0.001, \*p<0.05 \*- significant \*\* - highly significant

4.5 Association between Socio-demographic Characteristics, Autonomy and Health Seeking Behaviour of the Respondents by Region

4.5.1 Association between Socio-demographic Characteristics, Autonomy and Health Seeking Behaviour of the Respondents in North-Central Region

Table 5 shows the association between socio-demographic characteristics, autonomy and treatment in north-central region. There was an association between mother and partner’s education level, religion, wealth status, number of living children, media exposure, place of residence, women autonomy, no autonomy and no treatment in north-central. Age, marital status, occupation, ethnicity, no of under-5 children, no of children lost were not associated with treatment in this region.

Almost half (46.9%) of respondents without education had no treatment compared with respondents with secondary education (28.0%), which was statistically significant at p< 0.000. Partner’s educational status was also found to be statistically significant at p< 0.000. Religion was found to be statistically significant to the level of health seeking behavior of the respondents (p<0.005). Respondents that fell within the poor wealth status (43.1%) had no treatment compared those that were within the middle class, which was statistically significant at p< 0.0001. An association were found between respondents number of living children (p<0.004), media exposure (p<0.000), place of residence (p<0.047), women autonomy (0<0.000), no autonomy (p<0.0002) and their health seeking bahaviour in north-central region.

Table 5: Association between Socio-Demographic Characteristics, Autonomy and Health Seeking Behaviour in North-Central Region.

| **Variables** | **No Treatment (North Central)** | |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **No n(%)** | **Yes n (%)** | **Total** | ***X*2** | **p-value** |
| **Age** |  |  |  |  |  |
| 15-24 | 177 (67.82) | 84 (32.18) | 261 | 5.73 | 0.057 |
| 25-34 | 312 (65.14) | 167 (34.86) | 479 |  |  |
| 35-49 | 133 (57.83) | 97 (42.17) | 230 |  |  |
| **Education** |  |  |  |  |  |
| None | 207 (53.08) | 183 (46.92) | 390 | 37.35 | <0.000\*\* |
| Primary | 127 (67.91) | 60 (32.09) | 187 |  |  |
| Secondary | 226 (71.97) | 88 (28.03) | 314 |  |  |
| Tertiary | 62 (78.48) | 17 (21.52) | 79 |  |  |
| **Partner’s Education** |  |  |  |  |  |
| None | 163 (50.31) | 161 (49.69) | 324 | 44.09 | <0.000\*\* |
| Primary | 82 (68.33) | 38 (31.67) | 120 |  |  |
| Secondary | 251 (69.15) | 112 (30.85) | 363 |  |  |
| Tertiary | 126 (77.30) | 37 (22.70) | 163 |  |  |
| **Marital Status** |  |  |  |  |  |
| Married | 615 (64.13) | 344 (35.87) | 959 | 0.00 | 0.973 |
| Co-habiting | 7(63.64) | 4 (36.36) | 11 |  |  |
| **Occupation Status** |  |  |  |  |  |
| Unemployed | 166 (59.93) | 111 (40.07) | 277 | 2.97 | 0.085 |
| Employed | 456 (65.80) | 237 (34.20) | 693 |  |  |
| **Religion** |  |  |  |  |  |
| Christianity | 284 (69.78) | 123 (30.22) | 407 | 10.63 | 0.005\* |
| Islam | 336 (60.22) | 222 (39.78) | 558 |  |  |
| Other | 2 (40.0) | 3 (60.0) | 5 |  |  |
| **Wealth Status** |  |  |  |  |  |
| Poor | 240 (56.87) | 182 (43.13) | 422 | 18.11 | <0.0001\*\* |
| Middle | 145 (67.13) | 71 (32.87) | 216 |  |  |
| Rich | 237 (71.39) | 95 (28.61) | 332 |  |  |
| **Ethnicity** |  |  |  |  |  |
| Yoruba | 43 (66.15) | 22 (33.85) | 65 | 7.31 | 0.062 |
| Igbo | 23 (74.19) | 8 (25.85) | 31 |  |  |
| Hausa | 102 (56.04) | 80 (43.96) | 182 |  |  |
| Other | 454 (65.61) | 238 (34.39) | 692 |  |  |
| **Number of under-5 Children** | |  |  |  |  |
| One | 231 (64.71) | 126 (35.29) | 357 | 7.47 | 0.058 |
| Two | 259 (66.41) | 131 (33.59) | 390 |  |  |
| Three | 83 (64.84) | 45 (35.16) | 128 |  |  |
| Four and above | 49 (51.58) | 46 (48.42) | 95 |  |  |
| **Number of Children Lost** |  |  |  |  |  |
| None | 471 (65.24) | 251 (34.76) | 722 | 3.44 | 0.329 |
| One | 106 (63.10) | 62 (36.90) | 168 |  |  |
| Two | 30 (60.00) | 20 (40.00) | 50 |  |  |
| Three and above | 15 (50.00) | 15 (50.00) | 30 |  |  |
| **Number of Living Children** |  |  |  |  |  |
| One | 148 (71.84) | 58 (28.16) | 206 | 15.48 | 0.004\* |
| Two | 129 (64.82) | 70 (35.18) | 199 |  |  |
| Three | 119 (69.59) | 52 (30.41) | 171 |  |  |
| Four | 83 (58.04) | 60 (41.96) | 143 |  |  |
| Five and above | 143 (56.97) | 108 (43.03) | 251 |  |  |
| **Media Exposure** |  |  |  |  |  |
| Not Exposed | 241 (55.40) | 194 (44.60) | 435 | 26.08 | <0.000\*\* |
| Exposed | 381 (71.21) | 154 (28.79) | 535 |  |  |
| **Place of Residence** |  |  |  |  |  |
| Urban | 191 (68.95) | 86 (31.05) | 277 | 3.93 | 0.047\* |
| Rural | 431 (62.19) | 262 (37.81) | 693 |  |  |
| **Women Autonomy** |  |  |  |  |  |
| None | 255 (55.68) | 203 (44.32) | 458 | 29.39 | <0.000\*\* |
| Partial Autonomy | 232 (69.25) | 103 (30.75) | 335 |  |  |
| Full Autonomy | 135 (76.27) | 42 (23.73) | 177 |  |  |
| **No Autonomy** |  |  |  |  |  |
| No | 135 (76.27) | 42 (23.73) | 177 | 13.89 | <0.0002\*\* |
| Yes | 487 (61.41) | 306 (38.59) | 793 |  |  |

\*\*p<0.001, \*p<0.05 \*- significant \*\* - highly significant

4.5.2 Association between Socio-demographic Characteristics, Autonomy and Health Seeking Behaviour of the Respondents in North-East Region

Table 6 shows the association between socio-demographic characteristics, autonomy and health seeking behaviour in the north-east region.

Almost half (41.4%, 42.7%) of respondents and their partner’s with no education had no treatment which was statistically significant at p<0.000 respectively. Many (44.9%) of respondents who were unemployed had no treatment compared with those employed (34.9%), which was statistically significant at p< 0.000. Respondents who practice Christianity (43.8%) had no treatment compared to those who practiced Islam (37.0%), which was statistically significant at p< 0.026. Respondents wealth status, media exposure and place of residence were statistically significant with health seeking behavior at p<0.000 respectively in the north-east region.

Table 6: Association between Socio-Demographic Characteristics, Autonomy and Health Seeking Behaviour in North-East Region.

| **Variables** | **No Treatment (North-East)** | |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **No n (%)** | **Yes n (%)** | **Total** | ***X*2** | **p-value** |
| **Age** |  |  |  |  |  |
| 15-24 | 382 (59.32) | 262 (40.68) | 644 | 3.41 | 0.182 |
| 25-34 | 576 (62.54) | 345 (37.46) | 921 |  |  |
| 35-49 | 368 (64.34) | 204 (35.66) | 572 |  |  |
| **Education** |  |  |  |  |  |
| None | 863 (58.55) | 611 (41.45) | 1474 | 37.68 | <0.000\*\* |
| Primary | 196 (63.64) | 112 (36.36) | 308 |  |  |
| Secondary | 217 (73.06) | 80 (26.94) | 297 |  |  |
| Tertiary | 50 (86.21) | 8 (13.79) | 58 |  |  |
| **Partner’s Education** |  |  |  |  |  |
| None | 662 (57.27) | 494 (42.73) | 1156 | 43.24 | <0.000\*\* |
| Primary | 157 (59.70) | 106 (40.30) | 263 |  |  |
| Secondary | 330 (66.94) | 163 (33.06) | 493 |  |  |
| Tertiary | 177 (78.67) | 48 (21.33) | 225 |  |  |
| **Marital Status** |  |  |  |  |  |
| Married | 1311 (62.13) | 799 (37.87) | 2110 | 0.49 | 0.484 |
| Co-habiting | 15 (55.56) | 12 (44.44) | 27 |  |  |
| **Occupation Status** |  |  |  |  |  |
| Unemployed | 408 (55.06) | 333 (44.94) | 741 | 23.53 | <0.000\*\* |
| Employed | 918 (65.76) | 478 (34.95) | 1396 |  |  |
| **Religion** |  |  |  |  |  |
| Christianity | 164 (56.16) | 128 (43.84) | 292 | 4.97 | 0.026\* |
| Islam | 1162 (62.98) | 683 (37.02) | 1845 |  |  |
| Other |  |  |  |  |  |
| **Wealth Status** |  |  |  |  |  |
| Poor | 875 (57.53) | 647 (42.47) | 1521 | 60.55 | <0.000\*\* |
| Middle | 249 (67.12) | 122 (32.88) | 371 |  |  |
| Rich | 202 (82.45) | 43 (17.55) | 245 |  |  |
| **Ethnicity** |  |  |  |  |  |
| Yoruba | 2 (100.0) | 0 (0.00) | 2 | 6.07 | 0.108 |
| Igbo | 2 (66.67) | 1 (33.33) | 3 |  |  |
| Hausa | 749 (60.06) | 498 (39.94) | 1247 |  |  |
| Other | 573 (64.75) | 312 (35.25) | 885 |  |  |
| **Number of under-5 Children** | |  |  |  |  |
| One | 384 (63.47) | 221 (36.53) | 605 | 4.96 | 0.174 |
| Two | 496 (64.00) | 279 (36.00) | 775 |  |  |
| Three | 232 (58.59) | 164 (41.41) | 396 |  |  |
| Four and above | 214 (59.28) | 147 (40.72) | 361 |  |  |
| **Number of Children Lost** | |  |  |  |  |
| None | 849 (62.11) | 518 (37.89) | 1367 | 0.09 | 0.933 |
| One | 248 (62.00) | 152 (38.00) | 400 |  |  |
| Two | 135 (62.50) | 81 (37.50) | 216 |  |  |
| Three and above | 94 (61.04) | 60 (38.96) | 154 |  |  |
| **Number of Living Children** | |  |  |  |  |
| One | 216 (61.02) | 138 (38.98) | 354 | 7.27 | 0.122 |
| Two | 222 (60.66) | 144 (39.34) | 366 |  |  |
| Three | 188 (56.97) | 142 (43.03) | 330 |  |  |
| Four | 197 (62.54) | 118 (37.46) | 315 |  |  |
| Five and above | 503 (65.16) | 269 (34.84) | 772 |  |  |
| **Media Exposure** |  |  |  |  |  |
| Not Exposed | 735 (55.60) | 587 (44.40) | 1322 | 61.28 | <0.000\*\* |
| Exposed | 591 (72.52) | 224 (27.48) | 815 |  |  |
| **Place of Residence** |  |  |  |  |  |
| Urban | 295 (82.40) | 63 (17.60) | 358 | 75.65 | <0.000\*\* |
| Rural | 1031 (57.95) | 748 (42.05) | 1779 |  |  |
| **Women Autonomy** |  |  |  |  |  |
| None | 738 (60.54) | 481 (39.46) | 1219 | 4.67 | 0.097 |
| Partial Autonomy | 413 (65.56) | 217 (34.44) | 630 |  |  |
| Full Autonomy | 175 (60.76) | 113 (39.24) | 288 |  |  |
| **No Autonomy** |  |  |  |  |  |
| No | 175 (60.76) | 113 (39.24) | 288 | 0.23 | 0.629 |
| Yes | 1151 (62.25) | 698 (37.75) | 1849 |  |  |

\*\*p<0.001, \*p<0.05 \*- significant \*\* - highly significant

4.5.3 Association between Socio-demographic Characteristics, Autonomy and Health Seeking Behaviour of the Respondents in North-West Region

Table 7 shows the association between socio-demographic characteristics, autonomy and health seeking behaviour in the north-west region.

A statistical significant association was found between respondents and their partner’s educational status at p<0.000 respectively and health seeking behavior. Few (30.9%) of the respondents with poor wealth status had no treatment compared with the middle class (24.5%) and rich class (17.0%), which was statistically significant at p<0.000. Respondents ethnicity (p<0.004), media exposure (p<0.034), place of residence (p<0.003), women autonomy (p<0.000) and no autonomy (p<0.041) were statistically significant with health seeking behavior (treatment) in the north-west region of Nigeria.

Age, marital status, occupation, religion, number of under-5 children, number of lost children, and number of living children had no significant association with treatment among the respondents in north-west region.

Table 7: Association between Socio-Demographic Characteristics, Autonomy and Health Seeking Behaviour in North-West Region.

| **Variables** | **No Treatment (North-west)** | |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **No n (%)** | **Yes n (%)** | **Total** | ***X*2** | **p-value** |
| **Age** |  |  |  |  |  |
| 15-24 | 493 (75.04) | 164 (24.96) | 657 | 3.62 | 0.163 |
| 25-34 | 700 (70.85) | 288 (29.15) | 988 |  |  |
| 35-49 | 404 (71.63) | 160 (28.37) | 564 |  |  |
| **Education** |  |  |  |  |  |
| None | 1111 (68.84) | 503 (31.16) | 1614 | 37.24 | <0.000\*\* |
| Primary | 228 (79.44) | 59 (20.56) | 287 |  |  |
| Secondary | 224 (83.58) | 44 (16.42) | 268 |  |  |
| Tertiary | 34 (85.0) | 6 (15.0) | 40 |  |  |
| **Partner’s Education** |  |  |  |  |  |
| None | 841 (66.64) | 421 (33.36) | 1262 | 50.32 | <0.000\*\* |
| Primary | 218 (76.22) | 68 (23.78) | 286 |  |  |
| Secondary | 330 (80.29) | 81 (19.71) | 411 |  |  |
| Tertiary | 208 (83.20) | 42 (16.80) | 250 |  |  |
| **Marital Status** |  |  |  |  |  |
| Married | 1596 (72.28) | 612 (27.72) | 2208 | 0.38 | 0.536 |
| Co-habiting | 1 (100.0) | 0 (0.00) | 1 |  |  |
| **Occupation Status** |  |  |  |  |  |
| Unemployed | 646 (70.52) | 270 (29.48) | 916 | 2.45 | 0.117 |
| Employed | 951 (73.55) | 342 (26.45) | 1293 |  |  |
| **Religion** |  |  |  |  |  |
| Christianity | 49 (71.01) | 20 (28.99) | 69 | 2.31 | 0.315 |
| Islam | 1537 (72.23) | 591 (27.77) | 2128 |  |  |
| Other | 11 (91.67) | 1 (8.33) | 12 |  |  |
| **Wealth Status** |  |  |  |  |  |
| Poor | 1011 (69.01) | 454 (30.99) | 1465 | 28.48 | <0.000\*\* |
| Middle | 318 (75.53) | 103 (24.47) | 421 |  |  |
| Rich | 268 (82.97) | 55 (17.03) | 323 |  |  |
| **Ethnicity** |  |  |  |  |  |
| Yoruba | 2 (100.0) | 0 (0.00) | 2 | 13.14 | 0.004\* |
| Igbo | 1 (50.00) | 1 (50.00) | 2 |  |  |
| Hausa | 1525 (73.07) | 562 (26.93) | 2087 |  |  |
| Other | 69 (58.47) | 49 (41.53) | 118 |  |  |
| **Number of under-5 Children** |  |  |  |  |  |
| One | 437 (70.94) | 179 (29.06) | 616 | 0.82 | 0.844 |
| Two | 573 (72.62) | 216 (27.38) | 789 |  |  |
| Three | 306 (72.86) | 114 (27.14) | 420 |  |  |
| Four and above | 281 (73.18) | 103 (26.82) | 384 |  |  |
| **Number of Children Lost** |  |  |  |  |  |
| None | 864 (74.23) | 300 (25.77) | 1164 | 4.78 | 0.188 |
| One | 361 (69.56) | 158 (30.44) | 519 |  |  |
| Two | 208 (70.99) | 85 (29.01) | 293 |  |  |
| Three and above | 164 (70.39) | 69 (29.61) | 233 |  |  |
| **Number of Living Children** |  |  |  |  |  |
| One | 257 (71.99) | 100 (28.01) | 357 | 1.68 | 0.794 |
| Two | 287 (72.84) | 107 (27.16) | 394 |  |  |
| Three | 238 (74.61) | 81 (25.39) | 319 |  |  |
| Four | 227 (72.99) | 84 (27.01) | 311 |  |  |
| Five and above | 588 (71.01) | 240 (28.99) | 828 |  |  |
| **Media Exposure** |  |  |  |  |  |
| Not Exposed | 773 (70.27) | 327 (29.73) | 1100 | 4.47 | 0.034\* |
| Exposed | 824 (74.30) | 285 (25.70) | 1109 |  |  |
| **Place of Residence** |  |  |  |  |  |
| Urban | 395 (77.45) | 115 (22.55) | 510 | 8.80 | 0.003\* |
| Rural | 1202 (70.75) | 497 (29.25) | 1699 |  |  |
| **Women Autonomy** |  |  |  |  |  |
| None | 1097 (70.41) | 461 (29.59) | 158 | 19.93 | <0.000\*\* |
| Partial Autonomy | 438 (79.20) | 115 (20.80) | 553 |  |  |
| Full Autonomy | 62 (63.27) | 36 (36.73) | 98 |  |  |
| **No Autonomy** |  |  |  |  |  |
| No | 62 (63.27) | 36 (36.73) | 98 | 4.17 | 0.041\* |
| Yes | 1535 (72.71) | 576 (27.29) | 2111 |  |  |

\*\*p<0.001, \*p<0.05 \*- significant \*\* - highly significant

4.5.4 Association between Socio-demographic Characteristics, Autonomy and Health Seeking Behaviour of the Respondents in South-East Region

Table 8 shows the association between socio-demographic characteristics, autonomy and health seeking behaviour in south-east region.

Two-thirds (66.7%) of respondents partner’s without education had desire to seek treatment which was statistically significant at p<0.010. A significant association was found between respondents who were married (28.5%) and no treatment compared to 45.5% who were co-habiting at p<0.036. Wealth status (p<0.006) and women autonomy (p<0.004) were statistically significant to health seeking behavior among the respondents in south-east region in Nigeria.

Table 8: Association between Socio-Demographic Characteristics, Autonomy and Health Seeking Behaviour in South-East Region.

| **Variables** | **No Treatment (South-East)** | |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **No n (%)** | **Yes n (%)** | **Total** | ***X*2** | **p-value** |
| **Age** |  |  |  |  |  |
| 15-24 | 44 (60.27) | 29 (39.73) | 73 | 5.01 | 0.082 |
| 25-34 | 227 (73.46) | 82 (26.54) | 309 |  |  |
| 35-49 | 114 (69.94) | 49 (30.06) | 163 |  |  |
| **Education** |  |  |  |  |  |
| None | 8 (61.54) | 5 (38.46) | 13 | 1.24 | 0.742 |
| Primary | 87 (73.73) | 31 (26.27) | 118 |  |  |
| Secondary | 249 (69.75) | 108 (30.25) | 357 |  |  |
| Tertiary | 41 (71.93) | 16 (28.07) | 57 |  |  |
| **Partner’s Education** |  |  |  |  |  |
| None | 5 (33.33) | 10 (66.67) | 15 | 11.30 | 0.010\* |
| Primary | 115 (68.86) | 52 (31.14) | 167 |  |  |
| Secondary | 229 (72.93) | 85 (27.07) | 314 |  |  |
| Tertiary | 36 (73.47) | 13 (26.53) | 49 |  |  |
| **Marital Status** |  |  |  |  |  |
| Married | 367 (71.68) | 145 (28.32) | 512 | 4.39 | 0.036\* |
| Co-habiting | 18 (54.55) | 15 (45.45) | 33 |  |  |
| **Occupation Status** |  |  |  |  |  |
| Unemployed | 47 (65.28) | 25 (34.72) | 72 | 1.15 | 0.283 |
| Employed | 338 (71.46) | 135 (28.54) | 473 |  |  |
| **Religion** |  |  |  |  |  |
| Christianity | 380 (70.50) | 159 (29.50) | 539 | 0.63 | 0.729 |
| Islam | 1 (100.0) | 0 (0.00) | 1 |  |  |
| Other | 4 (80.00) | 1 (20.00) | 5 |  |  |
| **Wealth Status** |  |  |  |  |  |
| Poor | 56 (58.33) | 40 (41.67) | 96 | 10.17 | 0.006\* |
| Middle | 120 (69.77) | 52 (30.23) | 172 |  |  |
| Rich | 209 (75.45) | 68 (24.55) | 277 |  |  |
| **Ethnicity** |  |  |  |  |  |
| Yoruba | 374 (70.30) | 158 (29.70) | 532 | 1.38 | 0.502 |
| Igbo | 1 (100.0) | 0 (0.00) | 1 |  |  |
| Hausa | 10 (83.33) | 2 (16.67) | 12 |  |  |
| Other |  |  |  |  |  |
| **Number of under-5 Children** | 131 (69.31) | 58 (30.69) | 189 | 1.31 | 0.726 |
| One | 159 (71.95) | 62 (28.05) | 221 |  |  |
| Two | 71 (68.27) | 33 (31.73) | 104 |  |  |
| Three | 24 (77.42) | 7 (22.58) | 31 |  |  |
| Four and above |  |  |  |  |  |
| **Number of Children Lost** | 311 (71.49) | 124 (28.51) | 435 | 3.31 | 0.346 |
| None | 56 (70.00) | 24 (30.00) | 80 |  |  |
| One | 14 (66.67) | 7 (33.33) | 21 |  |  |
| Two | 4 (44.44) | 5 (55.56) | 9 |  |  |
| Three and above |  |  |  |  |  |
| **Number of Living Children** | 55 (64.71) | 30 (35.29) | 85 | 3.32 | 0.506 |
| One | 76 (74.51) | 26 (25.49) | 102 |  |  |
| Two | 80 (74.77) | 27 (25.23) | 107 |  |  |
| Three | 63 (68.48) | 29 (31.52) | 92 |  |  |
| Four | 111 (69.81) | 48 (30.19) | 159 |  |  |
| Five and above |  |  |  |  |  |
| **Media Exposure** | 41 (63.08) | 24 (36.92) | 65 | 2.04 | 0.153 |
| Not Exposed | 344 (71.67) | 136 (28.33) | 480 |  |  |
| Exposed |  |  |  |  |  |
| **Place of Residence** | 252 (69.42) | 111 (30.58) | 363 | 0.78 | 0.376 |
| Urban | 133 (73.08) | 49 (26.92) | 182 |  |  |
| Rural |  |  |  |  |  |
| **Women Autonomy** | 46 (56.10) | 36 (43.90) | 82 | 11.33 | 0.004\* |
| None | 128 (76.65) | 39 (23.35) | 167 |  |  |
| Partial Autonomy | 211 (71.28) | 85 (28.72) | 296 |  |  |
| Full Autonomy |  |  |  |  |  |
| **No Autonomy** | 211 (71.28) | 85 (28.72) | 296 | 0.13 | 0.720 |
| No | 174 (69.88) | 75 (30.12) | 249 |  |  |
| Yes |  |  |  |  |  |

\*\*p<0.001, \*p<0.05 \*- significant \*\* - highly significant

4.5.5 Association between Socio-demographic Characteristics, Autonomy and Health Seeking Behaviour of the Respondents in South-South Region

Table 9 shows the association between socio-demographic characteristics, autonomy and health seeking behaviour in south-south region.

A statistical significant association were found between the educational status (p<0.027), occupational status (p<0.027), religion (p<0.016), wealth status (p<0.005), place of residence (p<0.001) and the health seeking behavior (treatment) of respondents in south-south, Nigeria.

Whereas, the respondents age, partner’s educational status, marital status, ethnicity, number of under-5 children, number of children lost, number of living children, media exposure, women autonomy, no autonomy had no significant association with health seeking behavior (treatment) in south-south region of Nigeria.

Table 9: Association between Socio-Demographic Characteristics, Autonomy and Health Seeking Behaviour in South-South Region.

| **Variables** | **No Treatment (South-South)** | |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **No n (%)** | **Yes n (%)** | **Total** | ***X*2** | **p-value** |
| **Age** |  |  |  |  |  |
| 15-24 | 74 (79.57) | 19 (20.43) | 93 | 0.08 | 0.961 |
| 25-34 | 223 (78.25) | 62 (21.75) | 285 |  |  |
| 35-49 | 112 (78.87) | 30 (21.13) | 142 |  |  |
| **Education** |  |  |  |  |  |
| None | 11 (61.11) | 7 (38.89) | 18 | 9.19 | 0.027\* |
| Primary | 81 (75.0) | 27 (25.0) | 108 |  |  |
| Secondary | 261 (78.61) | 71 (21.39) | 332 |  |  |
| Tertiary | 56 (90.32) | 6 (9.68) | 62 |  |  |
| **Partner’s Education** |  |  |  |  |  |
| None | 12 (66.67) | 6 (33.33) | 18 | 6.44 | 0.092 |
| Primary | 48 (72.73) | 18 (27.27) | 66 |  |  |
| Secondary | 266 (78.24) | 74 (21.76) | 340 |  |  |
| Tertiary | 83 (86.46) | 13 (13.54) | 96 |  |  |
| **Marital Status** |  |  |  |  |  |
| Married | 363 (79.43) | 94 (20.57) | 457 | 1.36 | 0.244 |
| Co-habiting | 46 (73.02) | 17 (26.98) | 63 |  |  |
| **Occupation Status** |  |  |  |  |  |
| Unemployed | 88 (71.54) | 35 (28.46) | 123 | 4.85 | 0.027\* |
| Employed | 321 (80.86) | 76 (19.14) | 397 |  |  |
| **Religion** |  |  |  |  |  |
| Christianity | 398 (79.44) | 103 (20.56) | 501 | 8.33 | 0.016\* |
| Islam | 10 (66.67) | 5 (33.33) | 15 |  |  |
| Other | 1 (25.00) | 3 (75.00) | 4 |  |  |
| **Wealth Status** |  |  |  |  |  |
| Poor | 63 (74.12) | 22 (25.88) | 85 | 10.34 | 0.005\* |
| Middle | 97 (70.80) | 40 (29.20) | 137 |  |  |
| Rich | 249 (83.56) | 49 (16.44) | 298 |  |  |
| **Ethnicity** |  |  |  |  |  |
| Yoruba | 4 (66.67) | 2 (33.33) | 6 | 0.55 | 0.761 |
| Igbo | 46 (77.97) | 13 (22.03) | 59 |  |  |
| Other | 359 (78.90) | 96 (21.10) | 455 |  |  |
| **Number of under-5 Children** |  |  |  |  |  |
| One | 183 (81.33) | 42 (18.67) | 225 | 2.68 | 0.444 |
| Two | 173 (75.88) | 55 (24.12) | 228 |  |  |
| Three | 40 (76.92) | 12 (23.08) | 52 |  |  |
| Four and above | 13 (86.67) | 2 (13.33) | 15 |  |  |
| **Number of Children Lost** |  |  |  |  |  |
| None | 323 (78.02) | 91 (21.98) | 414 | 0.92 | 0.821 |
| One | 62 (81.58) | 14 (18.42) | 76 |  |  |
| Two | 19 (82.61) | 4 (17.39) | 23 |  |  |
| Three and above | 5 (71.43) | 2 (28.57) | 7 |  |  |
| **Number of Living Children** |  |  |  |  |  |
| One | 82 (85.42) | 14 (14.58) | 96 | 5.83 | 0.212 |
| Two | 98 (75.97) | 31 (24.03) | 129 |  |  |
| Three | 76 (73.08) | 28 (26.92) | 104 |  |  |
| Four | 58 (82.86) | 12 (17.14) | 70 |  |  |
| Five and above | 95 (78.51) | 26 (21.49) | 121 |  |  |
| **Media Exposure** |  |  |  |  |  |
| Not Exposed | 49 (70.00) | 21 (30.00) | 70 | 3.61 | 0.057 |
| Exposed | 360 (80.00) | 90 (20.00) | 450 |  |  |
| **Place of Residence** |  |  |  |  |  |
| Urban | 162 (86.63) | 25 (13.37) | 187 | 11.07 | <0.001\*\* |
| Rural | 247 (74.17) | 86 (25.83) | 333 |  |  |
| **Women Autonomy** |  |  |  |  |  |
| None | 87 (78.38) | 24 (21.62) | 111 | 0.20 | 0.903 |
| Partial Autonomy | 153 (79.69) | 39 (20.31) | 192 |  |  |
| Full Autonomy | 169 (77.88) | 48 (22.12) | 217 |  |  |
| **No Autonomy** |  |  |  |  |  |
| No | 169 (77.88) | 48 (22.12) | 217 | 0.13 | 0.716 |
| Yes | 240 (79.21) | 63 (20.79) | 303 |  |  |

\*\*p<0.001, \*p<0.05 \*- significant \*\* - highly significant

4.5.6 Association between Socio-demographic Characteristics, Autonomy and Health Seeking Behaviour of the Respondents in South-West Region

Table 10 shows the association between socio-demographic characteristics, autonomy and health seeking behaviour in south-west region.

Among the socio-demographic characteristics of the respondent in south-west region of Nigeria, only partner’s educational status (p<0.028) was found be statistically significant to treatment.

Age, educational status, marital status, occupation, ethnicity, religion, wealth status, no of under-5 children, no of children lost, number of living children, media exposure, place of residence, women autonomy, and no autonomy were not associated with treatment in this region.

Table 10: Association between Socio-Demographic Characteristics, Autonomy and Health Seeking Behaviour in South-West Region.

| **Variables** | **No Treatment (South-West)** | |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **No n (%)** | **Yes n (%)** | **Total** | ***X*2** | **p-value** |
| **Age** |  |  |  |  |  |
| 15-24 | 41 (73.21) | 15 (26.79) | 56 | 1.23 | 0.541 |
| 25-34 | 123 (66.49) | 62 (33.51) | 185 |  |  |
| 35-49 | 72 (64.86) | 39 (35.14) | 111 |  |  |
| **Education** |  |  |  |  |  |
| None | 17 (58.62) | 12 (41.38) | 29 | 3.79 | 0.285 |
| Primary | 43 (69.35) | 19 (30.65) | 62 |  |  |
| Secondary | 131 (64.85) | 71 (35.15) | 202 |  |  |
| Tertiary | 45 (76.27) | 14 (23.73) | 59 |  |  |
| **Partner’s Education** |  |  |  |  |  |
| None | 22 (62.86) | 13 (37.14) | 35 | 9.12 | 0.028\* |
| Primary | 25 (64.0) | 14 (35.90) | 39 |  |  |
| Secondary | 110 (61.80) | 68 (38.20) | 178 |  |  |
| Tertiary | 79 (79.0) | 21 (21.0) | 100 |  |  |
| **Marital Status** |  |  |  |  |  |
| Married | 205 (68.56) | 94 (31.44) | 299 | 2.07 | 0.151 |
| Co-habiting | 31 (58.49) | 22 (41.51) | 53 |  |  |
| **Occupation Status** |  |  |  |  |  |
| Unemployed | 31 (67.39) | 15 (32.61) | 46 | 0.00 | 0.957 |
| Employed | 205 (66.99) | 101 (33.01) | 306 |  |  |
| **Religion** |  |  |  |  |  |
| Christianity | 151 (64.53) | 83 (35.47) | 234 | 2.00 | 0.157 |
| Islam | 85 (72.03) | 33 (27.97) | 118 |  |  |
| **Wealth Status** |  |  |  |  |  |
| Poor | 36 (56.25) | 28 (43.75) | 64 | 5.19 | 0.075 |
| Middle | 39 (63.93) | 22 (36.07) | 61 |  |  |
| Rich | 161 (70.93) | 66 (29.07) | 227 |  |  |
| **Ethnicity** |  |  |  |  |  |
| Yoruba | 171 (66.28) | 87 (33.72) | 258 | 0.51 | 0.917 |
| Igbo | 18 (72.00) | 7 (28.00) | 25 |  |  |
| Hausa | 8 (72.73) | 3 (27.27) | 11 |  |  |
| Other | 39 (67.24) | 19 (32.76) | 58 |  |  |
| **Number of under-5 Children** |  |  |  |  |  |
| One | 132 (67.69) | 63 (32.31) | 195 | 0.18 | 0.981 |
| Two | 81 (65.85) | 42 (34.15) | 123 |  |  |
| Three | 18 (66.67) | 9 (33.33) | 27 |  |  |
| Four and above | 5 (71.43) | 2 (28.57) | 7 |  |  |
| **Number of Children Lost** |  |  |  |  |  |
| None | 193 (68.68) | 88 (31.32) | 281 | 3.03 | 0.387 |
| One | 33 (63.46) | 19 (36.54) | 52 |  |  |
| Two | 9 (56.25) | 7 (43.75) | 16 |  |  |
| Three and above | 1 (33.33) | 2 (66.67) | 3 |  |  |
| **Number of Living Children** |  |  |  |  |  |
| One | 52 (69.33) | 23 (30.67) | 75 | 4.18 | 0.383 |
| Two | 56 (73.68) | 20 (26.32) | 76 |  |  |
| Three | 59 (63.44) | 34 (36.56) | 93 |  |  |
| Four | 31 (70.45) | 13 (29.55) | 44 |  |  |
| Five and above | 38 (59.38) | 26 (40.63) | 64 |  |  |
| **Media Exposure** |  |  |  |  |  |
| Not Exposed | 18 (52.94) | 16 (47.06) | 34 | 3.39 | 0.066 |
| Exposed | 218 (68.55) | 100 (31.45) | 318 |  |  |
| **Place of Residence** |  |  |  |  |  |
| Urban | 169 (68.98) | 76 (31.02) | 245 | 1.36 | 0.243 |
| Rural | 67 (62.62) | 40 (37.38) | 107 |  |  |
| **Women Autonomy** |  |  |  |  |  |
| None | 57 (63.33) | 33 (36.67) | 90 | 1.14 | 0.566 |
| Partial Autonomy | 98 (70.00) | 42 (30.00) | 140 |  |  |
| Full Autonomy | 81 (66.39) | 41 (33.61) | 122 |  |  |
| **No Autonomy** |  |  |  |  |  |
| No | 81 (66.39) | 41 (33.61) | 122 | 0.04 | 0.850 |
| Yes | 155 (67.39) | 75 (32.61) | 230 |  |  |

\*\*p<0.001, \*p<0.05 \*- significant \*\* - highly significant