ASSESSMENT OF THE EFFECT OF COVID-19 ON THE HEALTH BELIEFS AND SEEKING BEHAVIOUR OF MOTHERS OF UNDER-5 IN OLUKU COMMUNITY, BENIN CITY, EDO STATE

BY

KELVIN ODION ORIAKHI MED1404724

OSASU WISDOM OSHODIN MED1404730

SUPERVISED BY:

Prof. V. Y ADAM

May, 2023

ASSESSMENT OF THE EFFECT OF COVID-19 ON THE HEALTH BELIEFS AND SEEKING BEHAVIOUR OF MOTHERS OF UNDER-5 IN OLUKU COMMUNITY, BENIN CITY, EDO STATE

BY

KELVIN ODION ORIAKHI MED1404724

OSASU WISDOM OSHODIN MED1404730

BEING A ONE YEAR PROJECT PRESENTED TO THE DEPARTMENT OF COMMUNITY HEALTH, SCHOOL OF MEDICINE, COLLEGE OF MEDICAL SCIENCES, UNIVERSITY OF BENIN, BENIN CITY, EDO STATE, NIGERIA.

IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF BACHELOR IN MEDICINE AND BACHELOR IN SURGERY (M.B.B.S) DEGREE IN UNIVERSITY OF BENIN, BENIN CITY.

MAY, 2023

DEDICATION

We dedicate this work to the almighty God, for His mercies and strength bestowed upon us to successfully complete this work. We also dedicate this project to our family members whose love and financial support has brought us thus far, to our esteemed teachers for their impact through the years and our friends for the encouragement.

DECLARATION

We hereby declare that this proposal titled "**Assessment of the effect of COVID-19 on the health beliefs and seeking behaviour of mothers of under-5 in Oluku community, Benin city, Edo state**" is original and was conducted under supervision of Prof. V. Y Adam and has not been published anywhere for the award of a degree or certificate.

KELVIN ODION ORIAKHI

MED1404724

08103641149

Oriakhi97@gmail.com

OSASU WISDOM OSHODIN

MED1404730

07066455621

oshodin.osasu@gmail.com

CERTIFICATION

This document serves as an official certification for the research study titled **"Assessment of the effect of COVID-19 on the health beliefs and seeking behaviour of mothers of under-5 in Oluku community, Benin city, Edo state"** was carried out by **ORIAKI KELVIN ODION** with matriculation number **MED1404724 a**nd **OSHODIN OSASU WISDOM** with matriculation number **MED1404730** under supervision in the Department of Community Health, School of Medicine, University of Benin as part of the requirements for the award of Bachelor of Medicine, Bachelor of Surgery (MBBS).

Prof. V.Y Adam	**Dr. Andrew Obi**
(MBBS, MPH, FRSPH, FWACP, FMCPH)	**(MBBS, MPH, FMCPH)**
PROJECT SUPERVISOR	**HEAD OF DEPARTMENT**
Department of Community Health,	Department of Community Health,
School of Medicine,	School of Medicine,
University of Benin,	University of Benin,
Benin-city, Edo, Nigeria.	Benin-city, Edo, Nigeria.

ACKNOWLEDGEMENT

We wish to acknowledge our Father in heaven for giving us the grace and strength to complete this work.

We wish to also express our profound gratitude to the Department of Community Health, University of Benin for the opportunity to carry out this study and to our project supervisor, Professor V.Y ADAM, we are grateful for the countless hours you dedicated to reviewing our work, providing valuable insights, and challenging us to delve deeper into the intricacies of my research. Thank you sir for your unwavering support, expertise, and dedication.

OSASU WISDOM WISDOM

I would like to express my heartfelt gratitude to my mother, Mrs. Betty Oshodin, for her unwavering love and support. To my beloved siblings, Esosa, Ikponmwosa, and Prosper, I want to express my gratitude for your unwavering support and encouragement. Your constant cheering and motivation have inspired me to strive for excellence and achieve my goals. Thank you from the bottom of my heart.

KELVIN ODION ORIAKHI

I would like to express my sincere gratitude to the family of Mr. and Mrs. Jesuorobo Enehizena, as well as my lovely grandmother, Mrs. Grace Oboh, for their immense support thus far. To my lovely fiancée, Miss Elizabeth, thank you for your unwavering support, attentive care, and enthusiastic encouragement.

TABLE OF CONTENT

LIST OF TABLES

TABLE

LIST OF ABBREVIATIONS

COVID-19	Corona virus Disease- 2019
EBF	Exclusive Breast Feeding
HB	Health Beliefs
HBM	Health Belief Model
HSB	Health Seeking Behaviour
HUM	Healthcare Utilization Model
MU5	Mothers of Under-5s
SARS	Severe Acute Respiratory Syndrome
WHO	World Health Organization

OPERATIONAL DEFINITION OF TERMS

Azan - Call to prayer proclaimed five times a day by the muezzin

Bronchitis - Inflammation of the air passages that extend from the trachea into the small airways and alveoli.

Circumcision - Act of circumcising; especially: the cutting off of the foreskin of males that is practiced as a religious rite by Jews

Colostrum - Yellowish liquid, especially rich in immune factors, secreted by the mammary gland of female mammals a few days before and after the birth of their young

Conceptualization - Act or process of forming a general notion or idea

Coolie - Unskilled native labourer in India, China, and some other Asian countries

Corona virus disease (COVID-19) - It is an infectious illness caused by a novel coronavirus called SARS-CoV-2. This virus has the potential to cause respiratory tract infections in individuals who become infected

Disease outbreak – A disease outbreak refers to the occurrence of cases of a particular disease in a population or geographic area that is higher than what is normally expected. It often involves the rapid spread of the disease within a specific community, region, or even globally

Health beliefs - Health beliefs are what people belief about their health, what they think constitute their health, what they consider the cause of their illness, and ways to overcome an illness.

Health seeking behaviour – Health-seeking behaviour refers to the actions and decisions individuals undertake in order to maintain and improve their health or seek appropriate healthcare services when needed. It involves the process of recognizing symptoms or health concerns, evaluating the need for medical attention, and taking steps to access healthcare services

Immune-compromise – This means the immune system is weaker than expected and not functioning properly.

Index case - An index case, also known as a primary case or patient zero, refers to the first documented individual who is identified as having a particular disease within a specific population or outbreak.

Pandemic - A pandemic refers to the global outbreak of a contagious disease that affects a large number of people across different countries or continents.

Pneumonia – Pneumonia is an infection that causes inflammation and swelling in the air sacs (alveoli) of the lungs.

Socio-dermographic - Of, relating to, or involving a combination of social and demographic factors

Stakeholders - One who is involved in or affected by a course of action

ABSTRACT

Background: The coronavirus disease was declared a pandemic on March 11, 2020. Due to the rapid spread of the virus, various governments implemented major restrictions to control its transmission. These restrictions included an economic lockdown and restrictions on movement. The aftermath of this had effects such as a reduction in income, panic, and hunger. The COVID-19 pandemic has disproportionately affected vulnerable populations, including children, women, and the elderly, who are more susceptible to the virus due to their pre-existing health conditions and other factors. More than 7.5 million children die globally each year, partly due to the poor health-seeking behaviour and health beliefs of mothers.

Methodology: This study utilized a descriptive cross-sectional design. A total of 624 mothers of children under the age of 5 in the Oluku community were selected using a multistage sampling technique. An interviewer-administered questionnaire was used for this study. The data was analyzed using the Statistical Package for Social Sciences (SPSS) version 25, with a significance level set at $p<0.05$.

Results: A higher proportion of respondents (73.2%) were between the ages of 25 and 39, with a mean age of 30.7 ± 6.3 years. Out of the 624 respondents, 79.4% identified as Christians, 27.9% identified as being of Benin ethnicity, 50% had completed secondary education, 77.9% had a particular skill, 81.1% had an average income between ₦30,000 and ₦150,000, and 63.3% belonged to the middle socioeconomic status. Just over a quarter, 26.1% of individuals had

harmful health beliefs, while more than 55% exhibited good health-seeking behaviour. Age, religion, level of education, average monthly income, skill level, and socioeconomic status were found to have a statistically significant relationship with the impact of COVID-19 on health beliefs. Meanwhile, marital status, level of education, and socioeconomic status were found to have a statistically significant relationship with the impact of COVID-19 on health-seeking behaviour.

Conclusion: Despite the COVID-19 pandemic, the majority of individuals maintained beneficial health beliefs and exhibited good health-seeking behaviour.

Recommendation: The government should establish educational programs, such as workshops and health talks, to provide ongoing education to mothers of children under the age of 5 about the negative effects of harmful health beliefs. Additionally, primary healthcare services should be made more affordable to encourage more mothers, particularly those in the middle and low socioeconomic status, to seek care. Mothers should seek formal healthcare as their primary point of contact when they are ill.

Keywords: COVID-19, health beliefs, health-seeking behaviour, mothers of children under 5

CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND

A swiftly expanding global transmission of the COVID-19 illness, which originated in 2019 due to the emergence of the novel SARSCoV-2 coronavirus, has been occurring since December of the same year. The initial cases were diagnosed in Wuhan, Hubei Province, China.[1] In a very short amount of time, the disease has spread worldwide, with a rapid increase in both morbidity and mortality rates. The disease has evolved and continues to pose a significant global emergency. On March 11, 2020, the World Health Organization (WHO) declared COVID-19 a pandemic, as it had met the epidemiological criteria of infecting more than 100,000 people in at least 100 countries. COVID-19 is caused by a virus that spreads through droplets released when an infected person coughs or sneezes.

The novel coronavirus can be transmitted when an individual comes into close proximity (within a distance of 2 meters) with someone who is infected with COVID-19. Additionally, the virus can also spread through contact with surfaces that have been contaminated by the respiratory droplets of an infected person who has coughed or sneezed. Symptoms exhibited by COVID-19 range from fever, cough, and respiratory symptoms to shortness of breath and breathing difficulties. Fatal outcomes may include lower respiratory tract illnesses, such as pneumonia and bronchitis, as well as acute respiratory distress syndrome in cases of severe illness. These complications are more pronounced in patients with underlying health conditions, such as cardiopulmonary disease, as well as in immunocompromised individuals, infants, and the elderly.

On the African continent, although there had been pockets of recorded infections, Nigeria's first index case arrived on February 28, 2020 in Lagos.[2] Despite the relaxation of the lockdown restrictions in most parts of the country, the economy remained in a lull during the pandemic, owing to supply stocks, job losses and reduced income, as well as the effects of frozen business activities. Furthermore, the healthcare system in Nigeria experienced significant repercussions from the pandemic, which had a discernible influence on the health beliefs and healthcare-seeking behaviours, particularly among mothers with children under the age of 5. These mothers developed a strong aversion to exposing their vulnerable children to the severe effects of this virus within a healthcare setting.[3]

Health beliefs are what people belief about their health, what they think constitute their health, what they consider the cause of their illness, and ways to overcome an illness. These beliefs are culturally determined, and all come together to form larger health beliefs systems. Different cultures have different definitions of what constitutes health and what cause illness.[4] These health beliefs of people can be grouped into: beneficial, harmful and harmless health beliefs.

I, Beneficial health beliefs: These beliefs have positive effect on health. Some examples of these are prolonged breastfeeding in most African societies, sexual abstinence after pregnancy, exposure of new born babies to sun light.

II, Harmless health beliefs: These beliefs have no effects on health. Some examples are wearing of amulets and charms on young children to scare away evil spirits, placing religious texts on the body of a child for protection, putting of oil on the anterior fontanelle of children.

III, Harmful health beliefs: These beliefs have negative effect on health. Can be grouped into:

a, Nutritional practices e.g neonates are not breastfed for the first 3 days because of the belief that colostrum is harmful, children are deprived of proteinous foods to prevent stealing, forced feeding, early weaning before 6 months.

b, Traditional medical practices e.g scarification which could increase infection and hemorrhage, female mutilation, treatment of convulsion by placing child's feet on fire.

c, Those related to pregnancy and birth e.g women with retained placenta are allowed to bleed, cutting of the umbilical cord with unsanitary objects.

Health promotion programs globally have traditionally operated under the belief that imparting information on the causes of poor health and available options would effectively encourage individuals to adopt healthier behaviours. However, both developed and developing nations are increasingly realizing that providing education and knowledge solely at the individual level is insufficient to drive behavioural change. Numerous studies examining health-seeking behaviours have revealed a multitude of factors, both common and distinctive, that illustrate the intricate influences on an individual's behaviour within a specific context.[5]

During a research conducted in Ibadan, Nigeria, with the aim of examining the determinants of health-seeking behaviour among civil servants, it was noted that certain characteristics of the respondents had a significant correlation with engaging in appropriate health-seeking practices. These characteristics included having completed tertiary education, having smaller household sizes, belonging to higher socioeconomic status quartiles, and being enrolled in the national health insurance scheme. The study also identified that the quality of

services provided, affordability of those services, and proximity to healthcare facilities were regarded as the most crucial factors influencing health-seeking behaviour.[6]

Additionally, the health beliefs of individuals play a significant role in shaping their healthcare-seeking behaviour. The health belief model, along with the concept of self-efficacy derived from Social Cognitive Theory, has been utilized in various health conditions that involve behavioural aspects that can be modified. By considering the constructs encompassed by these models, it becomes possible to predict and comprehend the impact of parental health influences on the health outcomes of young children, distinguishing between factors that may either facilitate or hinder their well-being.[7] The Health Belief Model (HBM) is a long-standing and extensively utilized explanatory framework in health promotion research.[8,9] According to the HBM conceptual model, an individual's perception of a health condition and the actions they take to prevent it play a significant role in determining their health behaviour.[10] Therefore, in order for patients to embrace health care behaviours and minimize disease risks, they must acknowledge their vulnerability to the illness, recognize the potential negative impact it could have on their lives to some degree, understand the benefits of adopting specific behaviours to decrease susceptibility or manage its severity if already present, and overcome significant psychological obstacles that are crucial for successful prevention or treatment.[11]

The integrated management of childhood illness (IMCI) to tackle these issues. This approach aims to prevent fatalities and ailments by enhancing the quality of care for children under the age of five. It comprises three key components:

• Enhancing the competencies of healthcare professionals through training sessions and guidelines.

• Enhancing the organization and management of healthcare systems, which includes ensuring access to necessary resources.

• Conducting home and community visits to promote favorable child-rearing practices, proper nutrition, and encouraging parents to bring their children to clinics when they are unwell[12].

Given the intrinsic connection between HB and HSB, it becomes imperative to evaluate the impact of COVID-19 on the HB and HSB of mothers with children under the age of 5 in Oluku community is feasible and can help proffer solutions to COVID-19 drawbacks on maternal health and children of under 5 in Oluku community.

1.2 STATEMENT OF THE PROBLEM

Health systems around the world are facing unprecedented challenges due to the rising demand for care of people with COVID-19. This is further compounded by fear, stigma, misinformation, and limitations on movement that disrupt the delivery of healthcare for all conditions. In the absence of appropriate health beliefs and seeking behaviours, people may fail to access necessary care. This can lead to both direct mortality from an outbreak and indirect mortality from preventable and treatable conditions.[13] The COVID-19 pandemic has resulted in a significant loss of human life globally and poses an unprecedented challenge to public health, food systems, and the workforce. The pandemic has caused severe economic and social disruption, with tens of millions of people at risk of falling into extreme poverty. The number of undernourished individuals, currently estimated at nearly 690 million, could increase by up to 132 million by the end of the year. Millions of enterprises are facing an existential threat. Nearly half of the global workforce, which amounts to 3.3 billion people, are at risk of losing their livelihoods. Workers in

the informal economy are particularly vulnerable because the majority lack social protection and access to quality healthcare, and have lost access to productive assets. Without the ability to earn an income during lockdowns, many individuals and families are unable to provide food for themselves. For most people, having no income means having no access to food, or at best, having access to less food and less nutritious options.[14]

By August 27, 2021, the global COVID-19 cases had surpassed 214 million, resulting in a death toll exceeding 4.4 million. Nevertheless, initial assessments indicate that the total count of worldwide "excess deaths" attributable directly and indirectly to COVID-19 in 2020 is estimated to be at least 3 million, which exceeds the official figures reported by countries to the World Health Organization (WHO) by 1.2 million. As of February 10th, 2023, the global COVID-19 infections had surpassed 750 million, with fatalities exceeding 6.8 million.[15] Each year, over 7.5 million children worldwide pass away before the age of five. Most of them come from impoverished communities and reside in the world's most impoverished nations. These children are more susceptible to Protein Energy Malnutrition and infections such as neonatal sepsis, measles, diarrhea, malaria, and Upper Respiratory Tract Infection compared to others. Effective strategies for preventing and treating illnesses in children exist, but they are not reaching those who need them. Reasons for poor maternal health in certain settings include restricted availability of healthcare services due to distance or cost, insufficient provision of essential resources and insufficiently trained healthcare workers in local facilities, and maternal health-seeking behaviours and beliefs.[12]

1.3 JUSTIFICATION OF STUDY

The aim of this study is to assess the influence of COVID-19 on the HB and HSB of mothers who are caring for children in the age group of under five years in the Oluku community. The study aims to provide insights that can assist policymakers and key stakeholders in the healthcare sector to make informed decisions concerning the impact of this virus on the HB and HSB of mothers who are caring for children in the age group of under five years in the Oluku community. The findings of the study will also assist in addressing other health-related issues that affect mothers who are caring for children in the age group of under-five and as well as mothers in general, in the Oluku community. By gaining a deeper understanding of individuals' health beliefs and behaviours related to seeking medical care, this study can make a valuable contribution towards addressing these issues.

1.4 RESEARCH QUESTIONS

1. What are the health beliefs of mothers of under-5s in Oluku community?
2. What are the health seeking behaviour of mothers of under-5s in Oluku community?
3. What is the effect of COVID -19 on the health beliefs of mothers of under-5s in Oluku community?
4. What is the effect of COVID -19 on the health seeking behaviour of mothers of under-5s in Oluku community?
5. What other related factors are currently affecting the health beliefs and seeking behaviour of mothers of under-5s in Oluku community?

1.5 OBJECTIVE

General Objective

To assess the effect of COVID -19 on the health beliefs and seeking behaviour of mothers of under-5s in Oluku community, Benin City, Nigeria.

Specific Objectives

1. To ascertain the health beliefs of mothers of under-5s in Oluku community.
2. To determine the health seeking behaviour of mothers of under-5s in Oluku community.
3. To determine the factors associated with the health beliefs and seeking behaviour of mothers of under-5s in Oluku community.
4. To identify the effect of COVID-19 on the health beliefs of mothers of under-5s in Oluku community.
5. To identity the effect of COVID-19 on the health seeking behaviour of mothers of under-5s in Oluku community.

CHAPTER TWO

LITERATURE REVIEW

CONCEPTUAL FRAMEWORK

The current research incorporates the Andersen Health Belief Model.[16] The model conceptualizes healthcare utilization as being influenced by three key determinants. This model illustrates that healthcare usage is influenced by three primary factors, namely predisposing factors, enabling factors, and the need for care.[16,17] These factors comprise various predictors at both personal and contextual levels. The theory is built upon three main principles: predisposing, enabling, and need factors.[18] The theory is based on three predominant tenets. These factors include predisposing, enabling, and need factors. The tenets provide an elaborate explanation for a range of health-seeking behaviours during the COVID-19 pandemic.

- The predisposing factors are individual-level predictors that include sociodemographic traits such as sex, age,[19] religion, education, ethnicity, attitude towards fitness, social relations, and health beliefs.[17,18] Additionally, contextual determinants such as the social and demographic composition of communities, organizational and collective values, political perspectives, and cultural norms also play a role. Health expertise is considered a crucial factor in shaping healthcare behaviours as it can influence beliefs, attitudes, and understanding of the consequences of certain health behaviours.[19]
- Enabling factors pertain to organizational and financial aspects that directly impact access to healthcare, knowledge, and the utilization of health services.[19],[20] In this research, enabling determinants at the individual level include the wealth and salary available to the mother to cover the cost of practicing positive health-related lifestyles, such as maintaining adequate nutrition, engaging in physical exercise, wearing face masks, and practicing appropriate hand hygiene.[18] Other determinants at the individual level include means of transportation, travel time to the health facility, and the availability of time for

healthcare.[20] In the COVID-19 pandemic, health education, outreach efforts, and health policies are significant considerations influencing mothers' healthcare-seeking behaviours and attitudes.[19,20]

- Factors such as personal perceptions and contextual degree influence the seriousness of a disorder or health condition.[20,21] At the individual level, the model distinguishes between perceived need for health services (how people identify and experience their personal state of health, including self-rated health, functional position, and disease symptoms) and evaluated need (objective measurements of patients' state of health and professional assessments, as well as their desire for medical care).[19, 20]

Contextually, individuals differentiate between population health indices, such as current COVID-19 infection and death rates, as well as overall national and local prevalence and incidence.[20] Additionally, measurements of community health, along with epidemiological indicators of COVID-19 morbidity and mortality,[21] have an impact on healthcare-seeking behaviour. Although this model has a few flaws, such as neglecting sociocultural aspects and interactions, and the social construction of need,[22] as well as not being appropriate for preventing carrier use since predisposing factors may be exogenous and enabling resources are necessary,[23] it is still considered relevant to this study. This is because its principles align with research findings and have the ability to identify both individual and community-level factors that impact healthcare-seeking behaviour and health beliefs. It therefore suits nicely the study's objective of assessing the effect of the COVID-19 pandemic on the health beliefs and seeking behaviours of under-5 mothers in the Oluku community.

Predisposing factors

- Health belief
- Knowledge of health issues
- Values and attitude
- Socio-demographic characteristics

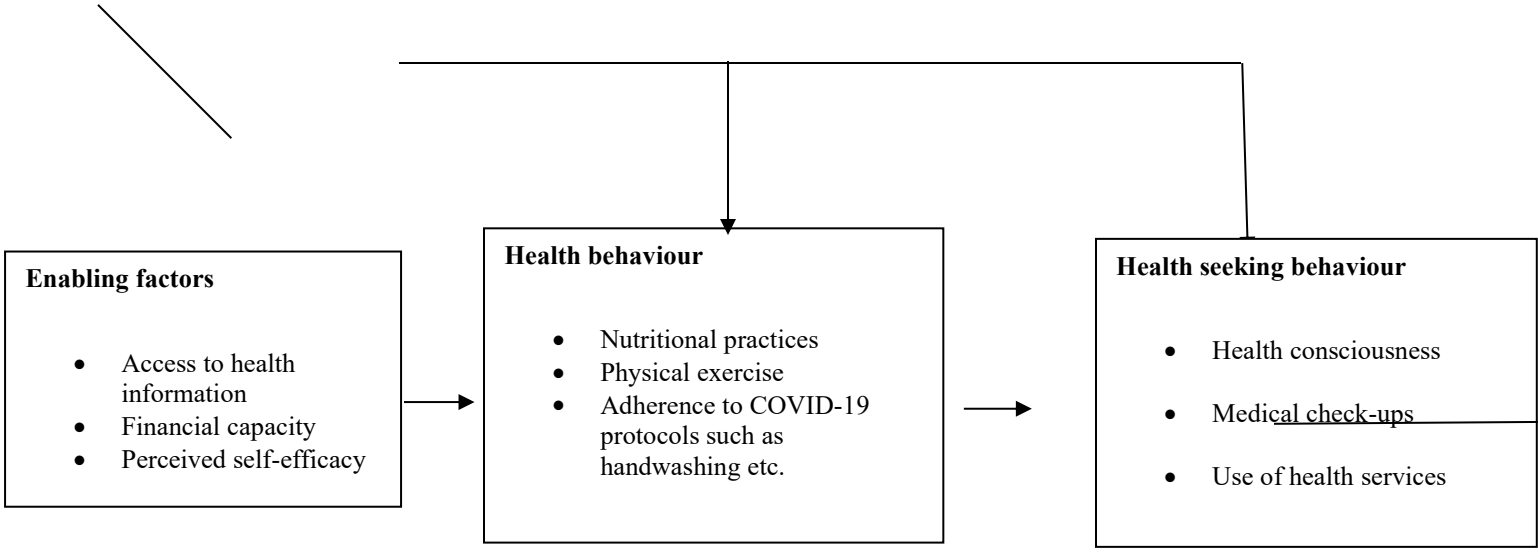

Fig 1: Health service utilization model.[24]

2.1 ASSESSMENT OF HEALTH BELIEFS OF MOTHERS OF UNDER-5.

In 2017, a cross-sectional study was undertaken in the United States, involving a sample of 100 mother-child pairs, with the aim of investigating how maternal self-efficacy and oral health beliefs impact early childhood caries in Latino children. Mother's education was found to be the strongest predictor of health beliefs, showing positive associations with barriers, benefits, and susceptibility. The perceived benefits increased with each additional year spent in the household. There was a significant association between maternal knowledge of oral health and higher perceived benefits, as well as increased self-efficacy. Similarly, higher knowledge of dental utilization was also associated with children being perceived as having an increased

susceptibility to early childhood caries. Less acculturated participants perceived more barriers to adhering to the recommended behaviour, and as their knowledge increased, they perceived fewer barriers. A major limitation of this study was that it was conducted only among a specific group of children (Latino children), which limits the generalizability of the results.[25]

A qualitative study was conducted in Western Turkey in 2013 to examine the common practices and beliefs regarding vitamin intake for children aged 0-5. A total of 20 mothers between the ages of 18 and 40 were included in the study, which was conducted under four themes. The first theme is the processes that affect mothers' decisions about breastfeeding. The mothers indicated that several factors influenced their decision, including the presence of Elders in the same household and environment, educational materials distributed through media, and information provided by health workers. The second theme revolved around knowledge and beliefs concerning breast milk. While most mothers expressed varied opinions regarding its benefits, a notable number held misconceptions about withholding colostrum from infants. The third theme is breastfeeding practices, which are often determined by traditional practices that dictate how and how much to feed. It was expressed that materials prepared by the health sector were also taken into account. The fourth theme is the knowledge and attitudes of mothers regarding additional supplementary baby food. Some mothers introduce early supplementary feeds because they believe that breast milk is not enough for their babies. Other factors that influence this decision include the mother's use of drugs or contraception, requests from the mother-in-law, the need to wake up often, and the nutritional quality of the supplementary food. A limitation of this study was that it only presented the mothers' perspectives regarding local beliefs and cultural practices. Views of healthcare providers, such as postnatal nursing staff and midwives, were not

collected. This information could have provided a better understanding of the social and cultural context surrounding maternal and child healthcare practices during the postpartum period.[26]

In 2020 in Nigeria, a comparative analytical cross-sectional study was done among 540 mothers at least an under-5 child. The study employed a multistage sampling method to investigate to the effect of cultural and traditional beliefs on mother and child health practices. The findings revealed notable disparities in cultural attitudes between women in rural and urban areas across all the assessed maternal health practices. Urban settings exhibited a perception that cultural beliefs diminished the significance of women's involvement in these practices. In contrast, rural women displayed varied attitudes, ranging from positive to negative, towards the cultural beliefs associated with each maternal health practice. Natural family planning methods were generally considered more culturally acceptable, although some mothers viewed family planning as culturally inappropriate due to concerns about limiting population size and strength, which are deemed essential during times of war. Childcare, including newborn care, was found to be influenced by cultural norms. Participants reported that their communities imposed fines for neglect or intentional harm to children and for contributing to famine. In rural areas, all mothers had female family members who had undergone circumcision, but their attitudes towards the practice varied. Urban mothers, except for one, did not practice or endorse female circumcision. While access to hospitals during childhood illnesses was generally culturally supported, there was also recognition of the benefits and use of locally available and cost-effective traditional medicines as treatment options. Urban mothers, however, demonstrated either a lack of awareness or cultural indifference towards the practice or non-practice of various child health measures. Breastfeeding was widely regarded as the norm, and not practicing it was viewed as

taboo. Exclusive breastfeeding was perceived as culturally risky due to the fear of being labeled as wicked if a baby cried due to dissatisfaction with being exclusively breastfed. A major limitation of the study was the scarcity of literature on related topics, limited availability of publications in libraries, and the absence of accurate and up-to-date statistical figures.[27]

In 2011, a cross-sectional study was conducted in South West Nigeria utilizing purposive sampling to select 338 individuals who possessed literacy skills. The objective of the study was to explore the prevailing health beliefs within the population. The results indicated that 54.5% of the participants held the belief that diseases and illnesses could be attributed to carelessness. Moreover, 57.3% believed that disorders and illnesses could arise from dysfunction or impairment in the body's systems, while 39.8% endorsed the notion of diseases occurring naturally without external factors. In addition, 59.4% of the individuals agreed that disorders and illnesses could be inherited. Among the participants, a notable proportion of 31.3% strongly believed that diseases could be caused by evil spirits, with an additional 26.9% expressing significant agreement that ailments could result from the malevolent actions of witches, sorcerers, and evildoers. Furthermore, 23.8% of the participants subscribed to the belief that illness could be a form of retribution, while 32.5% maintained the belief that diseases could be a divine punishment for sins committed. The study also revealed that 56.7% of the participants strongly believed in seeking remedies exclusively from clinical doctors, whereas 30.5% believed that certain ailments could not be cured by orthodox medications alone, thus warranting the involvement of traditional healers. Although 67.1% of the participants acknowledged the importance of adhering to prescribed medicines and treatment plans for a healthy life, approximately 29% still held the belief, to some extent, that appeasing deities might be necessary

to alleviate ailments. This perspective was further supported by 35% of the respondents who strongly advocated for spiritual consultation as a means to prevent and overcome disorders, illnesses, and misfortunes. While 82.9% strongly emphasized the significance of maintaining proper hygiene for good health, around 27% of the participants retained beliefs in the efficacy of charms or talismans for well-being. It is important to acknowledge the limitations of this study, such as its exclusive focus on literate participants, which disregarded the perspectives of the illiterate population. Furthermore, the study's reliance on data collected a decade ago underscores the need for updated literature on the subject matter.[28]

2.2 ASSESSMENT OF HEALTH SEEKING BEHAVIOUR OF MOTHERS OF UNDER-5S

A cross-sectional study was conducted in Iran in 2011 to examine the factors associated with mothers' beliefs and practices regarding injury prevention in children under-5. A total of 212 caregivers with children under the age of 5 years were included in the study. The review revealed that clinical care was sought for approximately 51.4% of the sick children. Seeking medical care was once regularly initiated for illnesses that did not improve or worsened. 38.3% said they wouldn't have sought clinical care if their illness was mild, and 31.1% said their illness was not suitable for scientific treatment anymore. A limitation of this research was that only one vaccination unit was used, and the participants were constrained to only those who visited during the study period.[29]

In 2014, a study was conducted in Bangladesh to examine how mothers or caregivers with children under the age of 5 seek healthcare during episodes of childhood illness. A total of 439 mothers or caregivers participated in the study. The findings indicated that 90% of the mothers or caregivers sought healthcare services for their children's illnesses, while 9.1% did not perceive the need for such services. Among those who sought healthcare, approximately 50% sought advice from drugstores or pharmacies at some point during their children's illness. The distribution of healthcare-seeking behaviour among the participants was as follows: 34.6% visited a clinical university hospital, 13.5% went to a government hospital, 11% consulted a private practitioner, and 6.3% utilized a charity facility. On the other hand, among those who did not seek healthcare services for their children's illnesses, various reasons were reported. Among the surveyed population, 67.5% chose to wait for self-recovery, 52.5% cited lack of fund as a obstacle, and 12.5% mentioned not receiving advice to seek treatment. Approximately 10% of respondents reported inaccessibility to healthcare facilities due to distance, while 7.5% did not believe treatment was necessary. Additionally, the study found that 12.7% of illiterate individuals did not seek healthcare, compared to 7.4% in the literate group of 297. It is important to note that a significant limitation of this study was the use of convenience sampling, a nonprobability technique that may introduce bias and potentially impact the study's findings.[30]

A community-based cross-sectional study was conducted in Northwest Ethiopia in 2016. A total of 410 mothers of children under 5 participated in this study. Data was collected using a structured questionnaire administered by an interviewer. Among the participants who were surveyed, 48.8% sought healthcare at medical facilities during their children's illnesses. Health

posts and health facilities were the most common sources of healthcare services, as 84% of the mothers who sought healthcare visited these institutions. Among them, 27% sought medical care within a day of noticing signs and symptoms of their baby's illness. Almost three-quarters (73%) of the mothers reported that their main reason for not seeking medical care for their children when they were ill was their belief that the illness would resolve on its own. About 74.2% of the mothers/caregivers perceived that adolescents require healthcare early, irrespective of the type of ailment. Around half of the respondents reported that their child/children had experienced symptoms such as fever, coughing, or difficulty breathing. Only 18.5% of respondents decided on their own to seek medical care for their child's illness. Slightly more than three-fourths of the individuals perceived that a baby is severely ill when the baby is unable to eat or breastfeed even once. A significant proportion of the respondents misunderstood the cause of childhood illness. Although the sample size was relatively large, all respondents were from a single community. Therefore, the findings of the study cannot be generalized.[31]

In 2018, a cross-sectional study was conducted in Ethiopia, employing a systematic random sampling method to select 504 mother-child pairs from the community. The study aimed to investigate the health-seeking behaviour of mothers with children under the age of 5. Data collection involved the use of a semi-structured questionnaire administered by an interviewer. The findings revealed that approximately 76.2% of the mothers sought healthcare at the time of the study. The primary reasons for not seeking medical care included the high cost of healthcare (41.2%) and the perception that their illness was not severe (29.4%). Moreover, a total of 103 caregivers (20.4%) delayed seeking modern healthcare for three or more days, primarily due to the belief that the illness was mild and would resolve spontaneously. Regarding the perception of

illness severity, nearly 46.9% of the mothers considered their baby's sickness as moderate, while approximately 56.2% identified the severity of the illness based on observable symptoms. Although the study had a large sample size, it is important to note that all the respondents were from a single community, which limits the generalizability of the study's findings..[32]

In 2013, a descriptive cross-sectional study was conducted in Nigeria to examine the health-seeking behaviours of mothers with children under the age of 5. A convenience sampling method was employed to collect data from 110 out of a total of 250 mothers who had previously treated their children for measles and were able to respond to the questionnaire at the time of the study. In a review of the initial treatment methods used for young people with measles, 56% sought treatment from a vendor, 25% practiced self-care, 13% visited a clinic, and 5% consulted with an herbalist or traditional healer. Only 1% sought treatment from a faith healer. Regarding the type of remedy used, 69% utilized conventional drugs, 25% chose home treatments, 5% used herbal therapy, and 1% relied on trust-based recuperation methods. Upon reviewing the reasons why the majority of mothers no longer take their children to the clinic, 38% cited lack of finances as the primary factor. Another 31% believed that measles can now be treated outside of hospitals, while 17% expressed dissatisfaction with medical institution therapy. Only 1% attributed their decision to the negative attitudes of healthcare professionals towards parents. Approximately, 43% took their children to the healthcare centre after using various remedies, while 44% did not take their children to the hospital. Additionally, 43% of the respondents who took their children to the hospital reported that their child did not respond to the initial treatment. A limitation of this study

was the use of convenience sampling, a nonprobability approach that can introduce bias and may have influenced the study's results.[33]

2.3 ASSESSMENT OF THE FACTORS INFLUENCING HEALTH BELIEFS AND SEEKING BEHAVIOUR OF MOTHERS OF UNDER-5

A cross-sectional study was conducted in Iran from August to October 2011 to determine the factors associated with practices and beliefs of mothers as related to injury prevention in children under the age of 5. The study included 508 mothers who had at least one child under the age of 5 and was based on the Health Belief Model. The data collection instrument was a questionnaire. Out of the 508 respondents, 92.1% were housewives with a high school education (41.4%). 55% of them had only one child. 39.6% of the youth were once between the ages of 12 and 35 months. Almost 22.6% of mothers reported at least one instance of harm in their children under the age of 5. Of the 131 injuries that occurred among children under the age of 5, 64.9% were mild, 17.6% were moderate, and 17.6% were severe. About 52.7% of injuries occurred in boys, while 47.3% occurred in girls. Most of the accidents (37.4%) occurred in children aged between one and eleven months and those aged between 12 and 35 months. The average score for knowledge was 43.5%, while the average score for practical application was 71.4%. Perceived benefits and perceived barriers received the highest and lowest rankings, respectively (86.9% versus 59.4%). Health care workers play a crucial role in taking action to prevent injuries in children under the age of five. There was once a correlation found between mothers' implied rating of knowledge and their practices in preventing injuries in children under the age of 5, as determined by a linear regression model using HBM constructs. There used to be a strong correlation between mothers' exercise and their knowledge, perceived benefits, cues to action, and self-efficacy. On the other

hand, there was a negative correlation between mothers' practices and their perceived susceptibility, perceived severity, and perceived barriers. There was once no statistically significant difference between the severity of accidents and mothers' knowledge and HBM constructs. However, there was once a statistically significant difference in the severity of injuries and mothers' practices. The problem with this study was that the study was conducted almost a decade ago. There is a need to update the current literature.[34]

In 2017, a cross-sectional study was conducted in western Iran to evaluate the factors associated with mothers' beliefs and behaviours regarding the prevention of poisoning in children under the age of five. The Health Belief Model was utilized in the study. The study was conducted with 580 mothers who had at least one child under the age of five, selected randomly using the cluster sampling method. A statistically significant relationship was found between mothers' efforts to prevent poisoning in children under the age of 5 and several variables. These included the age of the father in the household ($p = 0.001$), the gender of the children ($p = 0.014$), the area of residence ($p < 0.001$), the mother's occupation ($p = 0.001$), the father's education level ($p < 0.001$), the father's occupation ($p < 0.001$), and the nursing habits of the children. It has been found that there is a strong correlation between perceived susceptibility, perceived severity, cues to action, and self-efficacy in predicting preventative behaviours of mothers towards preventing poisoning in children under the age of five. The self-reporting method for collecting records is a limitation of this study.[35]

In 2011, a study was conducted in India to investigate the healthcare-seeking behaviours of mothers for their children. The study involved 405 mothers. Among those exposed to mass media, a statistically significant proportion (69%) sought healthcare. Regarding employment

status, 54.8% of working mothers sought healthcare. Notably, an association was found between healthcare-seeking behaviour and literacy level. Among illiterate mothers, only 24.5% exhibited healthcare-seeking behaviour, whereas among literate mothers, 78.3% sought healthcare, and this association was statistically significant. The type of family structure also played a role. Among mothers in joint families, more than two-thirds exhibited healthcare-seeking behaviour, but less than one-quarter actually sought healthcare. Gender of the child was another significant factor. Among mothers with male children, 83.9% sought healthcare services, while only 58% of those with female children sought healthcare. Unfortunately, in 27.9% of cases where the child was perceived to be sick, healthcare-seeking behaviour was not observed. The disparity was notable, with 16.5% of male children not receiving any remedy compared to 42% of female children. The study identified several factors influencing mothers' decision-making processes. These factors included ignorance, lack of awareness, cultural beliefs, a male-dominated society, prioritization of male children, and the influence of the family head, as reported by 81.2% of the surveyed mothers. Dissatisfaction with healthcare services, such as a lack of accountability and compassion from providers, was cited by 56.8% of the mothers. Additionally, 68.3% mentioned the lack of accessibility, availability, and affordability of healthcare services. Other factors, such as inconvenient transportation facilities, religious misinterpretations, socioeconomic constraints, and restrictions on women's movements, were reported by 23.4% of the mothers. It is important to acknowledge that the study has a limitation due to its age, being conducted almost a decade ago. Consequently, there is a need to update the current literature in this field.[36]

In a descriptive study conducted in 2019 in India, 60 mothers were surveyed in their neighborhood to explore their knowledge and practices related to seeking healthcare for their

under-five children during illness. 40% of the women were aged between 25-30 years, followed by 28% aged between 31-35 years. The findings demonstrated a statistically significant correlation between knowledge and various influencing factors, including age, education, occupation, and sources of health information among mothers with young children, with a significance level of 5%. The relationship between exercise and socio-demographic variables, such as age, number of young people in the family, monthly household income, and mother's sources of fitness information, was found to be significant at a 5% level. These factors potentially affect the information and practices related to health-seeking behaviour among mothers with young children throughout the study period. However, it is important to note that the study's limitations include a small sample size.[37]

In 2019, a cross-sectional study was conducted in Sudan, specifically at Primary Health Care Centers, involving 495 mothers with children under the age of 5. The primary objective was to investigate the factors influencing health-seeking behaviours among these mothers. The study findings indicated that several factors were significantly associated with healthcare-seeking behaviour, such as place of residence, income, age of the child, quality of services at the health facility, decision-maker for seeking healthcare, operating hours of the health facility, and cultural practices. Conversely, factors like education level, occupation, car ownership, child's birth order, child's gender, illness severity, price of services, and service availability showed no significant relationship with healthcare-seeking behaviour. The study identified six strong predictors of healthcare-seeking, with the decision-making process being the primary factor, independent of gender. The second predictor was the duration of time spent at the health facility, followed by cultural and traditional factors that negatively influenced mothers' seeking behaviour. Focus

group discussions revealed that initially, mothers resorted to common medications and home remedies to treat their sick children. Only when there was no improvement or the illness worsened, especially in severe cases, did they consider seeking medical attention at the nearest hospital. Almost all mothers asserted that their decision to seek hospital care for their sick child was not influenced by external factors, and any influence that did exist was positive. It is important to note that although the study utilized a large sample size, its limitation lies in being conducted solely at one healthcare facility.[38]

In 2020, a comprehensive study used to be carried out to look at the elements influencing mothers' healthcare-seeking conduct for their youth in sub-Saharan Africa, using information from 31 unique countries. The method of information collection involved conducting face-to-face interviews with respondents and using standardized questionnaires to gather information. The study focused on 75,982 adolescents who either received or did not receive the measles vaccine, as well as 93,142 youth who either sought or did not seek medical care when experiencing symptoms of fever, cough, and diarrhea. The participants were selected using a multi-stage cluster sampling technique. The study revealed that children whose mothers were 25 years or older and those who had completed primary, secondary, or higher education were more likely to receive the measles vaccine. Household wealth also confirms that young people from poorer, middle, richer, and richest households are most likely to receive the measles vaccine. Children living in urban areas and teenagers who are second-born or higher in birth order are less likely to receive the measles vaccine. Children whose mothers worked and those who attended antenatal care are more likely to receive the measles vaccine. Children who had an average birth weight are 14% more likely to receive the measles vaccine compared to those who had a higher

birth weight. Research indicates that teenagers whose mothers have received both primary and secondary education, are employed, and attended antenatal care are more likely to seek medical attention for fever or cough symptoms. However, young people whose mothers were 35 years or older and those living in urban areas are less likely to seek medical care for fever or cough. Also, teenagers who were between 12 and 23 months old and those who had an average size at birth are less likely to seek medical care. When it comes to diarrhoea, children who were born small, whose mothers had primary, secondary, or higher education, and attended antenatal care are more likely to seek medical attention for diarrhoea. Additionally, teenagers who are of 2nd order or 1/3 order of delivery or greater are 14% and 15% more likely, respectively, to seek clinical care for diarrhea. Male teenagers are 11% more likely to seek medical care compared to female teenagers. Children whose mothers are 25 years or older and those from the wealthiest households are less likely to seek medical care for diarrhea. At the same time, teenagers who are between 24 and 35 months old and those who were of average size at birth are less likely to seek medical care for diarrhea. The statistics series technique involved conducting face-to-face interviews with respondents from 31 different countries. This method was time-consuming and cumbersome, which raised doubts about the accuracy of the results. This constitutes a predominant predicament of this study.[39]

In 2013, a descriptive study was conducted in Nigeria to determine the health-seeking behaviour of mothers in bringing their children to the hospital for medical care at the child welfare clinic in a teaching hospital. The study aimed to identify the factors that influenced their decision-making process. A total of 150 mothers between the ages of 20 and 40, with children between the ages of 0 and 5, who had admitted their children to the baby welfare hospital, were selected as

respondents for the study. The responses of the respondents indicate that there is still a negative perception regarding the importance of pattern recognition skills in healthcare among the majority of the respondents. The understanding of mothers regarding when their adolescents need to seek healthcare varies, including their perception of when it is critical. The majority of the mothers reported that they used to take their children for medical care when they noticed a sudden change in their condition. The results confirmed that 10.7% of the respondents preferred private hospitals or clinics, 88% favoured government hospitals, and only 1.3% chose mission hospitals. Over half of the respondents (72%) believed that the age of mothers is a strong determinant of when they seek healthcare for their sick children. 26.7% of the mothers believed that age has no effect on their decision to seek healthcare for their sick children, while 1.3% of the mothers were unsure about the impact of age on their decision. The majority of respondents (90.7%) believed that a mother's income is a strong determinant of her health when caring for her sick adolescent. Only 9.3% of the mothers surveyed stated that income had no impact on their ability to care for their child's health. Additionally, the majority of respondents (92%) agreed that a mother's occupation determines when and where her baby will receive healthcare when sick. While 8% claimed that mothers' occupation did not influence when and where their adolescents would receive medical care when sick. Over half of the respondents (63.3%) believed that the help given to mothers has a significant impact on their health when searching for medical assistance for their sick children, while 36.7% did not believe that the assistance received affects their health when seeking medical help. It is important to word that this learn about was limited by way of its center of attention on a single teaching hospital and its small pattern size. [40]

2.4 THE EFFECT OF COVID-19 ON HEALTH BELIEFS OF MOTHERS OF UNDER-5s

Only few studies have been conducted on the impact of COVID-19 on the health beliefs of mothers with children under the age of 5. However, there is research that is similar to this objective and has been reviewed in the following paragraph.

In Bangladesh, a qualitative study was undertaken to examine the impact of COVID-19 on mothers. The researchers utilized purposive random sampling to select 223 mothers, who were then surveyed using a semi-structured questionnaire. The findings revealed that COVID-19 affected all mothers to some extent, but the degree of impact varied based on factors such as the occupation of both the mothers and their husbands, as well as their household structure. A significant proportion (92%) of the respondents agreed that COVID-19 had negatively affected their access to healthcare facilities and events. Furthermore, approximately one-third (33%) of the participants felt that COVID-19 had unfavorable effects on their household planning. Among expectant and new mothers in the general population, nearly half strongly agreed that both prenatal and postnatal check-ups were significantly impacted, while almost 39% believed they were only partially affected. The study revealed heightened stress levels among mothers, particularly regarding the health and well-being of their children. Many mothers experienced anxiety and uncertainty about taking their babies for vaccinations, concerned about the risk of infection and the potential consequences of missed immunizations. They also expressed worries about the availability of essential items for their babies, such as formula milk, diapers, feeding bottles, and clothing. Additionally, the availability of pediatricians for regular check-ups was a concern. Above all, mothers longed for a return to a pre-pandemic world, where they could raise their children without fear of the coronavirus. Pregnant women faced even greater stress and

anxiety. Their concerns included the availability of doctors for regular check-ups, during childbirth, and in case of emergencies. They also worried about the possibility of contracting the virus and its potential impact on their newborn's health and ability to experience the world. It is important to acknowledge that this study had limitations, as it heavily relied on qualitative research methods and did not incorporate any quantitative tools of social research.[41]

To check out the belief and behaviours of moms involving teething, a descriptive cross-sectional study used to be conducted in Benin City in 2015. A complete of 420 moms participated, a majority 71.7% believed that teething in teens is associated with a range of symptoms. The most regularly pronounced symptoms were fever, with 85.7% and diarrhoea, with 80.0%. On the different hand, redness of the gums was once the least common symptom, with 0.7%. The study also discovered that a higher share of respondents employed exceptional techniques to manage teething discomfort. Specifically, 74.4% used teething syrups, 61.8% utilized tepid sponging, and 61.1% relied on teething toys. More than half of of the respondents, 54.3% and 56.3%, administered analgesics for relieving fever and oral rehydration solution (ORS) for teething-induced diarrhoea, respectively.[42]

2.5 ASSESSMENT OF EFFECTS OF COVID-19 ON HEALTH SEEKING BEHAVIOURS OF MOTHERS OF UNDER-5

During 2020, a cross-sectional study was carried out in Lahore, Pakistan to determine the healthcare seeking behaviour during the COVID-19 outbreak. Questionnaires were distributed online using a "Google Form" to 377 individuals. The findings of the study revealed a significant shift in health-seeking behaviours between the pre-pandemic and pandemic periods. The trend of self-medication increased during the pandemic, with a 10% rise. The proportion of people

visiting government hospitals decreased by more than half, from 27.3% to 12.8%. A potential issue with the study is the possibility of errors resulting from respondents filling out the questionnaires incorrectly or carelessly, or withholding information about their diseased state.[43]

During the period from May to July 2020, a cross-sectional survey was carried out in Ethiopia. A total of 448 (70%) participants missed one or more appointments, and 53 (12%) of them also missed their medications. On the other hand, almost two-thirds (59%) of the participants reported that local pharmacies did not have the necessary medications, and the cost of treatment was higher in 167 (26%) cases. Only 105 respondents (16%) considered Local Government Health Institutions useful during the pandemic. During the study period, 68 cases (10.8%) experienced a worsening of symptoms and 8 (1.3%) died. Patients with moderate to severe diagnoses had a higher likelihood of missing their follow-up appointments. Fear of contracting COVID-19, inability to afford treatment costs, and transportation issues have been identified as important factors contributing to patients being lost to follow-up. The likelihood of experiencing follow-up loss among patients who expressed concern about COVID-19 was 19 times higher than among patients who did not report fear. The likelihood of experiencing follow-up loss was 19 times higher among patients who expressed concern about COVID-19 compared to those who did not report fear. Factors such as gender, duration of follow-up, transportation distance and quality, and treatment expenses did not significantly affect the rate of loss-to-follow-up. Among the 8 recorded deaths, all patients were lost to follow-up during the pandemic, and half of them had also failed to adhere to their medication regimen. In all of them, the severity of sickness used to be moderate to severe. The reason for neglected appointments was fear of COVID-19 contamination in six cases. The majority lived more than 200km away from the referral hospital

(TASH). Fear of contracting COVID-19 and lack of transportation were the primary reasons for patients being lost to follow-up. Other COVID-related reasons, such as a family member's illness caused by COVID-19, have also been demonstrated. It is important to note that this study was limited as it was conducted in only one hospital.[44]

A descriptive cross-sectional survey was conducted from May 9 to June 8, 2020, during the national COVID-19 pandemic lockdown, which included interstate tour restrictions, college closures, and market closures. The survey aimed to examine the healthcare-seeking behaviour of parents for their sick children across all 36 states of Nigeria. A total of 272 respondents completed the online survey; however, 12 of them were excluded due to incomplete or inconsistent responses. Half (50%) of the respondents stated that COVID-19 had affected their behaviour in seeking healthcare for their children. The socio-demographic characteristics of the respondents, such as gender, educational status, marital status, number of dependents, income level, and geographic location, did not differ between those whose health-seeking behaviour was affected by the COVID-19 pandemic and those who were unaffected. Regarding healthcare-seeking behaviour, 41.5% of respondents agreed or strongly agreed that they were concerned about their children contracting the virus at hospitals. About 23.9% of the respondents agreed or strongly agreed that they were unable to obtain medication for their children due to the lockdown or because the drugs were unavailable at the hospital. Only 9.2% of them agreed or strongly agreed that their children were unable to see a doctor at the hospital throughout the entire COVID-19 lockdown. They were unable to access hospital services for their children because the roads were blocked throughout the lockdown period. While 6.6% of respondents agreed or strongly agreed that their adolescents had been denied admission to a healthcare facility due to

suspicion of COVID-19 associated symptoms like bronchial asthma, 14.3% agreed or strongly agreed that their toddlers were unable to receive their routine immunizations as scheduled. About 21.9% of respondents agreed or strongly agreed that they had been unable to seek healthcare for their children because the roads were blocked during the lockdown. Additionally, 6.6% of respondents agreed or strongly agreed that their children had been denied admission to a hospital due to suspicion of COVID-19 related symptoms, such as asthma. Nearly 14.3% of respondents agreed or strongly agreed that their baby was unable to receive routine immunizations as scheduled. The study's limitations include the restricted findings to parents in Nigeria who have internet access, own mobile devices with internet connectivity, and possess a good understanding of English. Although data collection covered all six geopolitical zones in Nigeria, the sample size was very small and the representation of the zones was unequal. Therefore, the findings may not be generalizable.[45]

A retrospective and comparative study was carried out to assess the impact of the COVID-19 pandemic on healthcare-seeking behaviour among the rural poor in Ido-Ekiti and surrounding areas in Nigeria. The researchers analyzed secondary data obtained from the primary tertiary healthcare center serving the region, which revealed a significant decrease in clinic visits (90%) during the pandemic. Several clinics experienced a decline in patient visits ranging from 33% to 55%. Overall, there was a 13% reduction in healthcare service utilization across all categories from January to December 2020 compared to 2019. This decline was observed in 19 out of 21 categories, representing 90% of the total cases, highlighting the substantial impact of the pandemic on the local community's access to healthcare. Specifically, there was a decrease of 28%, 33%, and 55% in health facility visits compared to the previous year (2019). In total, there

were 7,681 fewer visits to health centers in 2020 compared to the data from 2019. The urology and renal departments were exceptions to certain regulations due to the severity of clinical presentations and fatality rates. Additionally, the Children's Outpatient Department (COPD) experienced a decline of over 3,000 visits. It is important to note that this study's limitation is its restriction to a single healthcare facility, which may affect the generalizability of the findings.[46]

CHAPTER THREE

METHODOLOGY

3.1 STUDY AREA

The research was conducted within the Oluku community, which is situated in the Ovia North-East Local Government Area (LGA) of Benin City, Edo State. Edo State is one of the 36 states in Nigeria, with Benin City serving as its capital. Geographically, Edo State is located in the South-South geopolitical zone of Nigeria. The State was created by extracting the northern part of the former Bendel State in 1991. With a land mass of about 19,743sqkm, it shares borders with Kogi State to the North-East, Anambra State to the East, Delta State to the South-East, and Ondo State to the West and North-West. According to the 2006 National population census, the estimated population of the state was recorded as 3,233,366 and has a projected population of 4,921,058 using a growth rate of 2.8% per year. The capital city, Benin City, is located approximately 25 miles north of the Benin River and about 200 miles east of Lagos when measured by road distance. Population estimate as at 2006 is 1,147,188, with estimates as at 2021 to be 1,745,976 and the dominant tribe is Benin.[47]

Oluku community has a Primary Health Centre, four primary schools, a secondary school, a market and three gas stations. The community is divided into two by the Lagos-Benin Expressway. It is a transit town for long-distance travellers especially truck drivers and their assistants. There are several hotels, brothels, and a night market in the community.[48] The total estimated population in Oluku community is about 41,310.[49]

3.2 STUDY DESIGN

A descriptive cross-sectional study design was employed in this research.

3.3 STUDY POPULATION

The research was conducted among mothers who have children under the age of 5 and reside in the Oluku community of Benin City, Edo State, Nigeria.

3.4 SELECTION CRITERIA

3.4.1 INCLUSION CRITERIA

Mothers who were residents of Oluku community and who have a least a child that is under the age of 5 years.

3.4.2 EXCLUSION CRITERIA

Mothers with at least a child that is under 5 and lacks the mental competence to respond appropriately.

3.5 DURATION OF STUDY

The study was conducted over a span of two years, specifically from March 2021 to March 2023.

3.6 SAMPLE SIZE DETERMINATION.

The sample size for the study was determined using the Cochran's formula.[50]

$$n = \frac{Z^2 pq}{d^2}$$

n = minimum sample size

Z = standard normal deviate = 1.96 at 95% confidence interval

p = prevalence of the characteristic of interest

q = 1- p

The degree of precision desired (d) was set at 0.05, indicating the desired margin of error for the study.

p is set at 42% based on the study done on the prevalence of parents' health seeking behaviour for their sick children in Nigeria.[45]

Substituting the above in the equation;

$$n = \frac{1.96^2 \; x \; 0.42 \; x \; 0.58}{0.05^2}$$

n = 374

To account for non-response, an additional 10% of the sample size was included in the questionnaire to make up for non-responses. In order to provide an allowance for non-response, a 10% margin was used.

$$n_f = \frac{n}{1 - nr}$$

n_f = final sample size

n = minimum sample size

nr = non-response rate = 0.1

$$n_f = \frac{374}{1 - 0.1}$$

$$n_f = \frac{374}{0.9} = 416$$

For the multi-stage sampling technique 1.5 design effect was used.

416 x 1.5 = 624

Total number of respondents is 624

3.7 SAMPLING TECHNIQUE

For this study, a multistage sampling technique was employed to select participants.

STAGE 1: Selection of Local Government Area

Of the 7 Local Government Areas in Edo South Senatorial District, Ovia North-East was selected using simple random sampling method, specifically through a balloting process.

STAGE 2: Selection of the ward

There are 13 political wards in Ovia Noth-East LGA which are Adolor, Iguoshodin, Isiuwa, Oduna, Ofunmwegbe, Oghede, Okada East, Okada West, Okokhuo, Oluku, Uhen, Uhiere and Utoka. Out of these, Oluku ward was selected using simple random sampling method by balloting.

STAGE 3: Selection of the community

There are 10 communities in Oluku ward. They are Isihor, Iguosa, Oluku, Okhumwun, Egbaen, Utekon, Uhogua, Olefure, Idumwowina, Ekosodin. Using the simple random technique, Oluku commumity was selected for the study.

STAGE 4: Selection of cluster

The Lagos - Benin express road divides the community into a two halves, one on the right (as community 1) and the other on the left (as community 2). A simple random sampling technique by balloting was used to select the community on the left side of the Lagos-Benin express road (community 2). The questionnaire was administered to the mothers of uner-5s of the selected cluster who give consent for the study until the required sample size is achieved.

3.8 DATA MANAGEMENT

3.8.1 TOOLS FOR DATA COLLECTION

The data collection for this study involved the use of a standardized structured questionnaire where participants independently completed the questionnaire themselves. The questionnaire was modified from the tools of surveys done in south west Nigeria and Iran.[11,28,45.51] The questionnaire contained close and open-ended questions.

The questions were grouped into four sections which sought to gather the following information:

Section A: Socio-demographic characteristics of the respondents

This section sought answers to respondents' age, sex, ethnic group, educational background, religion, marital status, occupation and place of residence of respondents

Section B: Assessment of the factors associated with the health beliefs and seeking behaviour of respondent

Section C: Assessment of the effect of covid-19 on health seeking behaviours of respondents

Section D: Assessment of the effect of covid-19 on the health beliefs of respondents

3.8.2 METHODS OF DATA COLLECTION

Questionnaire was interviewer administered, their consent to participate was obtained, signifying their voluntary agreement to be part of the research and was assured of confidentiality. The questionnaire was adapted from the tools of studies done in south west Nigeria and Iran.[11,28,45.51]

3.8.3 PRETESTING

The questionnaire was pretested among residents in Ekosodin community, Benin City.

Ten percent (60) of sample size in the proportion was used for pretesting. The aim is to test the questionnaire for accuracy and ensure that it is well understood by the respondents ultimately to aid appropriate data collection. Appropriate corrections were made where applicable to the questionnaire before commencement of the study.

3.8.4 DATA ANALYSIS

The collected data was carefully retrieved, sorted, and screened to ensure that it was complete and accurate. Subsequently, the data was coded and organized using IBM SPSS version 25, which is a widely used electronic statistical package. Descriptive statistical

procedures were employed for the analysis of the data. Descriptive statistics, such as percentages, means, and standard deviations, were utilized to present the demographic data. In addition to numerical summaries, tables and prose were employed to effectively present and interpret the data.

Univariate analysis was conducted to examine the distribution of the variables individually.

Bivariate analysis was performed to explore the relationships and potential correlations between different socio-demographic variables, providing insights into how these variables are related to health seeking behaviour (good or poor) and also their health beliefs (beneficial, harmless and harmful) using chi-squared test. Means were compared using student t-test.

Multivariate analysis was done to identify the determinants of HSB, HB and the effect of COVID-19 on HB and HBS using binary logistic regression. Results of data analysis were presented using tables, charts and graphs.

3.8.5 SCORING

Data from the questionnaires was collated, screened for completeness and correctness, coded and entered into IBM SPSS version 22.0 software for the analysis.

Socio demographics

Age:

Age of the mothers was left open as at last birthday in the questionnaire and then eventually grouped as follows:

≤ 24 years

25-39 years

≥ 40 years

SOCIOECONOMIC STATUS

Occupation:

The occupation was left open and eventually grouped using the modified International Labour Organization (ILO) Classification into skill level 0-4.[52]

Skill level 0 includes retiree, housewives, the unemployed and students.

Skill level 1 includes labourers, cleaners

Skill level 2 includes traders, receptionist, civil servants, bus drivers, farmers, tailors

Skill level 3 includes technicians, other health workers

Skill level 4 includes doctors, lawyers, engineers, teachers, nurses, accountants, managers.

Socioeconomic status:

Respondents were grouped into low, medium, and high socioeconomic status based on their monthly income, skill level and level of education.[53-55]

Skill level

Skill levels 0 & 1 was given a score of 1

Skill levels 2 & 3 was given a score of 2

Skill level 4 was given a score of 3

Educational status

No formal education and primary level of education was given a score of 1

Secondary level of education was given a score of 2

Tertiary level of education was given a score of 3

Income level

Income level <₦30,000 was given a score of 1

Income level between ₦30,000 - ₦150,000 was given a score of 2

Income level >₦150,000 was given a score of 3

The average of the three scores was computed and rounded off the nearest whole number

The computed score was interpreted as follows:

1: Low socioeconomic status was given the scores 0-3

2: Middle socioeconomic status was given the scores 4-6

3: High socioeconomic status was given the scores 7-10

Health beliefs

HB can be beneficial, harmful or harmless and a scoring system was employed in the study to assess the various HB of the respondents. A total of 9 questions were asked to assess the health beliefs while to assess the effect of COVID-19 on HB, a total number of 8 questions was used to assess the HB. Harmful HB was assigned a score of 0, harmless HB was assigned a score of 1 and beneficial HB was assigned a score of 2. Cumulative scores were obtained from addition of

answers. The maximum score was 10 while minimum score was 0. The scores were transformed to percentage and classified thus:

Harmful HB were scores that fell between 0 and 39.9%

Harmless HB were scores that fell between 40.0 and 59.9%

Beneficial HB were scores that fell between 60.0 and 100%

SCORING SYSTEM ON HSB:

The appropriateness of the HSB was determined by using a scoring system to assess the HSB A set of 11 questions was employed to evaluate the HSB while a total number of 4 questions was used to assess the influence of COVID-19 on HSB. For a good HSB, a score of 1 was assigned and for a poor HSB, a score of 0 was allocated. Cumulative scores were obtained from addition of answers. The maximum score was 11 while minimum score was 0. The scores were converted to percentage and classified thus:

Poor HSB were scores that fell between 0 and 49.9%

Good HSB were scores that fell between 50.0 and 100%

3.9 DATA PRESENTATION

Results were presented in prose, frequency tables, and charts.

3.10 ETHICAL CONSIDERATION

The study was conducted with the supervision of a Professor from the Department of Community Health at the University of Benin. Ethical clearance was obtained from the Research and Ethics Committee (REC), in University of Benin Teaching Hospital. Permission was obtained from the Head of Department, Department of Community Health, School of Medicine, Collage of Medical Sciences and University of Benin.

The research study received official approval from the Odionwere of the Oluku community. After being provided with information about the purpose of the study, verbal consent was obtained from the respondents, indicating their voluntary agreement to participate in the research. The participants were given assurances that their participation in the survey was voluntary, and they had the freedom to withdraw at any point without facing any negative consequences. They were also guaranteed the confidentiality of their responses, ensuring that their identity and individual answers would be kept private and anonymous.

1.11 LIMITATIONS OF STUDY

he information collected in this study relied on self-reporting, which introduces the possibility of recall bias. The information required from our respondents was highly sensitive as a result, privacy and confidentiality of participants during our interview was be ensured.

CHAPTER FOUR

RESULTS

The study involved the participation of 642 women. The subsequent sections of this report present the results in accordance with the specific objectives of the study.

The chapter is divided into the following sections:

A. Socio-demographic characteristics of mothers of under-5 in Oluku community.
B. Health beliefs of the mothers of under-5 in Oluku community.
C. Health seeking behaviour of the mothers of under-5 in Oluku community.
D. Factors affecting health beliefs and health seeking behaviour of the mothers of under-5 in Oluku community.
E. Effects of COVID--19 on the health beliefs and health seeking behaviour of mothers of under-5 in Oluku community.

SECTION A:

SOCIODEMOGRAPHIC CHARACTERISTICS OF MOTHERS OF UNDER-5s IN OLUKU COMMUNITY

TABLE 1: Sociodemographic characteristics of respondents

Variable	Frequency (n=624)	Percent (%)
Age in years		
< 25	96	15.4
25-39	457	73.2
≥ 40	71	11.4
Mean ± SD	30.7 ± 6.3	
Ethnicity		
Benin	174	27.9
Urhobo	92	14.7
Esan	84	13.5
Yoruba	69	11.1
Igbo	61	9.8
Hausa	27	4.3
Etsako	22	3.5
Itsekiri	22	3.5
Igala	21	3.4
Ibibio	20	3.2
Tiv	18	2.9
*Others	14	2.2
Religion		
Christianity	495	79.4
Islam	90	14.4
Pagan	24	3.8
African Traditional Religion (ATR)	15	2.4
Marital status		
Married	512	82.1
Single	58	9.3
Cohabiting	31	5.0
Separated	12	1.9
Widowed	9	1.4
Divorced	2	0.3

***Others: Efik, Igbirra, Ukwani, Nupe

Table 1 shows that almost three-quarters of the respondents, 457 (73.2%) were in the age group of 25-39 years. The mean age of the respondents was 30.7 **(**± 6.3) years. Over a quarter of the respondents were of Benin ethnicity 174 (27.9%). Majority of the respondents 495 (79.3%) were Christians and 512 (82.1%) were married.

TABLE 2: Socio-economic characteristics of respondents

Variable	Frequency (n=624)	Percent (%)
Level of Education		
Primary	98	15.7
Secondary	312	50.0
Tertiary	214	34.3
Skill level		
0	42	6.7
1	5	0.8
2	486	77.9
3	1	0.2
4	90	14.4
Average monthly income(₦)		
<30,000	47	7.5
30,000 – 150,000	505	81.0
>150,000	72	11.5
Socioeconomic status		
Low	0	0.0
Middle	395	63.3
High	229	36.7

Half of the respondents 312 (50.0%) had a secondary level of education. Majority of the women, 486 (77.9%) had skill level 2 occupational classification. A significant majority of the respondents, comprising 505 individuals (81.0%), reported an average monthly income ranging from ₦30,000 to ₦150,000. More than half of the respondents, 395 (63.2%) were in the middle socioeconomic status.

SECTION B:

HEALTH BELIEFS OF MOTHERS OF UNDER-5s

Table 3: Health belief of respondents

Variable	Frequency	Percent
Causes of illness (n = 624)		
Carelessness	424	67.9
Dysfunction	415	66.5
Natural occurrence	395	63.3
Inherited	283	45.4
Witches	290	46.5
Evil spirit	197	31.6
Gods Punishment	161	25.8
Health belief		
Beneficial	157	25.6
Harmless	304	48.7
Harmful	163	26.1

About two-third, 424 (67.9%) and 415 (66.5%) of the mothers believed that carelessness and body organ dysfunction can lead to illness respectively; while more than half, 395 (63.3%) believed that natural occurrence can lead to illness. About a quarter of the respondents, 157 (25.2%), almost half of the respondents 304 (48.7%) and about one-fourth of the respondents 163 (26.1%) had beneficial, harmless, and harmful health belief respectively.

SECTION C:

HEALTH SEEKING BEHAVIOUR OF MOTHERS OF UNDER-5s

Table 4: Health seeking behaviour of respondents

Variable	Frequency	Percent
Seeks help when members of household are sick	614	98.4
Preferred healthcare provider*:		
Patent medicine vendor (PMV)	455	72.9
Hospital	295	47.3
Place of worship	114	18.3
Traditional healers	67	10.7
Take medications when you are ill:	620	99.4
Remedies taken when ill*:		
Drugs gotten from the Patent medicine vendor (PMV)	436	69.9
Drugs prescribed by the doctor	289	46.3
Herbal mixtures	123	19.7
Health Seeking is done:		
Immediately symptoms begin	314	49.3
When the self-treatment fails	130	20.8
When symptoms are severe	111	17.8
When symptoms are mild	61	9.8
When symptoms don not resolve over a long time	12	1.9
Children have been immunized	581	93.1
Health seeking behaviour		
Good	343	55.5
Poor	281	45.5

*Multiple responses

Almost all the respondents 614 (98.4%) sought for help when members of household were sick. Of these, more than two-third, 455 (72.9%) go to patent medicine vendor. Almost all the mothers 620 (99.4%) agreed they take medication when ill and close to half, 314 (49.3%) sought health care immediately symptoms begin. As regards the medication taken when ill, majority, 436

(69.9%) mothers took drugs prescribed at patent medicine store. Almost all respondents 581 (93.1%) immunized their children.

Of the total respondents, 343 individuals (55.5%) exhibited good HSB, while 281 individuals (45.5%) demonstrated poor HSB.

SECTION D:

FACTORS ASSOCIATED WITH THE HEALTH BELIEFS OF MOTHERS OF UNDER-5s

Table 5: Sociodemographic characteristics and health beliefs of the respondent

Variable	Health beliefs (n=624)			Test statistics	p-value
	Beneficial	Harmless	Harmful		
Age group (years)					
< 25	28 (29.2)	45 (45.8)	23 (24.0)	$\chi^2 = 8.686$	0.082
25 – 39	106 (23.2)	221 (48.4)	130 (28.4)		
≥ 40	23 (32.4)	38 (53.5)	10 (14.1)		
Religion					
Christianity	126 (25.5)	243 (49.0)	126 (25.5)	$\chi^2 = 7.369$	0.288
Islam	24 (26.7)	36 (40.0)	30 (33.3)		
**Others	7 (18.0)	25 (64.0)	7 (18.0)		
Marital Status					
Single	21 (36.2)	23 (39.7)	14 (24.1)	Fischers = 9.007	0.516
Married	121 (23.6)	253 (49.4)	138 (27.0)		
Separated	4 (33.3)	7 (58.4)	1 (8.3)		
Cohabiting	9 (29.0)	14 (45.2)	8 (25.8)		
***Others	2 (18.2)	7 (63.6)	2 (18.2)		
Household size					
1-6	121 (24.3)	245 (49.3)	131 (26.4)	$\chi^2 = 0.883$	0.650
>6	36 (28.3)	59 (46.5)	32 (25.2)		

**Others- Pagan and African Traditional Religion, ***Others- Widowed and Divorced

Age (p = 0.082), religion (0.288), marital status (p = 0.516) and household size (p = 0.650) had no statistically significant association with the health beliefs of mothers of under-5s (p > 0.05).

Table 6: Socioeconomics and health beliefs of the respondent

Variable	Health belief (n=624)			Test statistics	p-value
	Beneficial	Harmless	Harmful		
Level of Education					
Primary	20 (20.4)	56 (57.2)	22 (22.4)	$\chi^2 = 7.668$	0.097
Secondary	76 (24.4)	142 (45.5)	94 (30.1)		
Tertiary	61 (28.5)	106 (49.5)	47 (22.0)		
Average household income (₦)					
< 30,000	6 (30)	8 (40.0)	6 (30)	$\chi^2 = 12.515$	0.014*
30,000-150,000	140 (26.3)	247 (46.4)	145 (27.3)		
> 150,000	11 (15.3)	49 (68.0)	12 (16.7)		
Skill level					
0-1	8 (17.0)	24 (51.1)	15 (31.9)	Fischers = 7.054	0.508
2-3	128 (26.3)	230 (47.2)	129 (26.5)		
4	20 (22.2)	50 (55.6)	20 (22.2)		
Socioeconmonic status					
Low and Middle	95 (24.1)	187 (47.3)	113 (28.6)	$\chi^2 = 3.491$	0.175
High	62 (27.1)	117 (51.1)	50 (21.8)		

Table 6 shows that the average household income had a statistically significant association with the health belief of mothers of under-5s (p = 0.014). The level of education (p = 0.097), skill level (p = 0.508) and socioeconomic status (p = 0.175) had no statistically significant association with the health belief of the mothers of under-5s.

Table 7: Predictors of health beliefs of respondents

Variable	β(Regression Coefficient)	Odds Ratio	95% CI for OR		p-value
			Lower	Upper	
Age (years)	-0.036	0.965	0.935	0.995	0.023*
Household size	0.005	1.005	0.907	1.114	0.921
Household monthly income					
<₦30,000	0.360	1.433	0.483	4.249	0.517
₦30,000 - ₦150,000	0.213	1.237	0.704	2.175	0.460
>₦150,000*		1			
Marital status					
Never married	-0.535	0.586	0.352	0.974	0.039*
Ever married*		1			
Level of education					
Primary	0.424	1.528	0.599	3.900	0.375
Secondary	0.717	2.049	0.893	4.698	0.090
Tertiary*		1			
Skill level					
0-1	-0.212	0.809	0.344	1.899	0.626
2-3	-0.146	0.865	0.503	1.485	0.598
4*		1			
Socioeconomic status (SES)					
Low-middle	-0.430	0.651	0.266	1.591	0.346
High					

*** -Statistically significant, CI = Confidence Interval, OR = Odds Ratio. *Reference category, R^2 = 2.4% - 3.2%**

As the age increases, respondents were less likely to have beneficial HB with an odd of 0.959. This was statistically significant was (p = 0.023; CI = 0.935 - 0.995).

As the household size increases, respondents were more likely to have HB with an odd of 1.1005. This was however not statistically significant was (p = 0.921; CI = 0.907 – 1.114).

Household with income of less than ₦30,000 were more likely to have beneficial HB compared with household with income greater than ₦150,000 with an odds ratio of 1.433. This was not statistically significant (p = 0.517; CI = 0.483 – 4.249). Respondents with household income of ₦30,000 - ₦150,000 were more likely to have beneficial HB compared to those with income greater than ₦150,000 with an odds ratio of 1.237 and this was not statistically significant (p = 0.460; CI = 0.704-2.175).

Respondents who had never been married were found to have a lower likelihood of having beneficial HB compared to those who had been previously married, with an odds ratio of 0.586.and this was statistically significant (p = 0.039; CI = 0.352 - 0.974).

In contrast to individuals with a tertiary education level, respondents with primary education demonstrated a higher likelihood of having beneficial HB with odds ratio of 1.528. This was not statistically significant (p = 0.375; CI = 0.599 - 3.900). Respondents with secondary level of education were more likely to have beneficial HB compared to those with tertiary level of education as indicated by odd ratio 2.049. The lack of statistical significance was observed in this case. (p = 0.090; CI= 0.893 – 4.698).

Respondents with skill level 0-1 were less likely to have beneficial HB compared to those with skill level 4 with odds ratio 0.809. This was not statistically significant (p = 0.626, CI= 0.344 – 1.889). Respondents with skill level 2-3 were less likely to have beneficial HB compared to those with skill level 4 with odds ratio 0.865. This was not statistically significant (p = 0.598, CI = 0.503 – 1.485).

Respondents belonging to the low-middle socioeconomic status category exhibited a lower likelihood of having beneficial HB compared to those with a high socioeconomic status, as indicated by an odds ratio of 0.651. This was not statistically significant ($p = 0.346$, CI = 0.266 – 1.591).

Table 8: Sociodemographic characteristics and health seeking behaviour of the respondent

Variable	Health seeking behaviour		Test statistics	p-value
	Good	Poor		
Age group (years)				
< 25	48 (50.0)	48 (50.0)	χ^2=1.489	0.475
25– 39	253 (55.4)	204 (44.6)		
≥ 40	42 (59.2)	29 (40.8)		
Religion				
Christianity	282 (57.0)	213 (43.0)	χ^2=8.307	0.040*
Islam	45 (50.0)	45 (50.0)		
*Others	16 (41.0)	23 (59.0)		
Marital Status				
Single	28 (48.3)	30 (51.7)	Fischers=9.235	0.084
Married	292 (57.0)	220 (43.0)		
Separated	6 (50.0)	6 (50.0)		
Cohabiting	13 (41.9)	18 (58.1)		
***Others	4 (36.4)	7 (63.6)		
Household size				
1-6	287 (57.7)	210 (42.3)	χ^2=7.616	0.006*
>6	56 (44.1)	71 (55.9)		

Others- Pagan and African Traditional Religion, ***Others- Widowed and Divorced, *- Statistically significant.**

Table 8 shows that religion (p = 0.040) and household size (p = 0.006) had a statistically significant association with the health seeking behaviour of the mothers of under-5s. The lack of statistical significance was observed in age group (p = 0.475) and marital status (p = 0.084) with the health seeking behaviour of mothers of under-5s.

Table 9: Socioeconomics and health seeking behaviour of the respondent

Variable	Health seeking behaviour		Test statistics	p-value
	Good	Poor		
Level of Education				
Tertiary	157 (73.4)	57 (26.6)	$\chi^2 = 47.544$	<0.001*
Secondary	149 (47.8)	163 (52.2)		
Primary	37 (37.8)	61 (62.2)		
Average household income(₦)				
< 30000	13 (65.0)	7 (35.0)	$\chi^2 = 46.125$	<0.001*
30000-150000	264 (49.6)	268 (50.4)		
> 150000	66 (91.7)	6 (8.3)		
Skill level				
0	18 (42.9)	24 (57.1)	Fischers = 43.881	<0.001*
1	3 (42.9)	4 (57.1)		
2	241 (50.2)	239 (49.8)		
3	3 (60.0)	2 (40.0)		
4	78 (86.7)	12 (13.3)		
Socioeconomic status				
Low and Middle	172 (43.5)	223 (56.5)	$\chi^2 = 55.494$	<0.001*
High	171 (74.7)	58 (25.3)		

*** -**Statistically significant

Level of education ($p < 0.001$), average household income ($p < 0.001$), skill level ($p < 0.001$) and socioeconomic status ($p < 0.001$) had statistically significant association with the health seeking behaviour of mothers of under-5s.

Table 10: Predictors of health seeking behaviour

Variable	β (Regression Coefficient)	Odds Ratio	95% CI for OR		p-value
			Lower	Upper	
Age in years	0.004	1.004	0.971	1.037	0.824
Household size	-0.085	0.919	0.823	1.025	0.129
Household monthly income					
<₦30,000	-1.440	0.237	0.058	0.959	0.044*
₦30,000 - ₦150,000	-1.941	0.144	0.056	0.367	<0.001*
>₦150,000		1			
Marital status					
Never married	-0.348	0.706	0.416	1.199	0.197
Ever married*		1			
Level of education					
Primary	-0.793	0.452	0.153	1.333	0.150
Secondary	-0.396	0.673	0.250	1.807	0.432
Tertiary*		1			
Skill level					
0-1	-1.147	0.318	0.114	0.884	0.028*
2-3	-1.195	0.303	0.144	0.636	0.002*
4*		1			
Socioeconomic status					
Low-middle	-0.146	0.864	0.299	2.497	0.787
High		1			

*** -Statistically significant, CI = Confidence Interval, OR = Odds Ratio. *Reference category, R^2 = 15.1% - 20.2%**

As the age of respondents increased, there was a slight increase in the likelihood of having good HSB with an odds ratio of 1.004. However, this association was not found to be statistically significant (p = 0.824; CI = 0.971 - 1.037).

As household size increases, respondents were less likely to have good HSB with an odd of 0.919. This was however not statistically significant was (p = 0.129; CI = 0.823 – 1.025)

Households with an income of less than ₦30,000 were found to be less likely to have good HSB compared to households with an income greater than ₦150,000 with an odds ratio of 0.044. This was not statistically significant (p = 0.044; CI = 0.058 – 0.959). Respondents with household income of ₦30,000 - ₦150,000 were less likely to have good HSB compared to those with income greater than ₦150,000 with an odds ratio of 0.144 and this was statistically significant (p < 0.001; CI = 0.056 – 0.367).

Respondents who were never married exhibited a lower likelihood of having good HSB compared to those who have ever been married, with an odds ratio of 0.706. However, this association was not found to be statistically significant (p = 0.197; CI = 0.416 - 1.199).

Respondents with primary level of education were less likely to have good HSB compared to those with tertiary level of education with odds ratio of 0.452. This was not statistically significant (p = 0.150; CI = 0.153 – 1.333). Respondents with secondary level of education were more likely to have good HSB compared to those with tertiary level of education with an odds ratio of 0.673. This was not statistically significant (p = 0.432; CI = 1.807 – 0.250).

Respondents with skill level 0-1 were less likely to have good HSB compared to those with skill level 4 with odds ratio 0.318. This was statistically significant (p = 0.0.028, CI = 0.114 – 0.884). Respondents with skill level 2-3 were less likely to have good HSB compared to those with skill level 4 with odds ratio 0.303. This was statistically significant (p = 0.002, CI = 0.144 – 0.636).

Respondents with low-middle socioeconomic status were less likely to have good HSB compared to those with high socioeconomic status with odds ratio 0.864. This was not statistically significant (p = 0.689, CI= 0.299 – 2.497).

Table 11: Factors affecting health seeking behaviour of the respondents

Variable	Frequency	Percent
Seek formal healthcare services when sick		
Yes	305	48.9
No	319	51.1
Reasons for not seeking formal healthcare when sick* (n=319)		
The illness is not life-threatening	256	80.3
No money to go to the health facility	165	51.7
I use herbal medications and do not see the need to visit the health care facility	116	36.4
The health facility is too far from my place of residence	97	30.4
Long waiting time at the health facility	88	27.6
Bad attitude of the health workers	25	7.8
Lack of confidence in the health care services provided	21	6.6
No health workers in the health facility	19	6.0
Religious reasons	5	1.6

*Multiple Responses

Table 11 shows that about half of the respondents, 319 (51.1%), do not seek formal healthcare when they are sick. Out of these respondents, the results reveal that the majority 256 (80.3%), about half 165 (51.7%), more than one-third 116 (36.4%), and less than half 97 (30.4%) agreed that the following were reasons why they do not seek formal healthcare: the illness is not life-threatening, lack of funds, use of herbal medication, and distance to health facilities, respectively.

SECTION E:

EFFECT OF COVID-19 ON HEALTH BELIEF AND HEALTH SEEKING BEHAVIOUR OF MOTHERS OF UNDER-5s

Table 12: COVID-19 influenced health beliefs of mothers of under-5s in Oluku community

Variable	Frequency (n=624)	Percent
COVID-19 is very dangerous	539	86.4
Scared of COVID-19	448	71.8
May have been infected with COVID-19 but did not show any symptom	95	15.2
COVID-19 can predispose me to other kind of illness	313	50.1
I do not believe in hand washing and wearing of facemasks in controlling and preventing the spread of the infection	126	20.2
COVID-19 is a disease for the poor	27	4.3
Anyone with cough and catarrh has COVID-19	93	14.1
The use of herbal medication is effective against COVID-19 and other diseases	201	32.2
If a disease spread worldwide, it is dangerous	555	88.9
If a disease does not spread worldwide, it is not dangerous	263	42.1
Health belief		
Beneficial	495	79.3
Harmless	77	12.3
Harmful	52	8.3

Majority of the respondents, 539 (86.0%) cited COVID-19 as a very dangerous disease. Close to two-third, 448 (71.8%) agreed that they are afraid of covid-19; almost all, 555 (88.9%) agreed that a disease that spreads world-wide is dangerous while up to half, 313 (50.1%) agreed that COVID-19 infection predispose them to other infection.

Due to the COVID-19 pandemic, a vast majority 495 (79.3%) mothers developed beneficial health belief, few 77 (12.3%) developed harmless health belief while less than one-tenth (8.3%) developed harmful health belief.

Table 13: Sociodemographics and covid-19 reported effects on health beliefs of the respondent

Variable	Health belief			Test statistics	p-value
	Beneficial	Harmless	Harmful		
Age group (years)					
< 25	71 (74.0)	5 (6.3)	19 (19.8)	$\chi^2 = 24.288$	<0.001*
25 – 39	372 (81.4)	59 (12.9)	26 (5.7)		
≥ 40	30 (77.0)	4 (10.2)	5 (12.8)		
Religion					
Christianity	407 (82.2)	59 (11.9)	29 (5.9)	$\chi^2 = 25.325$	<0.001*
Islam	58 (64.4)	14 (15.6)	18 (20.0)		
*Others	7 (18.0)	25 (64.1)	7 (18.0)		
Marital Status					
Single	40 (69.0)	10 (17.2)	8 (13.8)	$\chi^2 = 8.318$	0.598
Married	412 (80.5)	59 (11.5)	41 (8.0)		
Separated	11 (91.7)	1 (8.3)	0 (0.0)		
Cohabiting	23 (74.2)	5 (16.1)	3 (9.7)		
**Others	9 (81.8)	2 (18.2)	0 (0.0)		
Household size					
1-6	401 (80.7)	57 (11.5)	39 (7.8)	$\chi^2 = 2.761$	0.251
>6	94 (74.0)	20 (15.7)	13 (10.2)		

*** -**Statistically significant, ** Others - Widowed and Divorced

Age group ($p < 0.001$) and religion ($p < 0.001$) had a statistically significant association with the effect of COVID-19 on the health beliefs of mothers of under-5s. The marital status ($p = 0.598$) and household size ($p = 0.251$) did not show a statistically significant association with the impact of COVID-19 on the health beliefs of mothers with children under the age of five.

Table 14: Socioeconomics and COVID-19 reported effects on health beliefs of the respondent

Variable	Health belief				p-value
	Beneficial	Harmless	Harmful	Test statistic	
Level of Education					
Tertiary	185 (86.4)	19 (8.9)	10 (4.7)	$\chi^2 = 15.202$	0.004*
Secondary	242 (77.6)	38 (12.2)	32 (10.3)		
Primary	68 (69.4)	20 (20.4)	10 (10.2)		
Average household income(₦)					
< 30,000	16 (80.0)	2 (10.0)	2 (10.0)	$\chi^2 = 11.689$	0.020*
30,000-150,000	411 (77.3)	72 (13.5)	49 (9.2)		
> 150,000	68 (94.4)	3 (4.2)	1 (1.4)		
Skill level					
0-1	29 (61.7)	15 (31.9)	3 (6.4)	$\chi^2 = 20.339$	<0.001*
2-3	388 (79.7)	56 (11.5)	43 (8.8)		
4	78 (86.8)	6 (6.7)	6 (6.7)		
Socioeconomic status					
Low-Middle	298 (75.4)	56 (14.2)	41 (10.4)	$\chi^2 = 10.401$	0.006*
High	197 (86.0)	21 (9.2)	11 (4.8)		

* -Statistically significant

Level of education ($p = 0.004$), average household income ($p = 0.020$), Skill level ($p < 0.001$) and socioeconomic status had a statistically significant association with the effect of COVID-19 on the health beliefs of mothers of under-5s.

Table 15: Predictors of the effect of COVID-19 on health beliefs

Variable	β (Regression Coefficient)	Odds Ratio	95% CI for OR		p-value
			Lower	Upper	
Age (years)	-0.44	0.957	0.904	1.013	0.127
Household size	0.087	1.091	0.913	1.302	0.338
Household monthly income (₦)					
<₦30,000	1.541	4.668	0.357	60.998	0.240
₦30,000 - ₦150,000	1.565	4.785	0.607	37.703	0.137
>₦150,000		1			
Marital status					
Never married	0.417	1.518	0.678	3.396	0.310
Ever married*		1			
Level of education					
Primary	0.357	1.429	0.224	9.106	0.705
Secondary	0.300	1.349	0.247	7.365	0.729
Tertiary*		1			
Skill level					
0-1	-1.546	0.213	0.034	1.325	0.097
2-3	-0.627	0.534	0.157	1.817	0.315
4*		1			
Socioeconomic status					
Low-Middle	0.533	1.705	0.259	11.213	0.579
High		1			

CI=Confidence Interval, OR=Odds Ratio. *Reference category, R^2 = 2.7% - 6.2%

As the age increases, respondents were less likely to have beneficial HB due to COVID-19 with an odd of 0.957. This was not statistically significant was (p = 0.127; CI = 0.913 – 1.302).

As the household size increases, respondents were more likely to have HB due to COVID-19 with an odd of 1.091. This was however not statistically significant was (p = 0.338; CI= 0.913 – 1.302.

Household with income of less than ₦30,000 were more likely to have beneficial HB due to COVID-19 compared with household with income greater than ₦150,000 with an odds ratio of 4.668. This was not statistically significant (p = 0.240; CI = 0.357 – 60.998). Respondents with household income of ₦30,000 - ₦150,000 were more likely to have beneficial HB due to COVID-19 compared to those with income greater than ₦150,000 as indicated by odds ratio of 4.785 and this was not statistically significant (p = 0.137; CI = 0.607 – 37.703).

Respondents who were never married were more likely to have beneficial HB due to COVID-19 compared to those that have ever married with an odds ratio of 1.518 and this was not statistically significant (p = 0.310; CI = 0.678 - 3.396).

Respondents with a primary level of education were more likely to exhibit beneficial HB due to COVID-19 compared to those with a tertiary level of education, with an odds ratio of 1. 429. This was not statistically significant (p = 0.705; CI = 0.224 – 9.106). Respondents with secondary level of education were more likely to have beneficial HB due to COVID-19 compared to those with tertiary level of education with an odds ratio of 1.349. This was not statistically significant (p = 0.729; CI = 0.247 – 7.365).

Respondents with skill level 0-1 were less likely to have beneficial HB due to COVID-19 compared to those with skill level 4 with odds ratio 0.213. This was not statistically significant (p = 0.097, CI = 0.334 – 1.325). Respondents with skill level 2-3 were less likely to have beneficial HB due to COVID-19 compared to those with skill level 4 with odds ratio 0.534. This was not statistically significant (p = 0.315, CI = 0.157 – 1.817).

Respondents with low-middle socioeconomic status more less likely to have beneficial HB due to COVID-19 compared to those of high socioeconomic status with odds ratio 1.705. This was not statistically significant (p = 0.579, CI = 0.259 – 11.213).

Table 16: Effect of covid-19 on health seeking behaviours of mothers of under-5s in Oluku community

Variable	Frequency	Percent
Effect of COVID-19 on HSB		
Anxiety that my child or myself may contract the virus in the health facility	210	33.7
Inability to get my sick child drugs because of the lockdown	172	27.6
I could not go because the roads were blocked?	132	21.2
Unavailability of drugs at the health facility even though I was able to get there	112	17.9
Inability for my sick child to see a doctor at the health facility?	111	17.8
My sick child was admitted into the health facility for suspicion of COVID-19 related symptoms?	82	13.1
Health seeking behaviour		
Good	504	80.8
Poor	120	19.2

Results also revealed that one-third 210 (33.7%) mothers were worried that either themselves or their children would contract COVID- 19 disease in the health facility, 172 (27.6%) mothers could not get their sick child drugs due to the lockdown that resulted from the COVID- 19 pandemic, up to one-fifth, 132 (21.2%) could not go the health facility because the roads were blocked, some 112 (17.9%) were unable to get drugs at the health facility at arrival.

In all, despite the recent COVID- 19 pandemic, majority, 504 (80.8%) mothers still had good health seeking behaviour while less than one-third, 120 (19.2%) mothers had poor health seeking behaviour.

Table 17: Sociodemographic characteristics and effects of covid-19 on health seeking behaviour of the respondent

Variable	Health seeking behaviour		Test statistics	p-value
	Good	Poor		
Age group (years)				
< 25	72 (75.0)	24 (25.0)	$\chi^2 = 4.184$	0.123
25– 39	378 (82.7)	79 (17.3)		
≥ 40	54 (76.1)	17 (23.9)		
Religion				
Christianity	402 (81.2)	93 (18.8)	$\chi^2 = 313$	0.958
Islam	71 (78.9)	19 (21.1)		
**Others	31 (79.5)	8 (20.5)		
Marital Status				
Single	39 (67.2)	19 (32.8)	$\chi^2 = 20.343$	0.001*
Married	429 (83.8)	83 (16.2)		
Separated	6 (50.0)	6 (50.0)		
Cohabiting	22 (71.0)	9 (29.0)		
***Others	8 (72.7)	3 (27.3)		
Household size				
1-6	402 (80.9)	95 (19.1)	$\chi^2 = 0.21$	0.884
>6	102 (80.3)	25 (19.7)		

**Others- Pagan and African Traditional Religion, ***Others- Widowed and divorced, * - Statistically significant

Marital status (p = 0.001) had a statistically significant association with the effect of COVID-19 on the HSB of mothers of under-5s. Age group (p = 0.123), religion (p = 0.958), household size

(p = 0.884) and number of under-5s (p = 0.256) had no statistically significant association with the effect of COVID-19 on the HSB of mothers of under-5s.

Table 18: Socioeconomics and effects of covid-19 on health seeking behaviour of the respondent

Variable	Health seeking behaviour		Test statistics	p-value
	Good	Poor		
Level of Education				
Tertiary	158 (73.8)	46 (56)	$\chi^2 = 26.159$	<0.001*
Secondary	273 (87.5)	39 (12.5)		
Primary	92 (93.9)	6 (6.1)		
Average household income(₦)				
<30000	16 (80.0)	4 (20.0)	$\chi^2 = 2.642$	0.267
30000-150000	442 (83.1)	90 (16.9)		
> 150000	65 (90.3)	7 (9.7)		
Skill level				
0-1	37 (78.7)	10 (21.3)	$\chi^2 = 4.242$	0.120
2-3	416 (85.4)	71 (14.6)		
4	20 (22.2)	70 (77.8)		
Socioeconomic status				
Low-Middle	350 (88.6)	45 (11.4)	$\chi^2 = 18.230$	<0.001*
High	173 (75.5)	56 (24.5)		

* -Statistically significant

Level of education ($p < 0.01$) and Socioeconomic status ($p < 0.001$) had statistically significant association with the effect of COVID-19 on the HSB of mothers of under-5s while average household income ($p = 0.305$), skill level ($p = 0.120$) had no statistically insignificant association with the effect of COVID-19 on the HSB of mothers of under-5s.

Table 19: Predictors of health seeking behaviour due to the effect of COVID-19

Variable	β (Regression Coefficient)	Odds Ratio	95% CI for OR		p-value
			Lower	Upper	
Age (in years)	0.000	1.000	0.959	1.042	0.988
Household size	0.051	1.052	0.922	1.201	0.448
Household monthly income					
<₦30,000	1.055	2.873	0.677	12.196	0.153
₦30,000 - ₦150,000	1.243	3.467	1.586	7.576	0.002*
>₦150,000		1			
Marital status					
Never married	0.570	1.767	0.954	3.376	0.070
Ever married*		1			
Level of education					
Primary	-1.631	0.196	0.053	0.723	0.014*
Secondary	-0.766	0.465	0.163	1.325	0.152
Tertiary*		1			
Skill level					
0-1	0.937	2.553	0.903	7.219	0.077
2-3	-0.072	0.930	0.499	1.736	0.820
4*		1			
Socioeconomic status					
Low-Middle	-0.589	0.555	0.178	1.729	0.310
High		1			

***-Statistically significant, CI=Confidence Interval, OR=Odds Ratio. *Reference category, R^2 = 9.2% - 14.7%**

As the age increases, respondents were more likely to have good HSB due to COVID-19 with an odd of 1.000. This was not statistically significant was (p = 0.988; CI = 0.959 – 1.042).

As the household size increases, respondents were more likely to have good HSB due to COVID-19 with an odd of 1.052. This was however not statistically significant was (p = 0.448; CI = 0.922 – 1.201.

Household with income of less than ₦30,000 were more likely to have good HSB due to COVID-19 compared with household with income greater than ₦150,000 with an odds ratio of 2.873 This was not statistically significant (p = 0.153; CI = 0.677 – 12.198). Respondents with household income of ₦30,000 - ₦150,000 were more likely to have good HSB due to COVID-19 compared to those with income greater than ₦150,000 with an odds ratio of 3.467 and this was statistically significant (p = 0.002; CI = 1.586 – 7.576).

Respondents who were never married were more likely to have good HSB due to COVID-19 compared to those that have ever married with an odds ratio of 1.767 and this was not statistically significant (p = 0.070; CI = 0.954 - 3.376).

Respondents with primary level of education were less likely to have good HSB due to COVID-19 compared to those with tertiary level of education with odds ratio of 0.196. This was statistically significant (p = 0.014; CI = 0.053 – 0.723). Respondents with secondary level of education were less likely to have good HSB due to COVID-19 compared to those with tertiary level of education with an odds ratio of 0.465. This was not statistically significant (p = 0.152; CI = 0.163 – 1.325).

Respondents with skill level 0-1 were more likely to have good HSB due to COVID-19 compared to those with skill level 4 with odds ratio 2.553. This was not statistically significant (p = 0.077, CI = 0.903 – 7.219). Respondents with skill level 2-3 were less likely to have good HSB due to COVID-19 compared to those with skill level 4 with odds ratio 0.930. This was not statistically significant (p = 0.820, CI = 0.499 – 1.736).

Respondents with low-middle socioeconomic status are less likely to have good HSB due to COVID-19 compared to those of high socioeconomic status with odds ratio 0.555. This was not statistically significant (p = 0.310, CI = 0.178 – 1.72).

CHAPTER FIVE

DISCUSSION

In this study, fewer than one-third of the respondents had harmful health beliefs. This contrasts with the findings of a cross-sectional study conducted in Southern Ethiopia, where the majority of respondents had harmful health beliefs.[56] The difference in results may be due to the fact that up to four-fifths of the mothers had at least a secondary educational status. Therefore, prolonged exposure to Western education may be a contributing factor to the low prevalence of harmful health beliefs among mothers. People who possess a higher levels of education tend to have better in life than those with less education. It has been highlighted that tertiary education, in particular, plays a critical role in affecting mortality rates, longer life span, and child immunization status.[57]

According to this study, approximately half of the participating mothers believed that illness could be caused by witchcraft and evil spirits. This finding is consistent with the results of a qualitative study conducted in Abia,[58] which revealed that many of the mothers in the study believed that childhood illnesses were caused by human agents such as witchcraft and ancestral spirits. This perception could be due to the fact that the community is located in a sub-Saharan African village where the belief in the influence of witchcraft and evil spirits on health is still

prevalent.[59] The beliefs about the causes of illness influence decisions regarding seeking treatment. Wrong notion about the causes of ailments can lead individuals to seek treatment or assistance from inappropriate sources, such as traditional healers.[60]

Furthermore, almost all of the mothers who participated in this study had immunized their children. This finding agrees with a quantitative descriptive study done in Saudi Arabia, where almost all the women had vaccinated their young one with the necessary vaccines.[61] However, this finding contrasts with the results of a cross-sectional survey in Sudan, where only half of the women fully immunized their children.[62] This difference may be due to increasing awareness of the benefits of immunization through mass media, the internet, and orientation provided to pregnant women during routine antenatal care services. Immunization is a success story for global health and development, as it saves millions of lives every year. Vaccines reduce the risk of contracting a disease by working with the body's natural defences to build immunity. When you receive a vaccine, your immune system responds strongly to a particular disease, reducing the chances of the disease causing severe harm.[63]

This study also revealed that over half of the mothers demonstrated positive health-seeking behaviour. This contrasts with the findings of a community cross-sectional study conducted in Zambia, where almost all mothers did not seek appropriate and prompt healthcare for their sick children.[64] Another cross-sectional study carried out in Nigeria in 2010 showed that only 7.1% of the respondents met the standards for appropriate healthcare-seeking behaviour, which contradicts this discovery. The reason for this difference in findings could be that most of the participants in this study have received at least a secondary level of education and belong to skill level two. As a result, their exposure to western education over a long period may have helped

them comprehend the significance of seeking good health.[66] Healthcare-seeking behaviour involves the timing and types of healthcare services used and can have a significant impact on the health outcomes of the population. The risk of negative outcomes has been found to be higher when medical attention is ignored. For individuals with infectious diseases such as tuberculosis, delaying seeking care may increase the risk of transmission in the community.[67] About half of the participants in the study sought medical attention as soon as they noticed symptoms, which aligns with the outcomes of a previous cross-sectional study carried out in Penang Island, Malaysia. The latter study revealed that more than 50% of the subjects chose to see a doctor right away upon encountering any health problem.[68] On the other hand, this is different from the results of a study carried out in north-western Ethiopia, which was based on the community and conducted in a cross-sectional manner. In that study, only 25% of the mothers sought medical attention within 24 hours of the start of their illness.[69] This discrepancy in findings may be attributed to the significantly low prevalence of seeking help from places of worship, traditional healers, and other alternative healthcare providers. Additionally, the low utilization of nonconventional healthcare services may have contributed to the contrasting results. Among the study respondents, the prevalence of using herbal mixtures was also low. This may explain why they promptly sought healthcare from a healthcare centre.[70] Such delays can lead to the wastage of funds. It also limits the treatment options available for a disease.

Early healthcare seeking allows for diseases to be detected and treated in their early stages. Poor and delayed healthcare seeking has contributed to 70% of all deaths among children under the age of five worldwide.[71] Furthermore, the results of this study revealed that the majority of respondents seek healthcare services from patent medicine stores. The discovery aligns with the

outcomes of a study that observed a rural community in south-eastern Nigeria. The study revealed that most of the participants preferred to seek medical assistance from patent medicine stores as their initial source of healthcare. However, the results contrast with the findings of a community-based cross-sectional study conducted in India, which revealed that less than a third of the mothers patronized patent medicine stores.[72] This difference in findings may be due to the rapid proliferation of patent medicine stores in this part of the world, as well as the fact that it is a cheaper option compared to formal healthcare in this environment. Although patent medicine stores should not be the first point of call when seeking healthcare, their availability and affordability have led to the prevention of countless deaths worldwide.[73]

This study demonstrated that the respondents' religion, level of education, average household income, skill level, and socioeconomic factors strongly affect the health-seeking of mothers. The results are somewhat comparable to a study carried out in Zambia that focused on a community and found that only the level of education and marital status were significant factors linked to the health-seeking behaviour of mothers.[64] This result also partly agrees with the findings of another community-based study in India, where the age, educational status, religion, and socioeconomic status of the mothers were significantly associated with their treatment-seeking behaviour.[72] Religion may be a significant factor because of its strong influence on individuals in modern-day society. This study demonstrates that all respondents belong to a specific religion, and that their health-seeking is affected by their religious affiliation. This finding aligns with a study done in Oyo, Nigeria, which also found a correlation between people's religion and their health-seeking behaviour.[74] It makes sense to expect that social and economic status significantly affects health-seeking behaviour. An individual's social and economic status determines their purchasing power,

affordability of healthcare services, and access to other basic life needs. Not all individuals with a certain social status will behave in a manner that aligns with societal expectations due to other inherent factors. Engaging religious leaders, providing basic education to women, and offering moral support counselling to families have the potential to maximize health-seeking behaviours in rural communities.[64] Financial constraints, absence of life-threatening illness, the need to visit a healthcare facility, and distance to a healthcare facility were the most common reasons cited by mothers for not seeking formal healthcare.

The discovery is somewhat comparable to the outcomes of a survey carried out in India, which found that the primary reasons for not seeking medical assistance were the distance from healthcare facilities, disbelief in allopathy, financial limitations, and inadequate awareness of the seriousness of the illness or warning signs.[75] The similarity in findings may be because the most of the mothers possess at least a skill level two and fall under a household income of 30,000 to 150,000 naira, which accounts for the financial constraints cited by the majority of respondents. The majority of the respondents have a secondary level of education. This may explain why they fail to recognize serious clinical features of diseases that warrant formal healthcare. The distance from the health facility may be due to a preference for a private health facility outside of the community. This can result from peer pressure and the unwarranted stigma associated with using public facilities, which are often more affordable and accessible to the community. The majority of unfulfilled medical requirements in low- and middle-income nations are caused by the need for individuals to pay for healthcare services themselves and the distance they must travel to access medical facilities. These expenses have a greater impact on those living below the poverty line, resulting in increased impoverishment and disease burden.[76]

This study also revealed that the mothers' age was a strong predictor of their health beliefs. This is keeping with the results of a descriptive cross-sectional study done in Ethiopia, which demonstrated a significant correlation between the age of the participants and their health beliefs.[77]This is not surprising, as certain behaviours tend to be more prevalent among specific age groups. Age is an important predictor of health beliefs, and it is crucial for government officials, community leaders, and other stakeholders to understand what types of health beliefs are most beneficial or harmful. It was also found that the mother's skill level was the only significant predictor of her health-seeking behaviour. This contrasts the results of a cross-sectional research done in Bangladesh, where the significant predictors of health service utilization among respondents were the cost of treatment, duration of illness, and perception of illness severity.[78] This difference may be due to peculiarities associated with skill remuneration and the varying costs of healthcare in different regions. Low skills perpetuate poverty and inequality. Skills development can improve standards of living and increase access to quality healthcare. Helping people develop and update their skills makes economic sense.[79] Furthermore, respondents who had never been married were more likely to have harmful health beliefs compared to those who had been married at least once. This result aligns with a descriptive study carried out in Lagos, Nigeria, where it was found that individuals who had never been married have more tendency to carry out harmful practices.[80] The beneficial health beliefs that are likely to be associated with the ever-married respondents may be a result of spousal influence. A husband with a positive health belief can have an impact on his wife's health beliefs. The act of getting married can lead to mutual personal development and social connections, as well as an increase in financial stability and social resources. These benefits usually extend beyond just the couple and can positively impact other family members and the community as a whole.[81]

The health beliefs of mothers of under-5s have become more positive due to the viral pandemic. Most of the respondents believed that COVID-19 is very dangerous. A large number also believed that contracting COVID-19 can increase the risk of developing other illnesses, likely due to their knowledge of the virus's ability to suppress the immune system. This does not align with a study conducted in 2020 in India, where less than half of the respondents perceived COVID-19 to be severe.[82] Some of the respondents may have been affected by COVID-19 but did not show symptoms due to the mild nature of the virus in some patients. This is similar to findings among students in America and an online study conducted among college students in Korea, where 15.2% and 8.7% respectively reported having a COVID-19 diagnosis or experiencing perceived symptoms.[83,84] Most people believed that hand washing and wearing facemasks were effective in controlling and preventing the spread of infection. All of these beneficial health beliefs can be attributed to the respondents' adequate information about COVID-19 from various sources such as mass media, billboards, friends and family members, and health workers. This agrees with a survey carried out in 2020 in the Kerala state of India, where over half of the respondents received constant information about COVID-19 through various means.[82] Most mothers cited that they are likely to avoid the infections if they followed the recommendations from authorities, which included hand washing and the use of facemasks. Our study is also consistent with a study conducted in Korea in 2020, where 88.8% of the respondents wore masks to prevent contracting the COVID-19 virus.[84]

A large proportion of respondents' health-seeking was impacted by COVID-19. The good health-seeking behaviour of mothers of under-5s increased due to COVID-19 due to fear of losing their lives and their children’s lives from the virus. This contrasts an online study conducted in 2020,

which found that 50% of parents' health-seeking behaviour for their sick children was affected by COVID-19.[45] The result also does not align with a reasearch carried out in South West Ethiopia, where respondents reported that their health-seeking behaviour was impacted by COVID-19, as fear of contracting the virus was the primary reason for not seeking healthcare.[85] In some cases, respondents were unable to obtain medication for their sick child and resorted to self-medication for treatment. A study conducted in South West Ethiopia found that 39% of participants used self-medication as an alternative treatment, which is consistent with our findings. Our study shows that there is a correlation between misconceptions about COVID-19 and poor health-seeking behaviour. Many respondents expressed fear towards the virus and believed it to be highly dangerous, leading to a decrease in health-seeking behaviour among mothers of children under 5. However, a study conducted in Ghana in 2021 found that despite the pandemic, there was still a good level of health-seeking behaviour.[86]

CONCLUSION

About a quarter of respondents had harmful health beliefs. Majority of the respondents had good health seeking behaviour. Lack of funds, severity of the illness and the need for health care were the reasons mostly reported by the respondents for not seeking formal healthcare.

Religion, household size, level of education, average monthly income, skill level and socioeconomic status of respondents were statistically, significantly associated with their health seeking behaviour.

There was a statistically significant association between the household income and health beliefs of the respondents.

The health beliefs of majority of the respondents improved as a result of the COVID-19 pandemic. Despite the COVID-19 pandemic, majority of the respondents still exhibited good health seeking behaviour.

RECOMMENDATIONS

Although the findings of this study revealed that mothers of children under 5 generally hold positive health beliefs and exhibit good health-seeking behaviours, there is still room for improvement, particularly among respondents who scored poorly on the various objectives used in the study. The findings may have been greatly influenced by the type of settlement, educational status, and income levels of the respondents. Therefore, there are still unanswered questions about the levels of health beliefs and health-seeking behaviours in different environments. Therefore, it is crucial to provide relevant recommendations to the appropriate stakeholders to enhance the health beliefs and health-seeking behaviours of mothers with children under the age of five in the Oluku community.

To the State Government

1. Create educational programs, such as workshops and health talks, to continuously educate mothers who have children below the age of 5 in the Oluku community about the harmful consequences of health beliefs.

2. We should encourage mothers who have children below the age of 5 in Oluku community to continue practicing good health-seeking behaviour by improving the quality of the primary healthcare centre in the community.
3. Make primary healthcare services in Oluku more affordable to encourage more mothers to seek care, especially those in the middle and low socioeconomic status.
4. Continue to maintain the current level of awareness regarding the harmful impacts of COVID-19 on the well-being of mothers with children under the age of 5 in the Oluku community.

To the Community Leaders of Oluku community

1. Establish regular meetings with mothers of children under 5 to educate them on the negative consequences of harmful health beliefs.
2. Establish communication with the husbands of mothers with children under the age of 5 to improve and sustain the prevalence of good health-seeking behaviours among mothers.
3. Encourage mothers of children under 5 to continue practicing good hand hygiene to prevent the spread of COVID-19 and other diseases. This can be achieved by creating flyers that promote the importance of hand hygiene and provide practical tips for maintaining clean hands.
4. Invite health workers to the community on a regular basis to educate mothers under-5s about the benefits of handwashing.

To the mothers of under-5

1. Only take drugs that have been prescribed by a medical doctor.
2. Make a formal health centre your first point of contact when you are ill.

REFERENCES

1. Nigeria Centre for Disease Control (NCDC). Preliminary Stakeholder Engagement Plan (SEP) Nigeria COVID-19 Prepardness & Response Project (NCPRP). 2020;1–22.
2. Ohia C, Bakarey AS, Ahmad T. COVID-19 and Nigeria: putting the realities in context. International Journal of Infectious Diseases. 2020:95:279-81. Available from: https://doi.org/10.1016/j.ijid.2020.04.062 (Accessed May 1st, 2021).
3. Central Bank of Nigeria. Economic Report. 2020. Available from: www.cbn.gov.ng/Documents/monthlyecoreorts.asp (Accessed May 1st, 2021)
4. Loue S, Sajactovic M, editors. Encyclopedia of Immigrant Health. Springer Science and Business Media; 2011 Nov 25. https://doi.org/10.1007/978-1-4419-5659-0_332
5. Mackian S. A review of health seeking behaviour : problems and prospects. Health System Development Programme. 2003;27.
6. Latunji OO, Akinyemi OO. Factors influencing health-seeking behaviour among civil servants in Ibadan, Nigeria. Annals of Ibadan postgraduate medicine. 2018;16(1):52-60.

7. Bandura A. Social Foundations of Thoughts and Action: A social Cognitive Theory. Englewood Cliffs, NJ: Prentice-Hall, Inc; 1986.

8. Rosenstock IM. The Health Belief Model and preventive health behaviour. Health Educ Monogr. 1974;2(4):85-86

9. Janz NK, Becker MH. The Health Belief Model: A decade later. Health Educ Q. Spring. 1984;11(1):41-47.

10. Wilson AR, Brega AG, Thomas JF, Henderson WG, Lind KE, Braun PA, et al. Validity of measures assessing oral health beliefs of American Indian parents. Journal of racial and ethnic health disparities. 2018;5(6):1254-63.

11. Costa MF. Health belief model for coronavirus infection risk determinants. Rev Saude Publica. 2020;54:1–11. Available from: http://doi.org/10.11606/s1518 8787.2020054002494

12. Gera T, Shah D, Garner P, Richardson M, Sachdev HS. Integrated management of childhood illness (IMCI) strategy for children under five.ss 2016:6. Available from: DOI:10.1002/14651858.CD010123.pub2.

13. World Health Organization. Maintaining essential health services : operational guidance for the COVID-19 context. Interim guidance 2020:10-15.

14. ILO, FAO, IFAD and WHO. Impact of COVID-19 on people's livelihoods, their health and our food systems. Available from: https://www.who.int/news/item/13-10-2020-impact of COVID-19-on-people's-livelihoods-their-health-and-our-food-systems (accessed 4th July, 2021).

15. World Health Organization. WHO Coronavirus (COVID-19) Dashboard. 2021. Available from: https://covid19.who.int/ (accessed 4th July, 2021)

16. Anderson R. A behavioural theory of families' use of health services. Chicago: University of Chicago Center for Health Administration Studies. 1968

17. Andersen RM. Revisiting the behavioural model and access to medical care: does it matter?. Journal of Health and Social Behaviour. 1995; 1:1–10. PMID: 773Anders

18. Andersen RM. National health surveys and the behavioural model of health services use. Medical care. 2008 Jul 1; 46(7):647–53. https://doi.org/10.1097/MLR.0b013e31817a835dPMID: 18580382A

19. Kadushin G. Home health care utilization: a review of the research for social work. Health & social work.2004;29(3):219–44. https://doi.org/10.1093/hsw/29.3.219 PMID: 115453060

20. Jahangir E, Irazola V, Rubinstein A. Need, enabling, predisposing, and behavioural determinants of access to preventative care in Argentina: analysis of the national survey of risk factors. PLoS One. 2012;7(9):e45053. https://doi.org/10.1371/journal.pone.0045053 PMID: 2298461154p

21. Andersen RM, Davidson PL, Baumeister SE. Improving access to care in America. Changing the US health care system: key issues in health services policy and management. 3rd Edition. San Francisco: Jossey-Bass. 2007:3–31.

22. Babitsch B, Gohl D, Von Lengerke T. Re-revisiting Andersen's Behavioural Model of Health Services Use: a systematic review of studies from 1998–2011. GMS Psycho-

Social-Medicine. 2012;9. https://doi.org/10.3205/psm000089 PMID: 23133505

23. Andersen R, Newman JF. Societal and individual determinants of medical care utilization in the United States. The Milbank Memorial Fund Quarterly. Health and Society. 1973;95–124.

24. Saah FI, Amu H, Seidu AA, Bain LE. Health knowledge and care seeking behaviour in resource-limited settings amidst the COVID-19 pandemic: A qualitative study in Ghana. Plos one. 2021;16(5):e0250940.

25. Wilson AR, Mulvahill MJ, Tiwari T. The impact of maternal self-efficacy and oral health beliefs on early childhood caries in Latino children. Frontiers in Public Health. 2017;5:228.

26. Ertem G, Ergün S. Traditional practices and beliefs regarding nutrition of children in the 0-5 age group in western Turkey: A qualitative study. 2013;63(2):173-178

27. Ikechukwu HU, Ofonime NU, Kofoworola O, Asukwo DE. Influence of cultural and traditional beliefs on maternal and child health practices in rural and urban communities in Cross River State, Nigeria. Annals of Medical Research and Practice. 2020; 1(4):1.

28. Adegoke AA. Factors influencing health beliefs among people in South West, Nigeria. African Research Review. 2011;2(1):177-197.

29. Webair HH, Bin-Gouth AS. Factors affecting health seeking behaviour for common childhood illnesses in Yemen. Patient Prefer Adherence. 2013;7:1129. https://doi.org/10.2147/PPA.S51124

30. Mishra K, Mohapatra I, Kumar A. A study on the health seeking behaviour among caregivers of under-five children in an urban slum of Bhubaneswar, Odisha. Journal of family medicine and primary care. 2019;8(2):498.

31. Simieneh MM, Mengistu MY, Gelagay AA, Gebeyehu MT. Mothers' health care seeking behaviour and associated factors for common childhood illnesses, Northwest Ethiopia: community based cross-sectional study. BMC health services research. 2019;19(1):1-7.

32. Weldesamuel GT, Alemayoh TT, Atalay HT, Zemichael TM. Modern health-seeking behaviour and associated factors among mothers having under 5-years old children in Shire town, Tigray, Ethiopia: A cross-sectional study 2018. African journal of primary health care & family medicine. 2019;11(1):1-6.

33. Adika VO, Baralate S, Agada JJ, Nneoma N. Mothers perceived cause and health seeking behaviour of childhood measles in Bayelsa, Nigeria. Journal of Research in Nursing and Midwifery. 2013;2(1):6-12.

34. Poorolajal J, Cheraghi P, Hazavehei SM, Rezapur-Shahkolai F. Factors associated with mothers' beliefs and practices concerning injury prevention in under five-year children, based on health belief model. J Res Health Sci. 2012;13(1):63-8. PMID: 23772008.

35. Shahkolai FR, Bandehelahi K, Shahanjarini AK, Farhadian M. The factors related to mother's beliefs and behaviours concerning the prevention of poisoning among children under the age of five, using the Health Belief Model. Turk J Pediatr. 2019; 61(5):749-756. doi: 10.24953/turkjped.2019.05.014. PMID: 32105007.

36. Chandwani, H. & Pandor, J. Healthcare-Seeking Behaviours of Mothers regarding their Children in a Tribal Community of Gujarat, India. Electronic physician 2015;7: 991-992. https://doi = 10.14661/2015.990-997

37. Karki M, Mathew L, Jayasree S, Mahara G. A study to assess the knowledge, and practice on health seeking behaviour of mothers during child illness in rural areas of Bangalore, India. Int J Heal Sci Res. 2019; 9:143. Available from: https://www.researchgate.net/publication/331588463_A_Study_to_Assess_the_knowledge_and_practice_on_Health_Seeking_Behaviour_of_Mothers_during_child_Illness_in_Rural_Areas_of_Bangalore_India

38. Khalil MM, Malik EM, Alnair NM, Abu II. Factors Affecting Health Seeking Behaviours among Mothers of Under Five Children Attending Primary Health Care Centres, Sudan. Science. 2019;7(6):181-6. Available from: doi: 10.11648/j.sjph.20190706.11

39. Adedokun, S.T., Yaya, S. Factors influencing mothers' health care seeking behaviour for their children: evidence from 31 countries in sub-Saharan Africa. BMC Health Serv Res aza20, 842. 2020;https://doi.org/10.1186/s12913-020-05683-8

40. Ajibade B, Amoo PO, Adeleke MA, Oyadiran G, Kolade O, Olagunju R. Determinants of mothers health seeking behaviour for their children in a Nigerian teaching hospital. IOSR J Nurs Health Sci. 2013; 1(6):09-16. Available from: https;//www.researchgate.net/publication/304704522_Determinants_of_mothers_health_seeking_behaviour_for_their_children_in_a_nigerian_teaching_hospital.

41. Ehsan SM, Jahan F. Analysing the impact of COVID-19 on the mothers of Bangladesh: hearing the unheard. Journal of Public Health. 2021:1-4. Available from: doi: 10.1007/s10389-021-01501-5

42. Adam VY, Abhulimhen-Iyoha BI. Teething: Beliefs and behaviours of mothers attending well baby clinics in Benin City, Nigeria. Afr J Med Health Sci 2015;14:8-12. Available from: doi:10.4103/2384-5589.153377

43. Arshad AR, Bashir I, Tariq A, Ijaz F, Aftab RK, Farooq O. A Population Based Study on the Healthcare Seeking Behaviour During the COVID-19 Outbreak. Discoveries Reports. 2020; 3:e14. Available from: doi:10.15190/drep.2020.8

44. Aklilu TM, Abebe W, Worku A, Tadele H, Haile T, Shimelis D, Mekonen D, Amogne W, Moges A, Habtamu A, Argaw R. The Impact of COVID-19 on Care Seeking Behaviour of Patients at Tertiary Care Follow-up Clinics: A Cross-Sectional Telephone Survey. Addis Ababa, Ethiopia. medRxiv. 2020. Available from: doi:10.1101/2020.11.25.20236224

45. Briggs DC, Kattey KA. COVID-19: Parents' Healthcare-Seeking Behaviour for their Sick Children in Nigeria-An Online Survey. International Journal of Tropical Disease & Health. 2020:14-25. Available from https://www.journalijtdh.com/index.php/IJTDH/article/view/30344 (Accessed September 2021)

46. Arisukwu O, Olaoye LE, Igbolekwu C, Rasak B. Implications of COVID-19 on Healthcare Seeking Behaviour of the Rural-Poor in Ido-Ekiti and Environs. Nigeria.

2020:8-9. Available at:https//doi.org/10.21203/rs.3.rs-658640/v1. (Accessed on 27th July, 2021).

47. City population - statistics, maps and chart. 2020. Available from: https://www.citypopulation.de/php/nigeria (Accessed February, 2022).

48. Adam VY, Okafor KC. Sexual practices and outcomes of young people in an urban settlement in Benin City, Nigeria. Social Medicine. 2021 Feb 1;13(3):146-154. Available from: https//www.medicinasocial.info/index.php/socialmedicine/article/view/933 (Accessed February, 2022)

49. Adam VY, Erhus, E. One-year prevalence of domestic violence against women during the COVID-19 pandemic in an urban community in southern Nigeria. Journal of community Medicine and Primary Health Care. 2022 Mar 15;34(1):117-30. Available from https://dx.doi.org/10.4314/jcmphc.v34i1.8

50. Cochran W. Sampling Techniques. 3rd ed. New York: Wiley; 1977.

51. Baghernezhad Hesary F,Salehiniya H, Miri M, Moodi M. Ivestigating Preventive Behaviours Toward COVID-19 Among Iranian People. Frontiers in Public Health. 2021. Available from: doi:10.3389/fpubh.2021.590105

52. International Labour Organisation. International Standard Classification of Occupations. Structure, group definitions and correspondence tables. 2012;1:12-13

53. Ibadin MO, Akpede GO. A revised scoring scheme for the classification of socio-economic status in Nigeria. *Nigerian Journal of Paediatrics*. 2021;48(1):26–33. Available from: doi: 10.4314/njp.v48i1.5

54. Chukwuonye II, Chuku A, Okpechi IG, Onyeonoro UU, Madukwe OO, Okafor GOC, et al. Socioeconomic status and obesity in Abia State, South East Nigeria. *Diabetes, Metabolic Syndrome and Obesity: Targets and Therapy*. 2013;6:371–8. Available from: doi: 10.2147/DMSO.S44426

55. WageIndicator Foundation. Minimum Wage – Nigeria [Internet]. 2021. Available from: https://wageindicator.org/salary/minimum-wage/nigeria [Accessed 2022 February]

56. Abebe H, Beyene GA, Mulat BS. Harmful cultural practices during perinatal period and associated factors among women of childbearing age in southern Ethiopia: community based cross-sectional study. PLoS One. 2021 Jul 2;16(7):e0254095.

57. Raghupathi V, Raghupathi W. The influence of education on health: an empirical assessment of OECD countries for the period 1995–2015. Archives of Public Health. 2020 Dec;78(1)s NEW

58. Ugwueje EA. Cultural Environment, Health Seeking Behaviour and Survival Chances of Under Five Children in South East Nigeria. International Journal of Development and Management Review. 2012;7(1).

59. Pool R. Dialogue and the interpretation of illness: Conversations in a Cameroon village. Routledge; 2020 Aug 19.NEW

60. O'Neill S, Gryseels C, Dierickx S, Mwesigwa J, Okebe J, d'Alessandro U, Grietens KP. Foul wind, spirits and witchcraft: illness conceptions and health-seeking behaviour for malaria in the Gambia. Malaria journal. 2015 Dec;14(1):1-0.NEW

61. Almutairi WM, Alsharif F, Khamis F, Sallam LA, Sharif L, Alsufyani A, Alshulah FN, Alqasimi R. Assessment of mothers' knowledge, attitudes, and practices regarding childhood vaccination during the first five years of life in Saudi Arabia. Nursing Reports. 2021

62. Ali AH, Abdullah MA, Saad FM, Mohamed HA. Immunisation of children under 5 years: mothers' knowledge, attitude and practice in Alseir locality, Northern State, Sudan. Sudanese journal of paediatrics. 2020;20(2):152.

63. World Health Organisation.Vaccines and immunization. Health talk. 2023. Available at: https://www.who.int/health-topics/vaccines-and-immunization#tab=tab_1. Accessed 6th may, 2023.

64. Apuleni G, Jacobs C, Musonda P. Predictors of health seeking behaviours for common childhood illnesses in poor resource settings in Zambia, a community cross sectional study. Frontiers in Public Health. 2021:519.

65. Ogunlesi TA, Olanrewaju DM. Socio-demographic factors and appropriate health care-seeking behaviour for childhood illnesses. Journal of tropical pediatrics. 2010 Dec 1;56(6):379-85

66. Latunji OO, Akinyemi OO. Factors influencing health-seeking behaviour among civil servants in Ibadan, Nigeria. Annals of Ibadan postgraduate medicine. 2018 Jul 17;16(1):52-60.

67. Poortaghi S, Raiesifar A, Bozorgzad P, Golzari SE, Parvizy S, Rafii F. Evolutionary concept analysis of health seeking behaviour in nursing: a systematic review. BMC Health Serv Res. 2015;15:523.

68. Dawood OT, Hassali MA, Saleem F, Ibrahim IR, Abdulameer AH, Jasim HH. Assessment of health seeking behaviour and self-medication among general public in the state of Penang, Malaysia. Pharmacy Practice (Granada). 2017 Sep;15(3).

69. Simieneh MM, Mengistu MY, Gelagay AA, Gebeyehu MT. Mothers' health care seeking behaviour and associated factors for common childhood illnesses, Northwest Ethiopia: community based cross-sectional study. BMC health services research. 2019 Dec;19(1):1-7.

70. Bantie GM, Meseret Z, Bedimo M, Bitew A. The prevalence and root causes of delay in seeking healthcare among mothers of under five children with pneumonia in hospitals of Bahir Dar city, North West Ethiopia. BMC pediatrics. 2019 Dec;19:1-0.

71. Tiwari G, Thakur AK, Pokhrel S, Tiwari G, Pahari DP. Health care seeking behaviour for common childhood illnesses in Birendranagar municipality, Surkhet, Nepal: 2018. Plos one. 2022 Mar 30;17(3):e0264676.

72. Mishra K, Mohapatra I, Kumar A. A study on the health seeking behaviour among caregivers of under-five children in an urban slum of Bhubaneswar, Odisha. Journal of Family Medicine and Primary Care. 2019 Feb;8(2):498.

73. Uneke CJ, Obeka I, Uneke BI, Umeokonkwo A, Nweze CA, Otubo KI, Uguru OE. An assessment of nursing mothers' and young people's access to proprietary and patent medicine vendors' services in rural communities of south-eastern Nigeria: implication for review of national drug policy. Journal of Pharmaceutical Policy and Practice. 2021 Nov;14(1):1-4.

74. Adaramaja SR, Tijani OM. Demographic Factors as Correlates of Health–Seeking Behaviour of the People of Oyo State, Nigeria. Ghana Journal of Development Studies. 2014;11(2):100-10.

75. Gundluru M, Gopal H. Knowledge, attitude and practice among mothers regarding common childhood illness. India. 2019

76. Fazal F, Saleem T, Rehman ME, Haider T, Khalid AR, Tanveer U, Mustafa H, Tanveer J, Noor A. The rising cost of healthcare and its contribution to the worsening disease burden in developing countries. Annals of Medicine and Surgery. 2022 Oct;82.

77. Merga BT, Fekadu G, Raru TB, Ayana GM, Hassen FA, Bekana M, Negash B, Eshetu B, Birhanu A, Mulatu G, Balis B. Determinants of potentially harmful traditional cord care practices among mothers in Ethiopia. Frontiers in Pediatrics. 2022;10.

78. Akter S. Factors influencing health service utilization among mothers for under-five children: A cross-sectional study in Khulna district of Bangladesh. Plos one. 2022 Sep 12;17(9):e0274449.

79. World Bank. Skills development. understanding poverty. 2023. Access 26th May, 2023. Available at https://www.worldbank.org/en/topic/skillsdevelopment

80. Ikeaba NC, Balogun MR, Olubodun T, Okafor I. Harmful traditional practices among market women in ojuwoye market mushin, South West, Nigeria. Annals of African Medicine. 2022 Jul 1;21(3):208.

81. Shmerling, R.H.; The health advantages of marriage; Harvard Health Publishing (2016)

82. Jose R, Narendran M, Bindu A, Beevi N, Manju L, Benny PV. Public perception and preparedness for the pandemic COVID 19: a health belief model approach. Clinical epidemiology and global health. 2021 Jan 1;9:41-6.

83. Trammell, PhD JP, Joseph, PhD NT, Harriger, PhD JA. Racial and ethnic minority disparities in COVID-19 related health, health beliefs and behaviours, and well-being among students. Journal of American College Health. 2023 Jan 2;71(1):242-8.

84. Kim S, Kim S. Analysis of the impact of health beliefs and resource factors on preventive behaviours against the COVID-19 pandemic. International journal of environmental research and public health. 2020 Nov;17(22):8666.

85. Awel S, Ahmed I, Tilahun D, Tegenu K. Impact of COVID-19 on health seeking behaviour of patients with chronic disease at public hospitals in Jimma Zone, South West Ethiopia. Risk Management and Healthcare Policy. 2022 Dec 31:1491-500.

86. Saah Fl, Amu H, Sendu AA, Bain L.E. Health knowledge and care seeking behaviour in resource-limited settings amidst the COVID-19 pandemic: A qualitative study in Ghana. PLoS One. 2021 May 5;16(5):e0250940

INFORMED CONSENT FORM

TITLE OF STUDY: Assessment of the Effect of COVID-19 on the Health Beliefs and Seeking Behaviour Of Mothers Of Under-5 In Oluku Community, Benin City, Edo State, Nigeria.

INSTITUITON: University of Benin.

PRINCIPAL INVESTIGATOR: Oriakhi Kelvin Odion

Oshodin Osasu Wisdom

SUPERVISOR: Prof. V. Y. Adam (MBBS, MPH, FMCPH, FWACP)

SPONSORSHIP: This study will be researcher-sponsored.

PURPOSE OF THE RESEARCH: The main purpose of this study will be to assess the health beliefs, health seeking behaviours and the effect of COVID-19 on the health beliefs and health

seeking behaviour of mothers of under 5 in Oluku community of Benin City. The results that will be obtained from this survey will help in proffering recommendations that will help reduce harmful health beliefs, encourage beneficial health beliefs and improve the health seeking behaviours of mothers of under 5 .

PROCEDURES INVOLVED IN THE STUDY: You will be asked some questions aimed at assessing the effect of COVID-19 on your health beliefs and seeking behaviours.

COMPENSATION: There shall be no financial compensation for participants in this study.

VOLUNTARY PARTICIPATION: Participation in this study is entirely voluntary and you are free to withdraw from it whenever you wish.

RISKS: There are no risks associated with your participation in this study.

BENEFITS: You can make suggestions on how to improve the health seeking behaviours and the beneficial health beliefs of mothers of under 5years.

CONFIDENTIALITY: All information obtained in the course of the survey will be treated confidentially. The name of the participant will not be written on the questionnaire. All information obtained from the questionnaire will be coded in a file in the personal computer of the principal investigator and pass worded.

CONTACT INFORMATION:

Oriakhi Kelvin Odion

Department of Community Health,

University of Benin Teaching Hospital,

OR

Oshodin Osasu Wisdom

Department of Community Health,

University of Benin Teaching Hospital,

Benin City. Nigeria.

Phone number: +234 8106388948

E-mail: oshodin.osasu@gmail.com

Benin City. Nigeria.

Phone number: +234 8103641149

E-mail: Oriakhi97@gmail.com

OR

Ethics and Research Committee

Ministry of Health, Edo State

Phone Number: +234 803 242 9017

2nd and 3rd Floor Block D, High Court Road, Benin City.

CERTIFICATE OF CONSENT

I have read the above information (or it has been read to me), and I have had the opportunity to ask questions about it and any questions that I have asked have been answered to my satisfaction. I hereby consent voluntarily to take part as a participant in this survey.

_____ _____

Signature of Interviewer **Signature of respondent**

DEPARTMENT OF COMMUNITY HEALTH, UNIVERSITY OF BENIN, BENIN CITY

ASSESSMENT OF THE EFFECT OF COVID-19 ON THE HEALTH BELIEFS AND SEEKING BEHAVIOUR OF MOTHERS OF UNDER-5S IN OLUKU COMMUNITY

Dear respondent. We are 600 level students of the Department of Community Medicine, University of Benin, Benin City. We are currently carrying out a study to assess the effect of COVID-19 on the health beliefs and seeking behaviour of the mothers of under-5s in Oluku community. Please answer the following questions as the information provided which be treated with confidentiality and not used for any purpose outside this research. Please kindly respond as appropriate and fill in necessary details where applicable. Thank you for your expected cooperation.

SECTION A: SOCIO-DEMOGRAPHIC CHARACTERISTICS

1. Age in years (as at last birthday): _____
2. Religion: Christian ( ) Islam ( ) African traditional religion ( ) Others

   specify ……..
3. Occupation: _____ Partner's occupation if any_____

4. Place of work: _____
5. Ethnic group: _____
6. Marital status: Single ( ) Married ( ) Widowed ( ) Divorced ( ) Separated ( ) Cohabiting ( )
7. Marriage type: Monogamous ( ) Polygamous ( ) Others ( ) (specify)_____
8. Highest level of education attained: No formal education ( ) Primary ( ) Secondary ( ) Tertiary ( ) Others(specify)…….
9. Family type: Nuclear ( ) Extended ( )
10. Household size:_____
11. Number of children under 5 years: …….
12. Household monthly income: ……
13. Sex of the children under 5 years: Male ( ) Female ( )
14. Total number of children under your care: ……
15. Primary breadwinner of the home: Husband ( ) Wife ( ) Others(specify)……

SECTION B: ASSESSMENT OF HEALTH BELIEFS AND HEALTH SEEKING BEHAVIOURS OF MOTHERS OF UNDER-5S

16. Was any of your under-5 child sick in the last 1 year? Yes ( ) No( )

    If NO, go to question 3.
17. How would you describe the illness? Mild ( ) Moderate ( ) Severe( )
18. What could lead to illness?

    Please tick all that applies

*Carelessness ( )

*Dysfunction or impairment of body system ( )

*Natural occurrence of illness without any external force ( )

*Inherited ( )

*Evil spirits ( )

*Attack by witches, sorcerers and evil doer ( )

*God's punishment for sins committed ( )

* Bad luck ( )

19.Do you seek help when any member of your household is sick? Yes ( ) No ( )

20. If yes, where do you go to when you are sick? Hospital ( ), Chemist ( ), Traditional healers ( ) Place of worship ( ), Others specify……..

21. If no, why? ……

22. Do you take any medications when you are ill? Yes ( ) No ( )

23. When do you seek health care? Immediately symptoms begin ( ), When symptoms are mild ( ), When symptoms are severe ( ), When the self-treatment fails ( ), When symptoms do not resolve over a long time ( )

24. If yes, what do you take? Drugs prescribed by a doctor ( ), Drugs gotten at a chemist ( ), Herbal mixtures ( ), Others specify……..

25. If no, why? ……..

26. What other methods of treatment do you employ? .....

27. Who takes the decision about when and where to seek health care in the household? Father ( ) Mother ( ) others specify…….

28. Have you heard about Immunization? Yes ( ) No( )

29. If yes, do you think Immunization is important? Yes ( ) No( )

30. Have your children been immunized Yes ( ) No( )

31. If no why? .....

32. When did you start immunizing your children? At birth ( ) 6months ( ) 1year ( ) Others specify……..

33. Do they have immunization cards? Yes ( ) No ( )

SECTION C: ASSESSMENT OF FACTORS AFFECTING HEALTH BELIEFS AND HEALTH SEEKING BEHAVIOURS OF MOTHERS OF UNDER 5S

34. Do you seek formal healthcare services when you are sick? Yes ( ) No ( )

35. Do you seek formal healthcare services when members of your household are sick?

Yes ( ) No ( ) If yes, skip to Section D

If no, what factors have prevented you from seeking healthcare from formal healthcare facilities? Please tick as appropriate.

S/N		Agree	Undecided	Disagree
36	The health facility is too far from my place of residence			
37	I do not have money to go to the health facility			
38	There are no health workers in the health facility			
39	The attitude of the health workers are bad			
40	The waiting time at the health facility before receiving medical attention is long			
41	I do not see the need visiting a health facility if the sickness because the illness is not life-threatening			
42	My religion does not support seeking formal healthcare services			

43	I use herbal medications and do not see the need to visit the health care facility			
44	I do not trust the services provided at health facilities as someone I know has died at a health facility			

SECTION D: ASSESSMENT OF THE EFFECT OF COVID-19 ON THE HEALTH BELIEFS AND HEALTH SEEKING BEHAVIOURS OF MOTHERS OF UNDER-5S

45. COVID-19 is very dangerous? Yes ( ) No ( ) I don't know ( )

46. I am afraid of COVID-19? Yes ( ) No ( ) I don't know ( )

47. I may have been affected by COVID-19 but did not show any symptom? Yes ( ) No ( ) I don't know ( )

48. Having COVID-19 can predispose me to other kind of illness? Yes ( ) No ( ) I don't know ( )

49. I do not believe in hand washing and wearing of facemasks in controlling and preventing the spread of the infection? Yes ( ) No ( ) I don't know ( )

50. COVID-19 is a disease for the poor? Yes ( ) No ( ) I don't know ( )

51. Anyone with cough and catarrh has COVID-19? Yes ( ) No ( ) I don't know ( )

52. The use of herbal medication is effective against COVID-19 and other diseases? Yes ( )

No ( ) I don't know ( )

53 If a disease spread worlwide, it is dangerous? Yes ( ) No ( ) I don't know ( )

54. If a disease does not spread worldwide, it is not dangerous? Yes( ) No ( ) I don't know ( )

55. I am worried my child or myself may contract the virus in the health facility? Yes ( ) No ( )

56. I could not get my sick child drugs beacuse of the lockdown? Yes ( ) No ( )

57. Drugs were not available at the health facility even though I was able to get there?

Yes ( ) No ( )

58. My sick child was unable to see a doctor at the health facility? Yes ( ) No ( )

59.I could not go because the roads were blocked? Yes ( ) No ( ) 60.

My sick child was not admitted into the health facility for suspicion of COVID-19 related symptoms? Yes ( ) No ( )