# FACTORS INFLUENCING UTILIZATION OF HEALTHCARE SERVICES DURING COVID-19 PANDEMIC AMONG PREGNANT WOMEN AND CAREGIVERS WITH CHILDREN UNDER TWO YEARS IN RONGO SUB-COUNTY, MIGORI COUNTY, KENYA

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**A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIRMENTS FOR THE CONFERMENT OF A MASTER OF SCIENCE DEGREE IN HEALTH SYSTEMS MANAGEMENT AT KENYA METHODIST UNIVERSITY**

**SEPTEMBER 2021**

## DECLARATION

This thesis is my original work and has not been presented for a degree or any other award in any other University.

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## DEDICATION

I am dedicating this thesis to my family and employer Lwala Community Alliance, for the support they have given me through my studies. And above all to God who has brought me this far.

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I wish to express my gratitude to the following people who contributed to this process: My supervisors from Kenya Methodist University Dr. Wanja Tenambergen, and Mr. Musa Oluoch for their guidance in this study process; Mr. John Odira Rongo Sub-County Hospital Data manager, for providing me with information on the status of utilization of health services in Migori County; Ombaka Brian for his support and guidance in analysis of the research data. The CHWs and respondents who made it possible to collect the data by agreeing to be part of this study.

## ABSTRACT

Health systems have failed in past epidemics to maintain routine essential services in health. People, resources, and essential supplies all diverted to address health emergency, sometimes resulting in lack of important basic and routine health services. Pregnant women are at an increased risk for severe illness, preterm birth and other adverse pregnancy outcomes from COVID-19 compared to non-pregnant women. During emergency cases, disintegration of health care services can have a profound effect as hospitals become strained or non-functional. Thus an outbreak of infectious disease can catalyze further health problems in a community as populations lose confidence in the available health facilities and significantly reduce usage of the healthcare system. The purpose of this study was to determine factors that influenced utilization of healthcare services among pregnant women and caregivers with children below two years during COVID-19 pandemic. This was a retrospective cross-sectional study with mixed data collection methods, where respondents were asked questions on how COVID-19 affected them with regard to utilization of MCH healthcare during the first peak of the COVID-19 in Kenya. Two high volume facilities were selected purposively based on volume and capacity of services offered. A random sample was drawn from the stratum using a list generated by Community Health Workers attached to the health facilities.Key informant interviews were used to collect data among health care providers and structured questionnaire was used for pregnant women and caregivers. Chi-square test was used to test for significance at p-value 0.05. Independent variables; social distancing, social stigma, communication and human mobility restriction were associated with health care service utilization and significant at 0.05 p-value. Correlation analysis indicated Social stigma (-.407, p<.512), social distancing (-.324, p<.001) and human mobility restrictions (-.606, p<.001) negatively influenced service utilization. Whereas COVID-19 related communication (.631, p<0.001) was protective and thus promoted service utilization. The hierarchical linear regression model explained 67.73% of the total variations in the health care service utilization, which is r = 0.6773. The study recommends that Migori County Department of Health should i) to develop risk communication plan to sensitize the community against stigma ii) use main media channels and develop measures against fake news, iii) Strengthening targeted community outreaches for pregnant women and caregivers with children under two years iv) develop referral networks and transportation mechanisms to improve facility-community connections during lockdown and past curfew hours.

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## LIST OF ABBREVIATIONS

| | |
|---|---|
| AIDS: | Acquired Immunodeficiency Syndrome |
| ARD: | Acute respiratory distress syndrome |
| EVD: | Ebola Virus Diseases |
| HIV: | Human Immunodeficiency Virus |
| LMIC | Low- and Middle-Income Countries |
| MCH: | Maternal and Child Health |
| MERS-CoV: | Middle East respiratory syndrome coronavirus |
| MoH: | Ministry of Health |
| RNA: | Ribonucleic Acid |
| RMNCH: | Reproductive, Maternal, Neonatal, and Child Health |
| SARS-CoV; | Severe acute respiratory coronavirus syndrome |
| UN: | United Nations |
| WHO: | World Health Organization |

# CHAPTER ONE

# INTRODUCTION

## 1.1 Background of the Study

In December 2019 a rapidly communicable diseases erupted in the Chinese city of Wuhan. The virus causing the disease also known as Severe Acute Coronavirus Respiratory Syndrome (SARS-CoV-2) belongs to the larger family of coronaviruses family. The extremely contagious virus has spread outside of China and has since become a global public health emergency (Shigemura et al., 2020). In extreme cases, the virus causes fatal pneumonia close to that caused by Middle East respiratory Syndrome Coronavirus (MERS-CoV) and Severe Acute Respiratory Syndrome Corona-Virus (SARS-CoV), which has evolved in scattered countries around the world over the past 20 years (Li. Y et al., 2020). Coronaviruses have become the common infection of growing respiratory infectious diseases.

Owing to its high transmit-ability coupled with morbidity and mortality, global fears about the virus have intensified (Huang et al., 2020). Elderly and comorbid patients are at higher risk and more likely to experience severe symptoms that may be associated with acute respiratory syndrome (ARDS) (Luo et al., 2020). Different treatment regimens are still being explored and various countries have approved different vaccines for SARS-CoV-2. The primary strategy for successful infection prevention includes; social isolation, restrictions on human activity, hand washing and mask wearing to reduce the transmission of COVID-19 at community and health facilities (Li. J et al., 2020). Currently, there are 166,860,081 million confirmed cases worldwide, and 3,459,996 million deaths (World Health Organization [WHO], 2021). The manufacturing of vaccines has been completed but there are fears of side effects and

most people are not willing to be vaccinated because of myths and misconceptions. Furthermore, the vaccines are not readily available in low income countries. Such strategies are primarily driven by public information, perceptions and behaviors (Abdelhafiz et al., 2020). Since March 2020 a cumulative total of 168,543 confirmed cases have been registered in Kenya with 307 deaths with case fatality rate of 1.8 per cent (Ministry of Health [MOH], 2021).

There is a close correlation between functioning of the health systems and preparedness for pandemics. In most nations, the context of the health system affects how the nation undergoes pandemic preparedness. In functional health care systems, resilience to pandemic is incorporated into existing mechanisms, especially in the country's emergency response guideline (Hanvoravongchai et al., 2020). Countries with weak health systems such as Kenya need to establish vertical programs for pandemic preparedness and response management and coordination. Devolved health systems are facing a greater challenge as the degree of engagement influences the degree of pandemic preparedness spending in that area. In addition, strategic spending in drug stockpiling, and equipment depends on supplementary budget availability. Countries with low financial resources are often excessively reliant on international support for pandemic preparedness activities (Ortu et al., 2008).

There are major changes in how health systems function due to COVID-19. The pandemic response impacts all child Health, neonatal, maternal and reproductive programs and their use. Health staff, supplies, and services are reassigned during the pandemic to tackle the surge of COVID- 19-patients (Gilbert et al., 2020). Realignment of the healthcare delivery system may contribute in closing of local hospitals, as

experienced in during the outbreak of Ebola in 2014 Ebola (Brolin et al., 2016). Infection and burnout from nosocomial COVID-19 has also reduced the health workforce (Li. Y et al., 2020). Child Health Services, Maternal, Nutrition and reproductive delivered by programs such as vaccines, bed nets or vitamin A are either stopped or decreased in scope (WHO, 2020). COVID-19 affected the global supply chain for medical and pharmaceutical applications. The low purchasing power of the Low- and Middle-Income (LMICs) and their lack of domestic manufacturing infrastructure are disadvantageous for maintaining a stable supply chain. The global management and purchase processes for critical RMNCH drugs may alleviate shortages; although, those networks may be affected by interference in global transport. Local COVID-19 surveillance attempts are also likely to have a detrimental effect on the domestic basic healthcare supply chains (Roberton et al., 2020).

During emergency situations, disintegration of health care systems can have a profound effect as clinics become overloaded or non-functional (Xing et al., 2014). Therefore, an outbreak of infectious disease will catalyze more health issues in a community as people lose trust in the available health care institutions and decrease the efficiency of the health care system (Xing et al., 2014; Morse et al., 2016). In the onset of Ebola Virus Disease (EVD) outbreak, in particular, there was a perceived gap in maternal health care facilities as health workers followed EVD's "no touch" strategy, personal protection equipment was also scarce (Zacharia et al., 2015) pervasive community perceptions of increased risk of contracting EVD in health care facilities (Dynes et al., 2015) and general loss of confidence in government services (Delamou et al., 2017). In addition, health care personnel, who feared being diagnosed with EVD while operating, deserted health facilities, which in many cases had already been under- staffed

(Delamou et al., 2017). Hence, it is also important to research the indirect health effects of the collapse of the health system, which should be studied at population level and during the recovery process.

The mitigation measures for transmission of SARS-COV-2 may consequently put vulnerable people seeking healthcare services at increased risk. Examination of the 2014-2015 Ebola epidemic reveals that deaths from HIV / AIDS, tuberculosis, malaria, and measles attributable to health system failures exceeded the fatalities from Ebola (Elston et al., 2017; Parpia et al., 2016). Different groups such as pregnant women, infants, disabled people, people with chronic diseases and elderly people experience heightened disruption of care due to COVID-19 resulting to substantial mortality and morbidity in the country. In addition, it is noted that COVID-19 symptoms are more severe in the elderly as well as in persons with comorbidities, especially non-communicable disease like high blood pressure, cancer, cardiac disease, diabetes or lung disease). Consequently, this means that continuation of health care services is required particularly for vulnerable groups such as those with some underlying non-communicable conditions (diabetes, hypertension and cancer) or exposure to major risk factors such as HIV / AIDS (MOH, 2021).

Particularly in terms of monitoring, testing capabilities and assessment, and financing in pandemic preparedness activities has contributed to the development of components of the health system globally. These health system roles may be useful for other diseases which go beyond pandemic response. Across the world, countries have a range of health service funding models as well as mechanisms of staffing health care systems. Unfortunately, a pandemic, such as COVID-19, can disrupt and disable health care

systems that are fragile (Roberton et al., 2020). The impact of COVID-19 in different settings has been dependent on the characteristics of health systems and strategies implemented to halt the virus. This research focused on health service delivery pillar by determine factors influencing healthcare service delivery during COVID-19.

### 1.2 Statement of the Problem

Health systems have failed in past epidemics to maintain routine essential services in health (Wilhelm et al., 2019). As reported by the WHO, "People, resources, and essential supplies all diverted to address health emergency, sometimes resulting in lack of important basic and routine health services. Pregnant women are at an increased risk for severe illness, preterm birth and other adverse pregnancy outcomes from COVID-19 compared to non-pregnant women. Because of their vulnerability the influencers of the infection among the pregnant women is critical and must be understood and addressed. According to a global analysis of 77 cohort studies released in September 2020, pregnant women with a COVID-19 diagnosis had a 1.6 times higher chance of being hospitalized to the intensive-care unit (ICU) than non-pregnant women of reproductive age (Allotey et al., 2020).

In Migori County, 1354 people have tested positive to COVID-19 for the last one year, of this 32% are child bearing age women, with case fatality rate CFR of 3.8%. In the study area, Rongo Sub County, 248 individuals have tested positive to the disease with positivity rate of 13.5 %. (MOH, 2021). Even though COVID-19 fatality rates seem lower in women of reproductive age and infants, interruptions in regularly scheduled health services may adversely affect such groups, particularly in LMIC countries (Roberton et al., 2020). In Migori County, the number of women seeking ANC services

is steadily decreased from 63% in 2019 to 55% in the year 2020. Utilization for FP services also dropped from 58.2% to 52.7 % in the same period, due to COVID-19 Pandemic in Migori County (MOH, 2021). The drop has also been observed in access for family planning services, owing in part to supply chain instability causing stock-outs. The overall utilization of health services in Rongo sub-county hospital also decreased dramatically in April and May 2020; when more stringent preventive steps were taken (MOH, 2021) relative to the same period in 2019. For example; a comparison of the total work load in the years 2018, 2019 and 2020 from January to May shows a decrease in service utilization as seen in Table 1.1.

**Table 1.1:**

***Overall Utilization of Ambulatory Healthcare Services in Rongo Sub-County Hospital***

| **Year** | **Number of Patients by Months** | | | | |
|---|---|---|---|---|---|
| | January | February | March | April | May |
| 2018 | 142 | 137 | 125 | 138 | 173 |
| 2019 | 110 | 132 | 131 | 117 | 143 |
| 2020 | 127 | 143 | 172 | 106 | 88 |

Source: Migori-County DHIS June, 2020 Report

While efforts in Kenya have been effective so far, and have slowed down the community's rateof SARS-COV-2 transmission, unfortunately they have come up with a different set of challenges. Which include: suspension of elective surgery, a decline in outpatient visits to most health facilities, incidents of maternal and infant deaths due to curfew, cases of health care staff who are afraid to serve patients accused of COVID-19, disruption of routine health services such as immunization and antenatal clinics, disruption of routine management services for persons with lifestyle diseases such as diabetes, cancer, chronic respiratory diseases of the heart, including hypertension,

mental health, abuse and accidents, diversion of human capital and supplies to tackle the COVID-19 pandemic, income and work losses that could limit access to the health services, food scarcity will increase, leading to an increase in severe acutemalnutrition cases and restriction of movement and the stay at home recommendation would result in increased food intake among those with access, which may result in increase in overweight/ obesity and the resultant diet related non-communicable diseases (MOH, 2021).

### 1.3 Purpose of the study

The study aimed to determine factors that influenced health care service utilization among pregnantwomen and caregivers with children under two years during COVID-19 pandemic in Migori County in the period between April 2020 and August 2020. The findings will be useful in ensuring continuity of health services by ensuring coordinated response for the different building blocks of the health system.

### 1.4 Research Objectives

#### The Broad Objective

To determine factors influencing health care utilization among pregnant women and mother or caregivers with children under two years during COVID-19 pandemic in Rongo Sub-County in Migori County.

#### 1.4.1 Specific Objectives

i. To examine the influence of social stigma due to COVID 19 on healthcare services among pregnant women and care givers with children under two years in Rongo Sub-county.
ii. To assess the influence of communication to the general population due to

COVID-19 on healthcare services among pregnant women and care givers with children under two years in Rongo Sub-county.

iii. To assess the influence of social distancing as a preventive measure against COVID-19 on healthcare services among pregnant women and care givers with children under two years in Rongo Sub-county.

iv. To determine the influence of human mobility restrictions due to COVID-19 preventive measures on healthcare services among pregnant women and care givers with children under two years in Rongo Sub-county.

## 1.5 Research Questions

i. How does social stigma due to COVID 19 influence the utilization of health care services among pregnant women and care givers with children two years and below?

ii. What are the communication factors of COVID-19 preventive measures that influence utilization of health care services among pregnant women and caregivers with children two years and below?

iii. Which factors related to social distancing COVID-19 preventive measures influence utilization of health services among pregnant women and caregivers with children two years and below?

iv. How does human mobility restrictions COVID-19 preventive measures influence utilization of health services among pregnant women and caregivers with children two years and below?

## 1.6 Justification of the Study

Policy-makers need to consider not just the pandemic's immediate health

consequences, but also the pandemic's spillover impacts and response when considering their choices. A research of the 2014 West African Ebola virus outbreak indicated that the secondary impacts of the epidemic were more severe than the outbreak itself (Brolin et al., 2016). Whereas other nationalmeasures aim to control, prevent, mitigate or halt the transmission of the infection, there is considerable concerns about which interventions are successful or not, ranging from strict guidelines on social distancing; hand hygiene; travel restrictions; and closing of colleges, restaurants, shops and bars to a full shutdown of sections of the community. Scientific evidence is required immediately to inform the government about the efficacy and possible adverse effects of such measures particularly on critical health services (Ioannidis, 2020). Considering the paucity of both data and insight into the pandemic mechanisms, this study helped in generating knowledge for management of essential health services during a pandemic. Core epidemiological estimates, such as disease attack rate andinfection – hospitalization and infection – fatality ratios, are not yet available and there is significant uncertainty in the predictions based on existing limited data (Lipsitch, 2020).

Therefore, scientists blindfolded by the lack of evidence must advise a government which must decide on far-reaching steps that radically change the lives of individuals and communities. The condition is distressing (Burdorf et al., 2020). The ability of a system to sustain the provision of critical health services would depend on the health system 's baseline capability, disease burden and the history of COVID-19 transmission. And ensuring that Kenyans do not experience more morbidity and mortality from lack of access to basic health services (WHO, 2020) is crucial. This illustrates the need to put in place steps to direct the quality of the delivery of critical health service at health care

facilities.

### 1.7 Limitations of the Study

Due to fear and stigma associated with COVID-19 the study did not investigate in detail other aspects of COVID-19 that are critical in understanding the impact of the disease on utilization of health services. The caregivers were prone to maturation effect as positive COVID-19 messaging was reinforced overtime. Therefore, the study reviewed data within the first five months (April to August) of COVID-19 to reduce the effect.

### 1.8 Delimitation of the Study

The scope of the study covered health care service utilization from April to August 2020 when lockdown was imposed and other COVID-19 restriction measure. The research focused on services offered at maternal and child health clinic (MCH) for women in Rongo Sub-County.

### 1.9 Significance of the Study

This research is useful resource to different stakeholders such as; Mother and children seeking healthcare in Migori County by addressing some of the fear's respondent have that might cause delay in seeking health care. Understanding the challenges of mothers; Rongo Sub-County health facilities allows for adjustment of service delivery to meet their needs. The research also benefits Ministry of Health, and other developmental agencies working to improve health through provision of data on the impact of COVID-19 on essential services, during this time when data is limited. Finally, the study advances public discourse on management of pandemics and ensuring continuity

of care by adding to the body of knowledge in the academic sphere.

### 1.10 Operational Definition of Terms

**Social distancing**: also known as "physical separation," When engaging with people outside of your house leave at least one meter between you and them.

**Social stigma**: The negative health correlation between an individual or a group of people who are affected by COVID-19. Individuals may be branded, stigmatized, targeted, treated separately, and/or lose status owing to a perceived link with COVID-19.

**Public stigma**: The general population validates prejudice and discriminates against people as associated with originators or having recovered from COVID-19

**Personal stigma**: consisting of self-stigma, perceived stigma, and experienced stigma as a COVID-19 patient or relationship with a COVID-19 patient.

**Human mobility restriction**: these are measures imposed to restrict movement of human from one geographical location to another or within specified time

**Communication**: these refers to the messages that got out to people through different mediums such as radio, social media, person-to-person or public address system

**Utilization health services**: is the use of facility-based formal health services that is inpatientor outpatient services as the final outcome after creating health needs based on socio economic factors.

**Demographic information**: this is information that define the characteristics of a population based on gender, marital status, income, education and employment

**Public hospital:** these refers to all facilities run and managed by the county government

**Private hospital:** these are hospitals owned and operated by individuals, faith-based hospitals and non-governmental organizations

# CHAPTER TWO

# LITERATURE REVIEW

## 2.1 Introduction

This chapter outlines the theoretical literature review, the theoretical framework for factors influencing utilization of health care services during COVID-19, and the conceptual framework for the study.

## 2.2 Utilization of Health Services

Service utilization is the actual coverage and is divided into outpatient and; and preventive services (In-patient) (Oladipo et al., 2014). Utilization is a significant element that has been validated by past and current circumstances around the world when preparing every health care delivery system. In developing countries, particularly among the rural population, attempts have been made to encourage utilization, but progress has been minimal. A significant topic of political advocacy has been free medical treatment to boost quality by eliminating financial obstacles (Pepe et al., 2020). Certain factors that have been found to impact the general usage of health care include: physical inaccessibility, excessive medication storage, lack of adequateresources and lack of facilities. The research concentrated on how use of in-patient and outpatient care among the pregnant women and Caregivers with children under two years during the COVID-19 pandemic between the months of April and August was affected.

### 2.2.1Inpatient

Besides its immediate death toll, the spread of the West African EVD dramatically decreased the use of health care in the communities most affected. The effects on health and mortality from non-EVD causes of this indirect effect remains unclear. With a

substantial decrease in use of health care services over a large population for up to 12 months, it has the potential to cause a number of additional deaths that may have surpassed the direct impact of Ebola (Wilhelm et al., 2019). Prospective clients may avoid seeking treatment at health facilities because they fear contracting during their visit or being diagnosed with EVD. Concerns about the potential for nosocomial transmission of EVD in certain settings (Shears, 2015) contributed to perceptions that health facilities should be avoided. Similar effects have also been reported in past outbreaks of other infectious diseases, such as the 2003 SARS outbreak associated with a spikein hospital and ambulatory care spending in Taiwan (Chang, 2004). Inpatient treatment experienced the greatest drop during the EVD outbreak. Malaria programs saw the smallest increase, but it was still major. One sub set of services within the "other" group that actually increased by 22 percent during the epidemic was management of child malnutrition, but this result was centered solely on data from one study conducted in Liberia (Wilhelm et al., 2019).

### 2.2.2Outpatient

Outpatient care studies from the neighboring countries to Taiwan have reported a 20 percent to 59 percent decline during the SARS outbreak only (Chang, 2004). Vlantis observed a 59% decline in the per week outpatient clinic use and an 84% downward trend in the routine admission rate for the department of otorhinolaryngology neck and head surgery at the Hong Kong metropolitan tertiary referral hospital (Geisler et al., 2015). Inpatient care typically results from outpatient and ambulance transfers. Consequently, as workload at the outpatient is impaired, these directly lead to lower inpatient service capacity. Thus, the major challenge is to decide how public health organizations will respond to usage changes and potential accessibility barriers to the community caused by the COVID-19 pandemic. In this research, we aimed to

determine how various policy policies and guidelines affected their use patterns of medical services in Migori County.

### 2.3 COVID-19 Related Social Stigma

There have been accounts of apprehension of approaching people who may be contaminated with COVID-19 virus (Lin, 2020). Admittedly, fear itself can exacerbate the harm to the illness.The COVID-19 resurgence (Guan et al., 2020; Huag et al., 2020) and its global spread have amplified fears around the world that in some cases lead to stigma. As a result, it can potentially increase social inequalities in our countries and cities. For instance, cases of mistreatment have been reported among Asian communities, immigrants and refugees (Zhang et al., 2020). Parts of Africa regions and sections of South America have seen an increase in stigmatized-based aggressive behavior. On-line bullying in Kenya, Cameroon, South Africa Nigeria and Ethiopia (Katherine et al., 2020) has been observed.

#### 2.3.1 Personal-based stigma

The perception or expectation of stigma refers to people's assumptions regarding actions of the general public towards their situation and towards themselves as members of a possibly stigmatized community (LeBel, 2008). There is specific type of personal-based stigma which include: Experienced stigma refers to prejudice or limitations actually faced by the affected persons. The internalization and acceptance of stereotypic or stigmatizing views, that is, of public stigma, by the stigmatized person is referred to as self-stigma or internalized stigma (Yanos et al., 2008). Self-stigma has also been identified as a form of change in attitude whichmight result in loss of long accepted (positive) self-confidence, which in turn has detrimental effects on the person such as diminished self-esteem and self-efficacy (Corrigan, 2002). Notwithstanding the value

of personal stigma, little systematic research has been conducted on this subject to date. Therefore, should determine the effects of personal stigma in people suffering from COVID-19. Personal stigma can be dependent on illness process and will increase with increasing illness length and experience (Yanos et al., 2008).

### 2.3.2 Facility-based stigma

Evidence strongly suggests that stigma and fear of infectious diseases prevent health care worker (HCWs) of different positions and obligations from responding appropriately. Health care workers are facing an unparalleled emergency and insidious invisible threat, which has driven the national health service to its limits, rising workloads and physical and mental stress. At the person level, stigma has been correlated with inadequate rates of awareness and fear of casual communication in the workplace (Tiziana et al., 2020).

### 2.3.3 Community-based Stigma

Stigma can disrupt community stability and cause potential social isolation of groups, which may lead to a scenario where the outbreak is more, not less, likely to spread. This can result in severe health issues and difficulties controlling disease transmission. Stigma can: cause peopleto hide the illness so as not to discriminate. Prevent people from seeking immediate medical attention and discourage them from taking safe behaviors (WHO, 2020b).

COVID-19 pandemic has triggered social stigma and racist attitudes towards people of certain ethnic groups as well as those considered to be in touch with the virus (WHO, 2020). Fear and skepticism toward COVID-19 pandemics can lead to unfavorable outcome in disease management, as shown by earlier outbreaks such as Ebola and

SARS outbreaks (Geisler, 2015). Therefore, there is need to push for adopting an appropriate anti-stigma campaign that removes the COVID-19 misconception, raises interest of the public regarding COVID-19 and promotes optimistic and encouraging messages.

### 2.4 COVID-19 Related Communication

Effective communication among ill persons and health-care systems is bidirectional. If either the patient or the health care provider lacks a clear understanding of the transmitted information, the standard of treatment is compromised (Ratna, 2019). Low awareness in health matters causes patients to lack a good understanding of the progression of illness, the conceptsof self-management and the function of the health care system. It is also associated with increased rates of emergency and inpatient use of healthcare with high rates of direct morbidityand mortality. However, the reverse is also seen in pandemics, in which the use of hospital andambulatory facilities decreases dramatically (Parpia et al., 2016).

#### 2.4.1 Type of messages send during COVID-19

A recent study has shown that false and distorted news was more common during the U.S. presidential election 2016 than news from 19 credible outlets combined (Shigemura et al., 2020). This problem is a major concern for health experts as access to a huge amount of information can contribute to media exhaustion, leading to the withdrawal of healthy habits that are important to protecting people. In addition, misconceptions and myths about COVID-19 discourage behavioral interventions (such as social distancing and hand - washing) and promote incorrectpractices which accelerate the transmission of the virus and potentially lead to poor results in health and wellbeing. One father of three, for example, was confirmed to have committed suicide in India (Tasnim et al., 2020). One example of the dangers resulting from

poor health communication can be seen in Nigeria, where health authorities reported many reports of chloroquine overdose (a medication used to treat malaria) after rumors of the drug's possible efficacy in treating COVID-19 circulated through the news media (Shu et al., 2017). Rumors of a US statewide closure sparked panic food and paper purchases, disrupted the supply chainand worsened consumer shortages and food insecurity among citizens with low socio-economicstatus and other disadvantaged communities (Spencer, 2020). Other societies around the worldhave documented similar trends that may have had an effect on public health nutrition and psycho-social well-being among the affected populations.

### 2.4.2 Data Reporting during COVID-19

The pervasive confusion associated with the management and therapy of COVID-19 has frustrated the general public as well as the health care professionals who are dealing with a fairly under-researched disease. This phenomenon further undermines the validity of recent scientific studies on possible COVID-19 therapies or vaccine candidates (Tasnim et al., 2020).

### 2.4.3 Target audience

First, healthcare workers on the front line should be prepared with the latest scientific results and reliable knowledge for use in deliver of treatment and conveyed to at risk populations andpatients. It can also promote more effective contact between patient and provider, which contribute to improved health outcomes. Evidence indicate, the application of digital technology effectively enhances patient care in the management of mass casualty accidents, generating favorable outcomes in the form of resource allocation, expansion of treatment and improved patient safety outcomes (Zhao et al., 2006).

### 2.4.4 Medium of Communication

There are several myths, bits of misinformation and conspiracies about the etiology, causes, prevention, and cure of COVID-19 have appeared on many social media sites (Ali, 2020).The crucial problem is that misleading news spreads on social media rapidly than news from legitimate sources, subverting the reliability of news ecosystem. Social networking via the internet helps people to communicate without time and space limitations, and numerous socialmedia networks (e.g. Facebook, WhatsApp, Snapchat, WeChat, Twitter, Skype) have been wellestablished. The fear and stigma are likely to be minimized with the right information and awareness shared on social media (Cheung, 2015). In transmitting reliable information, mass media, social media, civic organizations, advocacy groups, and civil society may play vital roles. To achieve this, strategic alliances need to be formed at global and local level, linking online and offline resources in an organized way, so that knowledge can be validated and shared through channels (Tasnim et al., 2020).

## 2.5 Social Distancing as a Preventive Measure for COVID-19

Through closing borders, limiting public transit, and suspending non-essential operations, governments are restricting the movement of people. Such limits have negative effects on economies. Missing jobs, higher wages, and overburdened social security networks will furtherpush poor families into poverty and increase access to health care financial and other barriers. Prohibitions on travel can hinder physical access, worsened by inability to access of transport means and actual or perceived danger of regulation of public space travel (Ratcliffe, 2020). When concerns about COVID-19 spread affect the presumed risk-benefit equation for people who decide to go for treatment, demand for RMNCH services may decrease. For certain

environments, the larger socioeconomic effect of the disease would worsen food insecurity bygrowing hunger and farming processes disrupted thus overall nutritional outcome (Roberton et al., 2020).

There's no question that well-resourced, working health systems are required to manage the situation effectively. The epidemic in developed countries also puts tremendous pressure on health systems. Proposals for maternity facilities alone to reduce the exposure of pregnant women to sick people and ensuring that women receive critical treatment includes recognizingpossible cases before admission to health-care points, delaying regular appointments and applying strict isolation, social distancing and infection prevention measures to minimize spread to other patients and workers (Wilhelm et al.,2019). For low-resource health systems, placing such guidelines in place might not always be achievable. Dealing with COVID-19 is likely to create disparity in the delivery of healthcare, interruption of vital routine services andneed to redeploy limited health workers across health systems (Roberton et al., 2020).

### 2.6 Human Mobility Restriction during COVID-19

Human mobility leads to the spread of infectious diseases that present significant impacts on global health. Evidently, in response to pandemic threats, several countries consider and implement measures to limit human mobility movements as one of their mitigation strategies (Bajardi et al., 2011). However, prohibitions on human mobility are contentious not only because of their negative economic effects, but also because of the uncertainty about their efficacy in combating the epidemic (Goyena et al., 2019).

### 2.6.1 Travel time (Curfew)

The lack of access to facility delivery and professional treatment at birth is a significant indicator of avoidable maternal and newborn mortality. Nevertheless, access to the clinic was seriously hampered by enforcing stringent curfew rules that did not take into account the needsof pregnant women and their neonates. Women have experienced difficulty in finding transportation to health facilities when starting labor, as well as physical and verbal police abuse for going to health facilities past curfew hours (Roberton et al., 2020). If after curfew, a woman needs to step outside, she requires a letter from the chief. Such letters can be really hard to receive and if a woman doesn't have it, local authoritieswill bully her. Despite the curfew, marginalized women face greater challenges. For example, disabled people have a much more difficult time traveling and receiving resources. The curfewshave limited providers' freedom to go to health-care facilities to provide treatment for womenand newborns (Gilbert, et al., 2020).

### 2.6.2 Stay at home

Medical treatment is a core human right, but the COVID-19 epidemic has put a strain on healthcare systems around the world, affecting primary care for many individuals. (Roberton et al., 2020). Out of concern about the dissemination of the new COVID-19, medical professionals around the world have reduced in-person interaction with their patients and urged them to visit healthcare facilities only when appropriate. This has profoundly hindered, or even made impossible, routine prenatal visits to an obstetrician (Zhang et al., 2020).

### 2.6.3 Lockdown

There has been extensive consideration of the efficacy of lockdown interventions to prevent anoutbreak from spreading as a result of a rare infectious agent where no vaccine is available (Barbisch et al., 2015). Border enforcement measures will not go beyond screening for entry in normal situations. While entry screening at airports and other main sites was introduced during the 2002–2003 severe acute respiratory syndrome (SARS) epidemic, its effectiveness was reported to be insignificant in most nations given the relatively longer exposure time and exceptionally low diagnostic accuracy tests at the screening sites (Pitman et al., 2005). Most countries in the on-going COVID-19 outbreak have followed routine entry screening with radical adjustments in movement restrictions. Even though the impact of screening at entry points is likely to be limited as indicated in other findings, the epidemiological impact of the expanded travel bans has yet to be clearly assessed (Anzai et al., 2020).

## 2.7 Theory Underpinning the Study

The study followed the behavioral model of Andersen which is well recognized for checking accessibility to health care. The Andersen model consists of predisposing, enabling, factoring needs and external influences (Andersen et al., 1995). Predisposing factors apply to basic population characteristics; they included gender, age, and marital status in this sample. Enabling factors apply to circumstances that can be modified by a person and social effort; theyincluded level of education and employment, economic activity, type of medical care, and status of private insurance in this sample. Need factors are illness or disease problems that promote the use of the service (Walter et al., 2012). In this study, they included COVID19related, social stigma, social distancing, COVID-19 related communication and human mobility restriction.

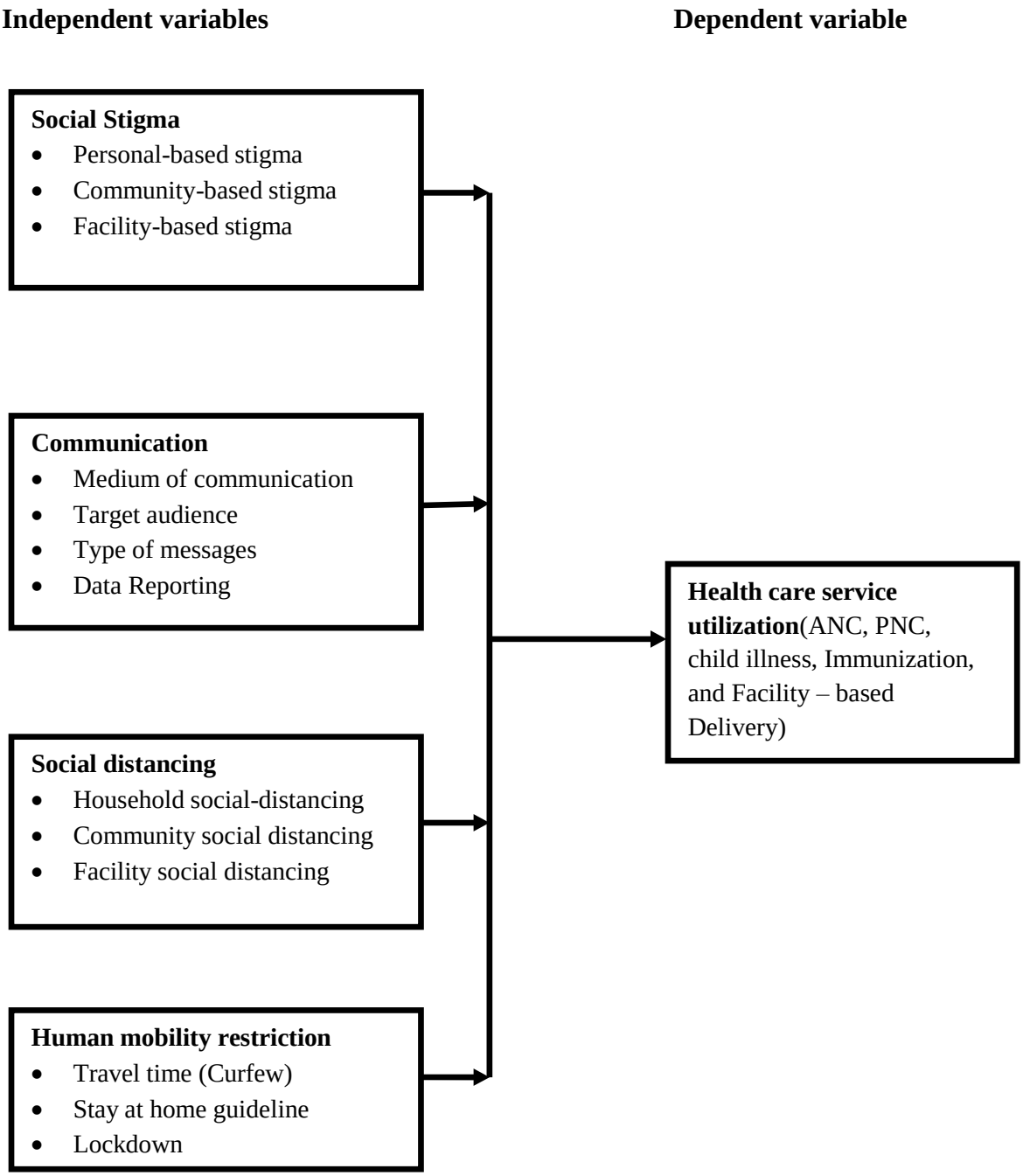



**Figure 2.1**

***2.8 Conceptual Framework***

# CHAPTER THREE

# RESEARCH METHODOLOGY

## 3.1 Introduction

This chapter contains research design, target population, sampling procedures, preparation of data collection instruments/instrumentation, data collection procedures and methods of data analysis.

## 3.2 Research Design

This study applied a retrospective cross-sectional based survey to guide the research process. Retrospective studies are prone to recall bias or misclassification bias. To control for bias in my study interviewers were blinded to exposure status of study participants. In addition, the outcome of interest was clearly defined prior to the study. The respondents were asked questions on how COVID-19 affected them with regard to seeking MCH services during the first peak of the COVID-19 in Kenya. Cross-sectional studies are used to measure the magnitude of a population's disease or health problems and are especially critical in informing the management and utilization of health resources (Setia, 2016). The study design used qualitative and quantitative approaches for collecting data. Collecting quantitative data produced information that can be used for descriptive and inferential purposes; it is assumed that the qualitative approach collects in-depth information used to support descriptive and inferential statistics. Open-ended questions were useful in enhancing validity of the data by allowing respondents to express their experiences and perspectives (Mugenda & Mugenda 2003).

The outcome variable utilization was described as the use of facility-based formal health services such as ANC, PNC, immunization, and nutritional screening at inpatient or outpatient. During the interview it was noted that some of respondent conflicted with

the CHW's list on utilization. Upon further probing we noted that there were two categories of women who did not utilize health care services. Therefore, we categorized utilization as a dichotomous outcome: Partial utilization where the pregnant mothers and caregivers of children below two years missed at least one health care service; and Non-utilization where a pregnant mother or caregiver missed all services within the five months (April to August) period of the study. Independent variables included; social stigma (personal-based stigma, community-based stigma and facility-based stigma), communication medium of communication (target audience, type of messages, data reporting and medium of communication), Social distancing (household social-distancing, community social distancing, and facility social distancing), and human mobility restriction (travel time (Curfew), stay at home guideline and lockdown.

### 3.3 Study Area

The study was conducted in communities living in the following four wards; North, South, Central and East Kamagambo in the Rongo sub-county. Rongo Sub-County is one of the eight sub-counties in Migori County. According to the national census of 2019, the population is estimated at 100,547 of 920,000 in the greater Migori County which covers 208.40 Sq. Km (Kenya National Bureau of Statistics [KNBS], 2019). The community is served by Lwala hospital and nine Government-run hospitals provide formal healthcare services in the catchment area. Lwala Community Alliance is a level four sub-county hospital, eight dispensaries and one sub-county referral hospital (Kenya Master Health Facility List [KMHFL], 2020).

### 3.4 Target Population

The target population included 6929 (Demographic Health Indicators Survey [DHIS],

2020) pregnant women and mother (caregivers)with children who are under 2 years, in Rongo Sub-county. Health care providers who interact with mothers were included as key informants. Pregnant women and caregivers with children below two years were included in the study because they have routine services settled on the two target populations because they have routine received during ANC/PNC visits.

### 3.5 Sample Size Determination and Sampling Technique

#### 3.5.1 Sample Size

A minimum adequate sample size was determined using Krejcie and Morgan sampling technique estimation method. Since the source population of pregnant women and mother (caregivers)with children who are under 2 years, in Rongo Sub-county was estimated to be 6929; sample sizeis set at 364 based on Krejcie and Morgan table (Krejcie et al., 1960).

$n = X^2NP(1-P)/d^2 (N-1) + X^2 P (1-P)$

n = required sample size

$X^2$ = the table value pf chi-square for 1 degree of freedom at the desired confidence level (3.841)

N = the population size

P = the population (assumed to be 50 since this would provide the maximum sample size)D = the degree of accuracy expressed as a proportion (0.05)

n = (3.841*6929*0.5*05)/ (0.0025*6928) + (3.841*0.5*0.5)n = 363.95/ 364

To sample the key informants, the study purposively selected 34 key informants who included: 2 public health officers, 7 community health workers, 20 nurses and 5 clinical officers.

### 3.5.2 Sampling Techniques

To the sample the of pregnant women and mother (caregivers) with children who are under 2 years, multi-stage sampling was conducted. The population was divided into clusters to form wards as the primary sampling unit. A list of hospitals within the four wards was drawn and facilities selected. In the second stage, I listed high volume facilities in the wards and selected two facilities based on volume and capacity of services offered. In the third stage, the sample size drawn from each stratum was divided in a 60:40 ratio based on proportionate size. The hospitals formed strata where, respondents were classified based on the facility they attend. In order to obtain individual respondents, Community Health Workers attached to these facilities provided a list of women who did not seek health care for the period between April and August 2020. This period was selected because it was the high peak of the first wave of COVID-19 infection in Kenya (MOH, 2020). A simple random sampling was then performed for each stratum till the desired sample size was achieved. Key informants were purposively selected by selecting nurses, and clinical officers working in the mother and child section. Lead CHWs and those attached to health facilities were also included in the study. Two public health officers attached to Rongo sub-county were also selected to participate in the study since they were directly involved in COVID-19 mitigation.

## 3.6 Inclusion Criteria

The study only included respondents who had missed at least one of ANC/PNC appointments during the months of April – August 2020, were of age 18 years and above, who were either pregnant or mothers or caregivers with children under two years.

### 3.7 Exclusion Criteria

The study excluded any women who do not seek health care services in facilities within Migori County. Women who did not reside in Rongo Sub county during the first COVID-19 peak period in Kenya. In addition, any respondent who did not give their consent were excluded.

### 3.8 Instrumentation

The principal investigator collected qualitative and quantitative data using a key informant interview guide (Appendix III) and a structured questionnaire respectively (Appendix II). The structured questionnaire contained six sections including: demographic characteristics, COVID-19 related social stigma, social distancing factors, COVID-19 related communication and human mobility restriction. Key information interviews (KII) was used to collect qualitative data among nurses, clinical officers, community health workers and public health officers in selected health facilities. The KII guide contained questions addressing COVID-19 related social stigma, social distance, COVID-19 related communication and human mobility restriction. Phone interviews and all COVID-19 preventive measures were adhered to while administering the data collection tools.

### 3.9 Pre-test

The researcher conducted a pre-test by administering research tools to participants who were randomly selected. The pretest participants were not included in the main sample. Forthe pretest, a sample size of 10% (36 respondents including; pregnant women and women with children under two years) was selected. The pre-test was conducted in the neighboring Homa Bay County Referral Hospital that has similar socio- economic demographic characteristic as Migori County.

### 3.10 Validity

The validity of the questionnaire was tested during pretest using a sample of 10% of the total study population. Face validity was used to measure the accuracy of the variables in the research instrument. This was done by sharing the instrument with other people for peer review of accuracy of the instrument. Content validity to measure how well the study instrument covers the range of meanings included within the concept that was being measured.

### 3.11 Reliability

The split-half reliability testing approach was used to verify the internal consistency of the research tools administered as indicated in the table below. In order to determine the consistency of the research instrument, Cronbach coefficient (alpha = N č \v + (N-1) č) alpha was used to measure the average of all possible split-halves in the questionnaire. The score indicated consistency in the research instrument. Here N is directly proportional to the number of items, č is the estimated covariance between the items and v is proportional to the combined variance. The test assessed the inter-item average correlation in a specific form of internal consistency obtained by applying the same construct on each test object. The Cronbach alpha is determined by correlating the score for each item with the total score for each observation (usually individual survey respondents or test takers) and then contrasting it with the variability for all item scores (Tavakol et al., 2011).

**Table 3.1**

***Reliability Results***

| Variables | No. of Respondents | Cronbach alpha |
|---|---|---|
| **Social Stigma** | 36 | 0.717 |
| **Communication** | 36 | 0.672 |
| **Social distancing** | 36 | 0.86 |
| **Human mobility restriction** | 36 | 0.754 |

### 3.12 Data Collection

The structured questionnaire (Appendix II) was administered to clients from the list generated by CHWs for caregivers attending selected health facility in the mother and child health department. The list contained the contacts of caregiver who missed at least one ANC/PNC services for the period between April and August 2020. The list also contained facilities caregiver attend, contact and their village for follow-up visit. Using the contacts, the researcher made calls to caregivers to book for interview appointment. When an eligible caregiver was not reached on phone or was not willing to participate she/he was replaced with another respondent from the list until the desired number of respondents was achieved. All interviews took place in the community.

On a daily basis 12 questionnaires were administered in open space in compound of respondents with aeration due to COVID-19 and to ensure privacy. Interviews conducted in the house ensured social distancing and facemask were put on appropriately. Each interview was approximately 20-30mins. Some interviews were done via the phone for some clients were not comfortable having visitors in their home due to COVID-19. The principal investigator sort consent from the respondents before

administering the questionnaire. Key informant interviews was conducted among nurses, community health workers, clinical officers and public health officers attached to the different health facilities. The key informants were purposively selected and a description of the study provided before seeking their consent to be part of the research. The interviews were one-on-one in the privacy of their office setting. Face-to-face interviews were conducted observing all the COVID-19 prevention protocols, and phone interviews used where applicable due to COVID -19.

### 3.13 Methods of Data Analysis

Analysis based on descriptive statistics was used to describe socio-demographic factors using tables to summarize numerical data. For the dependent variable (utilization) correlation and regression analysis was conducted against independent variables; social distancing, social stigma, communication and human mobility restriction. Association was tested using chi-square tests and contingency table at 0.05 significant level. The hierarchical regression model was conducted in IBM® SPSS® Statistics software (SPSS) version 24 to predicted the interaction term at p value <0.05 significance in relation to utilization. Utilization outcome was entered as the criterion variable. The outcomes for stigma were entered into the first block, communication outcomes were entered into the second block and social distancing and human mobility restrictions were entered into third and fourth block respectively. Hierarchical multiple regression model was used as indicated below:

$Y = \beta 0 + \beta 1X1 + \beta 2M2 + \beta 3X3 + \beta 4X4 + \varepsilon i$

Where

Y= Utilization of health care services

B0 - intercept coefficient

εi – error term (extraneous variables)

X1 – social distancing

β1 =regression coefficients

x2-social stigma

β2 =regression coefficients of social stigma

x3-communication

β3 =regression coefficients of communication

x4-human mobility restriction

β4 =regression coefficients of human mobility restriction

Qualitative analysis of data for key informant interviews was carried out using the approach of applied thematic analysis. In the study, themes were predetermined based on the four objectives where variable under each objective formed the themes. After finishing the transcription, I went over the material multiple times to familiarize myself with the text. Reading and re-reading the transcribed material multiple times helped me familiarize with it, which aided in the creation of the initial codes. It was easier to incorporate different codes into the established themes after producing the codes. According to Walter (2019), themes and subthemes are the results of extensive reading and re-reading of the transcripts or field notes that comprise the data. Examining for the connections and variations in each text's content helped me establish final primary themes. Primary themes were descriptive in form and marked for subsequent data analysis allowing for more theoretical coding principles and new thought.

The research results determined utilization of health care services and the main factors affecting the utilization of health care services during the COVID-19 pandemic

between the months of April and August 2020. The research provided recommendations that will contribute to improvement of delivery of essential services during COVID-19 pandemic.

### 3.14 Ethical Considerations

Ethical approval was obtained from the Scientific and Ethical Review Committee (SERC) of Kenya Methodist University (KeMU). A research permit was sought from the National Commission for Science Technology and Innovation (NACOSTI) Kenya and the Migori and Rongo Sub-County Health County Offices. Given the non – patient or human subject procedures related to the study there was less risks to the patients and caregivers. Verbal informed consent was obtained from all study participants using informed consent form prior to collecting any information. Confidentiality of every participant was protected.

# CHAPTER FOUR

# RESULTS AND DISCUSSION

## 4.1 Introduction

The chapter details the study findings as well as interpretation of data gathered from the participants. The data was analysed from questionnaire and a key informant interview guide. The findings were analysed using SPSS V24 and presented using charts and tables. Thematic analysis was used to analyse the key informant interviews. Predetermined themes stigma, communication, social distancing and human mobility restriction were used to examining for connections and variations in the text analysis.

## 4.2 Response Rate and Reliability Results

The study involved questionnaires for caregivers, key information from community health workers, public health officers, nurses and clinical. The response rate for each category is given in Table 4.1.

**Table 4.1:**

***Response Rate of All Study Respondents***

| **Category** | **Sub Category** | **Sample Size** | |
|---|---|---|---|
| | | **N** | **%** |
| **Questionnaire** | Caregivers | 364 | 100.00 |
| **Key Informant (Community-Based / Facility-based)** | CHW | 7 | 20.6 |
| | Public Health Officer | 2 | 5.9 |
| | Nurse | 20 | 58.8 |
| | Clinical officer | 5 | 14.7 |

The assessment response rate was 364(100%) for the caregivers and 34(100%) for key informants in the community based and facility-based centres that include community health workers 7 (20.59%), public health officers 2 (5.88%), nurses 20 (58.82%) and

clinical officers 5 (14.71%). This was achieved after administering the questionnaire to participants who attended the healthcare facilities during the period. However, all 34 key informants were reached in time. The research tool was reliable as the Cronbach's Alpha co-efficient were 0.717, 0.672, 0.86 and 0.754 respectively for the four objectives.

## 4.3 Descriptive Statistics

### 4.3.1 Demographic Characteristics

The study included 398 participants, where 364 were pregnant mothers and caregivers of children between 0 to 2 years. The remaining 34 were key informants drawn from different departments of health. The following table 4.2 presents the socio-demographic characteristics of caregivers.

Majority of the respondents 280 (76.92%) were married. The married contributed to the largest % age of the respondents since their spouses could provide resources to utilise healthcare services. Further, the married constituted the largest portion of pregnant women and mothers who had children below two years. The married also provided the largest % age because the sample had women and mothers of 18 years and above, which was desirable for the study criteria.

Majority of the participants 126 (34.62%) were engaged in small businesses. This implies that majority of pregnant women and caregivers with children below two years were engaged in some form of movement as they travel from one point to another to buy and sell their goods and services within the county. Further, it shows that they access some income from business to cover expenses that may be associated with the

utilisation of healthcare services. Besides, majority of the respondents 126 (34.62%) had husbands who were engaged in small businesses, implying that they could provide their wives with resources to utilise healthcare services.

**Table 4.2:**

***Socio-demographic Characteristics of Caregivers (n= 364)***

| Variable | Categories | Frequency | % |
|---|---|---|---|
| **Marital Status** | Divorced | 2 | 1 |
| | Married | 280 | 77 |
| | Separated | 7 | 2 |
| | Single | 66 | 18 |
| | Widowed | 9 | 2 |
| **Occupation** | Farmer | 80 | 22 |
| | House wife | 76 | 21 |
| | None | 3 | 1 |
| | Paid employee | 26 | 7 |
| | Small business | 126 | 35 |
| | Student | 45 | 12 |
| | Unemployed | 8 | 2 |
| **Husband Occupation** | Farmer | 70 | 19 |
| | None | 87 | 24 |
| | Paid employee | 65 | 18 |
| | Small business | 126 | 35 |
| | Student | 5 | 1 |
| | Unemployed | 11 | 3 |
| **Level of education** | College | 72 | 20 |
| | Non-formal | 9 | 2 |
| | Primary | 133 | 37 |
| | Secondary | 150 | 41 |
| **Husband level of education** | College | 77 | 21 |
| | Non-formal | 1 | 1 |
| | None | 84 | 23 |
| | Primary | 90 | 25 |
| | Secondary | 112 | 30 |
| **Mode of transport** | Motorbike | 213 | 59 |
| | Public transport | 36 | 10 |
| | Walking | 115 | 32 |
| **Treatment place** | Private | 212 | 58 |
| | Public | 152 | 42 |
| **Type of services received** | In-patient | 33 | 9 |
| | Outpatient | 331 | 91 |
| **Source of information** | Print media | 18 | 5 |
| | Radio | 157 | 43 |
| | Social media | 72 | 20 |
| | Television | 117 | 32 |

Most of the respondents 150 (41.21%) had secondary level of education. This implies that the respondents had some form of education, understood the objective of the assessment, and clearly answered the questions asked. It also shows that they understood COVID-19 preventive communication measure relayed in both English and Kiswahili.

Table 4.2 indicates that majority of the husbands 112 (30.77%) had secondary level of education. This shows that they had some form of education to understand the disseminated information concerning COVID-19 preventive measures. Further, they are can better understand the benefits of healthcare utilization among pregnant and caregivers with babies under two years.

Majority of the respondents 213 (58.52 %) used motorbikes as their mode of transport. It means that most of these respondents could easily access healthcare facilities. Motorbikes are relatively fast and cheaper over short distances. The findings showed that majority of the respondents 212 (58.24 %) sought treatment in private facilities. This could be alluded to the inefficiency in the delivery of care within the public facilities. Majority of the respondents 331 (90.93 %) showed that they received outpatient services, implying that ANC, PNC, and child immunization uptakes are mainly outpatient.

The sources of information for the majority of the respondents 157 (43.13%) was radio. It means that radio was the most dominant medium of communication, which would work effectively to communicate COVID-19 preventive measures. It is also alluded to

the fact that majority of the respondents owned radios or had at a least a radio in their homes.

### 4.3.2 Measures of Central Tendency for selected Variables

The measures of central tendency and range was calculated for age, number of children, time to clinic and home visits by community health workers. The results are represented in Table 4.3.

**Table 4.3:**

**Measures of central tendency for participants (N=364)**

| Variable | Min | Max | Mean | Std. Dev. |
|---|---|---|---|---|
| Age | 18 | 58 | 25.5 | 5.772 |
| Number of children | 0 | 9 | 1.986 | 1.343 |
| Time to clinic (Minutes) | 5 | 120 | 38.805 | 23.537 |
| Home visit by CHWs | 0 | 6 | 1.401 | 1.390 |

The mean age for study participants was 25.5 years with a standard deviation of 5.77. This means most of the participant ages did not vary widely, but were clustered around the mean age. Of the 364 caregivers: the mean number of children, time spent to get to the clinic and home visit by CHWs was 1.986, 38.805 and 1.401 respectively as reported in Table 4.3. For the variables stated above, there was normality in distribution.

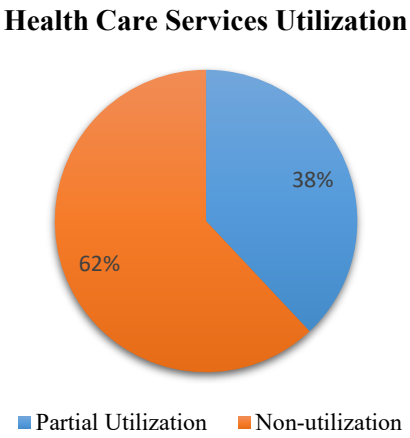
### 4.3.3 Utilization of health services during COVID-19

Based on the findings from the analysis, 226 (62%) of the participants did not utilize

health services completely (missed all health care services when needed within the five months) during COVID-19 pandemic; while the remaining 38% partially (missed some of the health care services when needed) received health care services when needed during COVID-19 Figure 4.1 presents the study findings.

**Figure 4.1:**

***Utilization of Health Services During COVID-19***




Majority of these respondents did not go to hospital because of social stigma surrounding COVID-19, the need to observe social distancing COVID-19, and human mobility restrictions, among other factors. The assessment findings are pertinent to the observation made by Oladipo et al. (2014) that certain factors that have been found to influence the general usage of health care. Also Ahmed et al. (2020) recorded low access to the health services in informal settlement in in Kenya and Nigeria. There was a high awareness of the symptoms and preventative measures for COVID-19 amongst respondents.

### 4.4 Inferential analysis of objectives

Descriptive statistics involved computation of chi-square statistic and test of level of

significance at P value 0.05. We computed percentages to express partial utilization and non-utilisation of services between April and August 2020 during COVID-19 restriction measure. To determine how health care service utilization was affected: Respondents were expected to respond Yes (If their ability to seek health care services was affected) and No (If their ability to seek health care services was not affected). The results are represented as per each objective below:

### 4.4.1 Social Stigma surrounding COVID-19

The first objective was to examine the influence of social stigma surrounding COVID-19 on utilization of healthcare services among pregnant women and caregivers with children under two years. The primary social stigma attributes that were used to assess the determinants of health services uptake included personal-based stigma, community-based stigma, and facility-based stigma. The respondents were expected to respond Yes (If their ability agreed with the statement) and No (If they disagreed with the statements). The results are shown in Table 4.4.

Table 4.4 shows that just above half 186(51.1%) of the respondents considered themselves afraid that they would get COVID-19 when they sought health services from health workers. While 183 (50.2%) considered themselves not able to live or work close to someone who has recovered from COVID-19. The self-stigma would detrimentally affect the uptake of healthcare services. The findings re-affirm the observation made by Corrigan (2002) that self-stigma has also been identified as a form of change in attitude which might result in loss of long accepted (positive) self-confidence, which in turn has detrimental effects on the person such as diminished self-esteem and self-efficacy.

Nearly a third 249 (68.4%) of the respondents considered that they dread the thought

that they could become a COVID-19 patient. While 267 (73.4%) respondents were of the perception that they would not let people know if there was a person with COVID-19 in their family. It can be deduced from the assessment findings that personal based stigma surrounding COVID-19 derails the utilisation of healthcare services among pregnant women and caregivers of babies below 2 years old. The chi-square results show that there was a significance difference ($P<0.001$) in responses by respondents in every category of 'Yes' and 'No' for the influence of personal based stigma on the utilisation of healthcare services.

Most 276 (75.8%) of the respondents stated that their community would discriminate them for visiting health facilities during COVID-19. This type of community directed stigma on individual would negatively influence the uptake of healthcare services as more pregnant women and caregivers of babies below 2 years old would shy away from seeking health services. Similar observation was noticed among 222 (60.9 %t) respondents who concurred that their neighbours were often speaking negatively of people who sought health services during COVID-19 time. However, 339 (93.1%) disagreed with the statement that their religions often advised them against seeking health services during the times of COVID-19. It implies that religion is not a barrier to the utilisation of healthcare services during this period of COVID-19. The study findings are in line with WHO (2020b) statement that COVID-19 has triggered social stigma as well as racist attitudes towards individuals of certain ethnic groups, and those considered to be in touch with the virus.

**Table 4.4:**

***Social Stigma surrounding COVID-19 among mothers or caregivers with children under 2 years***

| Description Variables | Yes N (%) | No N (%) | Chi-square | P-value |
|---|---|---|---|---|
| **A: Personal-based stigma** | | | | |
| I am always afraid that I will get COVID-19 when I seek health services from health workers | 186 (51.1) | 178 (48.9) | 47.61 | 0.0001 |
| I cannot live or work close to someone who has recovered from COVID-19 | 183 (50.2) | 181 (49.8) | 60.84 | 0.0001 |
| I dread the thought that I could become a COVID-19 patient | 249 (68.4) | 115 (31.6) | 84.64 | 0.0001 |
| I won't let people know if there is a person with COVID-19 in my family | 267 (73.4) | 97 (26.6) | 59.29 | 0.0001 |
| **Community-based stigma** | | | | |
| The community will discriminate me for visiting health facilities during COVID-19 | 276 (75.8) | 88 (24.2) | 77.44 | 0.0001 |
| My neighbours are often speaking negatively of people who seek health services during this time of COVID-19 | 222 (60.9) | 142 (39.1) | 68.89 | 0.0001 |
| People with COVID-19 should not be allowed to remain in their homes | 162 (44.5) | 202 (55.5) | 65.61 | 0.0001 |
| **Facility-based stigma** | | | | |
| Health facilities is where people are getting COVID-19 | 235 (64.6) | 129 (35.4) | 51.84 | 0.0001 |
| I often afraid of visiting health facilities during this period of COVID-19 | 236 (64.8) | 128 (35.2) | 96.04 | 0.0001 |
| The health personnel often treat people with suspicion when you seek health care services | 269 (73.9) | 95 (26.1) | 88.36 | 0.0001 |
| I always feel discriminated when screened before entering the health facility | 342 (93.9) | 22 (6.1) | 98.01 | 0.0001 |

Majority 202 (55.5%) of the respondents declined to the statement that people with COVID-19 should not be allowed to remain in their homes. This implies that COVID-19 patients should remain within their homes to avoid the spread of the deadly virus.

The chi-square results show that there was a significance difference (P<0.001) in responses by respondents in every category of 'Yes' and 'No' for the influence of community-based stigma on the utilisation of healthcare services.

Most 235 (64.5%) respondents considered that people contract COVID-19 from healthcare facilities. Since stigma and fear of infectious diseases deter health care workers (HCWs) of various positions and obligations from responding appropriately, those seeking care also have similar fears. Similarly, 236 (64.8 %) respondents held that they were often afraid of visiting health facilities during this period of COVID-19. The findings concur with Jolivet et al. (2020) assertion that stigma has been correlated with inadequate rates of awareness as well as fear of casual communication in the workplace.

Nearly more than two-thirds 269 (73.9%) of the respondents were of the opinion that health personnel often treated people with suspicion when they sought healthcare services. The level of suspicion has made certain individuals seeking health services be subjected to COVID-19 testing. Further, 342 (93. %) respondents felt discriminated when screened before entering the health facility. The chi-square results show that there was a significance difference (P<0.001) in responses by respondents in every category of 'Yes' and 'No' for the influence of facility-based stigma on the utilisation of healthcare services.

In the key informant interviews, participants were asked to provide their understanding on how COVID-19 has affected service utilization. Majority of the key informants stated that though hospitals remained operational; there was a significant drop in health

services utilization. This agrees with the quantitative analysis, which indicated that 62% of the respondents failed to visit health facility at one point even though they needed services. Majority of the respondents recorded that personal, community and facility-based stigma played a role in reduction of service utilization and how health care providers offered services. A respondent cited:

> "*… As a health officer, I was afraid of contracting the disease and this changed how I offer services and interact with clients. Patients also failed to visit ANC clinics due to fear of being suspected of having Covid-19 by health care providers*."
>
> (Key Informant, 001, Male, Nurse)

> *"… My family will not allow me reach near them after work as they looked at me like someone carrying the virus…"*
>
> (KII, 12, male public health officer)

The results from this study agree with Lin (2020), Guan et al. (2020) and Huag, et al. (2020) who reported that fear has caused harm to people seeking health services. Zhang et al. (2020) noted mistreatment among Asian communities, immigrants and refugees in China during covid-19 season. Bhanot et al. (2021) have reported widespread stigma in India due to covid-19 which include religious, social class, professional and bereavement. Ahmed et al. (2020) observed that due to COVID-19 resulted in reduction in access to healthcare services among slum dweller, including preventive services. He further alluded that there was fear of being diagnosed with COVID-19 that discouraged healthcare seeking. The stigma was widespread, WHO (2020) report on stigmatization on healthcare recommends how to reduce the stigma to individual diagnosed with COVID-19 health care works and those seeking health services.

### 4.4.2 Communication of COVID-19 Preventive Measures

The descriptive analysis focuses on the second objective. This was to determine the influence of COVID-19 preventive measures on the utilisation of healthcare services.

Table 4.5 presents the findings.

Majority 225 (61.2 %) of the respondents refuted the claim that messaging from campaigns was not relevant to them. While 226 (62.1 %) declined that most mainstream media were not reliable. This implies that campaign messaging and mainstream media are crucial in disseminating information concerning COVID-19 preventive measures (Busari et al., 2020).

**Table 4.5:**

***Communication of COVID-19 Preventive Measures to the general population***

| COVID-19 Related Communication | Yes N(%) | No N(%) | Chi-square | p-value |
|---|---|---|---|---|
| **Medium of Communication** | | | | |
| Messaging from campaigns are not relevant to me | 139(38.8) | 225 (61.2) | 44.89 | 0.0001 |
| Most mainstream media are not reliable | 138 (37.9) | 226 (62.1) | 77.44 | 0.0001 |
| There is a lot of misinformation on social media | 205 (56.3) | 159(43.7) | 68.89 | 0.0001 |
| **Type of message** | | | | |
| People were discouraged from visiting health facilities | 135 (37.1) | 229 (62.9) | 96.04 | 0.0001 |
| **Data reporting** | | | | |
| Daily data reports from MoH have negatively impacted my health seeking behaviour | 99 (27.2) | 265 (72.8) | 92.16 | 0.0001 |

The assessment established that there was a lot of misinformation on social media as confirmed by 205 (56.3 %) respondents. This can be sometimes misleading, especially if the medium used for communication carries myths or beliefs that discourage people from adhering to covid-a9 preventing measures and the consequent utilisation of healthcare services. Nearly 229 (62.9%) respondents declined that people were

discouraged from visiting health facilities.

Similarly, 265 (72.8%) respondents refused that daily data reports from the Ministry of Health (MoH) had negatively influenced their health seeking behaviour. Instead, MoH daily reports have kept people well updated with COVID-19 infections, positivity rates, deaths, recoveries, debates, as well as other critical information to encourage people to adhere to the preventive measures as per the MoH guidelines. However, the assessment findings contradict Tasnim's et al. (2020) claim that the pervasive confusion associated with the management and therapy of COVID-19 has frustrated the general public as well as the health care professionals who are dealing with a fairly under-researched disease. Whilst some key informants reported that communication played a role in preventing mothers from come to hospital in overall it was not a common factor. This is in contrast to the quantitative analysis where some communication variables showed significant association with utilization of health services. Among the findings from the qualitative study, one participant indicated that:

> "… *Many people that receive the educational messages on COVID-19 come to seek health care services despite the fear that was there ...*"
> (Key Informant, 004, Male, CHW)

> *"… The messages impacted positively because more people were able to access information through different platforms" ….*
> (Key Informant, 26, Male, Clinical Officer)

Overall, the chi-square results show that there was a significance difference ($P<0.001$) in responses by respondents in every category of 'Yes' and 'No' for the influence of communication of COVID-19 preventive measures on utilization of health care services on the utilisation of healthcare services. Effective communication provides a

clear understanding of the transmitted information (Ratna, 2019). False and distorted news can mislead the general public (Shu et al., 2020) as reported by (Tasnim et al., 2020). The study agreed with Ogweno et al. (2021) who showed that Seventy-six (76.1%) of the youth received information on COVID-19 from the nationally televised press briefings by the Ministry of Health (MoH), while 56% of the youth received information from social media platforms such as Facebook (23.9%) and Twitter (32.4%). The televised press briefings by the Ministry of Health COVID 19 taskforce were regarded as the most credible sources of information on COVID-19 by 78.7% of the youth. Facebook was reported as the biggest source of fake, unverified, and misleading information on COVID-19 by 72.4% of the youth. The findings also established that misinformation on COVID-19 resulted in adverse effects on the mood and mental health of the participants; 35.7% felt confused by the misinformation while 23.9% and 22% reported anxiety and fear.

### 4.4.3 Social Distancing COVID-19 Preventive Measures

The third objective was to assess the influence of social distancing COVID-19 preventive measures on utilization of healthcare services among pregnant women and caregivers with children. The parameters of social distancing were analysed in terms of household social distancing, community social distancing, and facility social distancing. Table 4.6 presents the findings.

**Table 4.6:**

***Social Distancing COVID-19 Preventive Measures and Healthcare Services Utilization***

| COVID-19 Related Social Distancing | Yes N(%) | No N(%) | Chi-square | p-value |
|---|---|---|---|---|
| CHW house hold visits for community-facility referrals | 215 (59.1) | 149 (40.9) | 53.29 | 0.0001 |
| Restriction of number of people in vehicles | 234 (64.3) | 130 (35.7) | 67.24 | 0.0001 |
| Community based social distancing during facility outreach | 270 (74.2) | 94 (25.8) | 57.76 | 0.0001 |
| Halting of non-essential services and reducing of crowding in facilities | 242 (66.5) | 122 (33.5) | 94.09 | 0.0001 |
| Mandatory wearing of mask and keeping 2 meters at each service point in health facilities | 203 (55.8) | 161 (44.2) | 46.24 | 0.0001 |

Majority 215 (59.1 %) of the respondents accepted that community health workers (CHWs) hold visits for community-facility referrals. This implies that CHWs are critical for promoting the uptake of healthcare services. Further, 234 (64.3 %) respondents confirmed that there was restriction of number of people in vehicles. This implies that this containment measure would help to lower the rate of COVID-19 transmission. However, this contradicts the observation made by key informants as several of them reported that patients did not seek care in facilities because of the new measures introduced at facilities such as screening and wearing of masks. However, majority of the respondents noted that community-based social distancing was difficult and did not affect how mothers seek care. A key informant cited:

> "… *Social distancing, mandatory wearing of mask and screening makes others feel stigmatized making them not to come to the facility* ..."
>
> (KII, 10, male public health officer)

> *"… Facility based social distancing slowed down service delivery increasing waiting time for patients. It also reduced the interaction of health care provider and the patients …"*

(KII, 31, Female, Nurse)

Most 217 (74.2 %) respondents accepted that there was community based social distancing during facility outreach. While 242 (66.5 %) respondents cited that social distancing was maintained by halting of non-essential services as well as reducing of crowding in facilities. Maintaining social distancing is one of the COVID-19 containment measures aimed to stop the spread of the virus. This is in line with Wilhelm's et al., (2019) proposals to reduce the exposure of pregnant women to sick people and ensuring that women receive critical treatment includes recognizing possible cases before admission to health-care points, delaying regular appointments and applying strict isolation, social distancing and infection prevention measures to minimize spread to other patients and workers. This was re-affirmed by 203 (55.8 %) respondents who supported the mandatory wearing of masks and keeping two-metres at every service point in health facilities. The chi-square results show that there was a significance difference ($P<0.001$) in responses by respondents in every category of 'Yes' and 'No' for the influence of social distancing COVID-19 preventive measures on utilization of health care services on the utilisation of healthcare services.

Because there were no vaccines/reduced vaccinations or medications available for COVID19 during its outbreak season, public health measures such as social distancing were the only effective way to prevent the disease. Measures to reduce social distance have been implemented all around the world (Afrashteh et al., 2020). This technique has the potential to delay the epidemic's peak, giving the healthcare system more time to prepare for a pandemic (Anderson et al., 2020). Social distancing, in combination with other public health strategies, has the potential to minimize COVID-19 morbidity and mortality to various extents, and is critical in the pandemic's control (Youssef et

al., 2021). According to Quaife et al. (2020) in a Kenyan informal settlement reported similar results, estimating that control measures reduced physical encounters by 62 percent and non-physical contacts by 63 percent or 67 percent, depending on the pre-COVID-19 comparison matrix utilized. COVID-19 social distance control measures, he finds, have had a significant influence on direct encounters and thereby transmission.

### 4.4.4 Human mobility restrictions of COVID-19 Preventive Measures

The section provides the analysis based on the fourth objective, which was to determine the influence of human mobility restrictions COVID-19 preventive measures on utilization of healthcare services among pregnant women and caregivers with children. The parameters used to analyse human mobility restrictions included travel time (curfew), stay at home guideline, and lockdown. Table 4.7 presents the findings.

**Table 4.7:**

***Human Mobility Restrictions of COVID-19 Preventive Measures and Healthcare Services Utilization***

| COVID-19 Related Human Mobility Restrictions | Yes N(%) | No N(%) | Chi-square | p-value |
|---|---|---|---|---|
| No movement past restricted hours | 248(68.1) | 116(31.9) | 53.29 | 0.0001 |
| Stay at home directive when feeling mild illness | 113 (31.0) | 251 (69.0) | 90.25 | 0.0001 |
| Closure of borders and movement in between areas and counties | 325 (89.3) | 39 (10.7) | 88.36 | 0.0001 |

Majority 248 (68.1 %) of the respondents confirmed that there were no movement past restricted hours. It implies that most people adhered to MoH COVID-19 preventive guidelines to limit movement past the restricted hours. The findings confirm the statement made by Bajardi et al. (2011) that in response to pandemic threats; several countries consider and implement measures to limit human mobility movements as one

of their mitigation strategies. However, this might be restrictive, specifically for pregnant women and caregivers with babies below age 2-year-old who might require emergency medical care at certain facilities. Goyena et al. (2019) also re-affirm the observation that prohibitions on human mobility are contentious not only because of their negative economic effects, but also because of the uncertainty about their efficacy in combating the epidemic. Further, Quaife et al. (2020) also support this that the curfews have limited providers' freedom to go to health-care facilities to provide treatment for women and new-borns.

On the contrary, 251 (69.0 %) respondents averse to stay at home directive when feeling mild illness. This means that despite the COVID-19 preventive measures put in place; people still found it hard to stay at home for mild illness cases. However, this may not necessarily mean that they could contravene stay at home directives for mild illnesses and instead visit healthcare facilities. Despite access to medical care being a basic human right, Roberton et al. (2020) emphasised that the burden put on healthcare systems worldwide by the COVID-19 pandemic has in affected primary care provision for many people.

Three hundred and twenty-five (89.3 %) respondents confirmed the closure of boarders and movement in between areas as well as counties, representing a mean of 3.77 ±1.12. The closure of certain hampers the movement of pregnant women and caregivers of babies below two years who might seek healthcare services from neighbouring areas, which have since then been closed. Barbisch et al. (2015) noted that there has been extensive consideration of the efficacy of lockdown interventions to prevent an outbreak from spreading because of a rare infectious agent where no vaccine is

available. The impact of lockdown on healthcare utilisation is likely to be severe as those seeking healthcare from areas under lockdown might find it difficult to access and receive the services they require.

Human mobility restriction also emerged as a potential barrier to health care utilization. Some of the respondents noted that it was difficult to make referrals during curfew. Some of the respondents noted that some women decided to give birth at home due to fear and lack of transport during curfew hours. It was also noted that emergency services were affected especially for cross county referrals. A COVID-19 test was required before a patient is attended to resulting in delays. A respondent cited:

> "… *Patients fear to go to the health facility past curfew hours for fear of being arrested. It is also almost impossible for patients to get referrals during curfew hours. This has led to more deaths and severe sickness in most patients…"*
>
> (KII, 09, Male, Nurse)

> *"… Most of the people are staying at home whether experiencing mild illness or chronic illness. As a result, most have experienced poor health outcome due to delay in seeking care…"*
>
> (KII, 16, Female, Nurse)

Overall, the chi-square results show that there was a significance difference ($P<0.001$) in responses by respondents in every category of 'Yes' and 'No' for the influence of human mobility restrictions of COVID-19 preventive measures on utilization of health care services on the utilisation of healthcare services.

The results are related to a letter by Pakpour et al. (2020) to The Conversation that

observed that e tight movement restrictions introduced around the world to curb the spread of the novel coronavirus disease have had far-reaching consequences more especially on access to healthcare. Bhatt, et al. (2021) recorded decrease in physician consultation, volumes of hospital admissions decreased for other diseases in Germany after restricted movement was implemented. Quaife et al. (2020) in a research on Kenya informal settlement estimated that control measures reduced physical contacts by 62% and non-physical contacts by either 63% or 67%, depending on the pre-COVID-19 comparison matrix used. He concludes that COVID-19 restricted movement as control measures have had a large impact on direct contacts and therefore transmission.

### 4.5 Bivariate Analysis

The assessment conducted correlation analysis to determine the relationship between the independent variables of social stigma surrounding COVID-19, communication of COVID-19 preventive measures, social distancing COVID-19 preventive measures, and human mobility restrictions COVID-19 preventive measures, and the dependent variable of utilisation of healthcare services. Table 4.8 presents the findings.

**Table 4.8:**

***Summary of Bivariate Analysis Results***

| | | Utilisation of Healthcare | Social stigma | Communication | Social distancing | Human mobility |
|---|---|---|---|---|---|---|
| **Utilisation of healthcare** | Pearson Correlation | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| | Sig. (2-tailed) | 364 | 364 | | | |
| **Social stigma** | N | -.407 | .482* | -.602** | -.589** | |
| | | 0.512 | .068 | .0001 | .0001 | |
| | Pearson Correlation | 364 | 364 | 364 | | |
| **Communication** | Sig. (2-tailed) | .631** | -.574* | -.662** | | |
| | N | .0001 | 0.076 | .0001 | | |
| | | 364 | 364 | | | |
| **Social distancing** | Pearson Correlation | -.314** | -.064 | | | |
| | Sig. (2-tailed) | .0001 | 0.526 | | | |
| | N | 364 | | | | |
| **Human mobility** | | -.606** | | | | |
| | Pearson Correlation | .001 | | | | |
| | Sig. (2-tailed) | | | | | |
| | N | | | | | |
| | Pearson Correlation | | | | | |
| | Sig. (2-tailed) | | | | | |

**Correlation is significant at the 0.01 level (2-tailed)
* Correlation is significant at the 0.05 level (2-tailed)

The findings presented in Table 4.8 shows that of social stigma and utilisation of healthcare services showed a negative association, ($r = -0.407$, $p > 0.05$), but it was not scientifically significant. This is because of the personal, community, and facility-based stigmas that pregnant women and caregivers with children under 2 years old experience as they seek healthcare services. It implies that when social stigma surrounding COVID-19 escalates in the community, then there is a lower chance of pregnant women

and caregivers with children under 2 years seeking healthcare services. Tiziana et al. (2020) affirm that stigma has been correlated with inadequate rates of awareness and fear of casual communication in the workplace. However, the correlation is moderate compared to other factors that bar pregnant women and caregivers from seeking healthcare services during times of COVID-19.

Communication of COVID-19 preventive measures had a positive and scientific significant correlation with healthcare utilisation as represented by ($r=0.631$, $p<0.001$). This implies that the medium of communication, type of message, and data reporting concerning COVID-19 had a positive influence on utilization of healthcare services among the respondents. Initially, pregnant women and caregivers of children below 2 years of age were reluctant to seek healthcare. However, they are currently more informed based on the information they are receiving from media.

Lin, (2020) suggested that the fear and stigma are likely to be minimized with the right information and awareness shared on social media. While Oluoch-Aridi et al. (2020) approximately half acknowledged being able to receive health care, little less than half (40 percent) were hesitant to visit health care facilities due to fear, stigma, and a lack of proper COVID-19 preventive measures at the institutions. This is consistent with the findings of a research done in West Africa during the Ebola outbreak, which revealed that the outbreak interrupted services and fecundity.

Social distancing was established to have a negative correlation and scientific significant with the utilisation of healthcare services ($r =-0.314$, $p<0.0001$). This implies that the more the government urged households and communities to observe

social distancing the lower the number of pregnant women and caregivers with children below the age of two years old utilized of healthcare services during the first peak of COVID-19 pandemic. As much as these are the containment measures put in place by the MoH, more sensitization is still desired so that people should not shy away from seeking medical care because of the fear of social distancing. According to Kotlar et al. (2021), to ensure social distancing hospitals regulated the number of individuals in each room and the length of their stay, as well as postpartum stays. This mitigation, however, had a negative influence on access to and quality of care.

Further, the restrictions of human mobility showed a negative correlate and scientific significant at $r = -0.606$, $p > 0.0001$ with utilization of healthcare services among pregnant and caregivers with children under 2 years. This means that the impact of travel time (curfew), stay at home, and lockdown has significantly derailed the uptake of healthcare services. Pregnant women and mothers with babies below two years have found a lot of difficulty in accessing healthcare during these times of movement restrictions. Some of them have resorted to staying at home, even at the time when they require urgent medical attention. The findings concur with Quaife et al. (2020) that stay at home restriction has profoundly hindered, or even made impossible, routine prenatal visits to an obstetrician. The findings were contrary with those of Oluoch-Aridi et al. (2020) who found less than half of women reported reduced access due to the mandated lockdown and curfews. Some of the reduced access was caused by new hospital restrictions restricting women's access to the health centre. However, her findings were similar to our study for not seeking care for mild diseases. In her study Oluoch-Aridi et al. (2020) stated that due to the risk of contracting COVID-19, these modifications resulted in hospital regulations dictating that certain normal procedures, such as growth

monitoring, were unimportant during this time.

### 4.6 Model Summary

The hierarchical regression model was used to determine factors influencing health care service utilization among pregnant women and caregivers with children during COVID-19 pandemic in Migori County. The four key independent variables of this study comprise social stigma surrounding COVID-19, communication of COVID-19 preventive measures, social distancing COVID-19 preventive measures, and human mobility restrictions COVID-19 preventive measures. The corresponding dependent variable is the utilisation of healthcare services. The quantitative data were analysed using a linear regression model as per the objectives and research questions.

**Table 4.9:**

***Model Summary for Healthcare Services Utilisation***

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .823[a] | .6773 | .6096 | .43825 |

Predictors: (Constant), social stigma, communication, social distancing and human mobility restrictions

The regression results presented in table 4.9 show that 60.96 % of the total variations in the healthcare systems utilisation can be explained by variability in four factors under analysis of this assessment, which is adjusted r-squared = 0.6096. The remaining 39.04 % is explained by other factors not incorporated in this analysis. The standard error of estimate 0.43825 indicates the average deviation of the independent variables from the line of best fit.

**Table 4.10:**

***Analysis of Variance (ANOVA) for Healthcare Services Utilisation***

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 75.672 | 4 | 18.918 | 76.402 | .001[b] |
| | Residual | 105.828 | 359 | .295 | | |
| | Total | 181.500 | 363 | | | |

a. Dependent Variable: Healthcare services utilisation
b. Predictors: (Constant), social stigma, communication, social distancing and human mobility restrictions

A multiple was done on the four independent variables of social stigma, communication, social distancing, and mobility restrictions to test their combine influence on utilization of healthcare services. The regression outputs presented in table 4.10 constitute all the four variables for this analysis found to be valid $F_{(4,299)} = 76.402$, $P < .005$). This implies that all the four independent variables in this assessment are significant or could be accepted in explaining health care utilization among pregnant women and mother (caregivers) with children under two years during COVID-19 pandemic between April and August 2020 in Rongo Sub-County in Migori County.

**Table 4.11:**

***Regression Weights for Healthcare Services Utilisation***

| Model | | Unstandardized Coefficients B | Unstandardized Coefficients Std. Error | Coefficients Standardized Coefficients Beta | t | Sig. |
|---|---|---|---|---|---|---|
| 1 | (Constant) | .045 | .068 | | .031 | .128 |
| | Social stigma_ | -.037 | .023 | -.029 | .691 | 0.0001 |
| | Communication | .086 | .017 | .077 | 2.753 | 0.0001 |
| | Social distancing | -.052 | .019 | -.046 | 3.201 | 0.0001 |
| | Human mobility restrictions | -.054 | .032 | -.038 | 4.702 | 0.0001 |

a. Dependent Variable: Healthcare services utilisation

The results presented table 4.11 indicate that the constant was not significant since it has a p-value = 0.128 which is greater than 0.05. Controlling for communication, social distancing and human mobility restrictions, there is a significant statistical association between social stigma (p-value < 0.0001) and utilization of health care services by pregnant women and caregivers with children under two years. Controlling for social stigma, social distancing and human mobility restrictions, there is a significant statistical association between communication (p-value < 0.0001) and utilization of health care services by pregnant women and caregivers with children under two years. Controlling for communication, social stigma and human mobility restrictions, there is a significant statistical association between social distancing (p-value < 0.0001) and utilization of health care services by pregnant women and caregivers with children under two years. Controlling for communication, social distancing and social stigma, there is a significant statistical association between human mobility restrictions (p-value < 0.0001) and utilization of health care services by pregnant women and caregivers with children under two years. It can be inferred from the findings that the study variables under investigation are critical in determining healthcare services utilisation. Further, it implies that healthcare services utilisation functions better if the variables in this assessment are factored besides other variables left out in this analysis. This is also supported by results in table 4.7 that indicate that the assessment variables contribute to 60.96 % of healthcare services utilisation. Hence, the assessment model can be presented as follows;

Utilization (Y) = $0.000 + -0.029X_1 + 0.077X_2 + -0.046X_3 + -0.038X_4$

Based on the results, the Y-intercept ($\beta_0$=0.000) indicates that holding the independent variables at a constant, the healthcare services utilisation will not take place among

pregnant women and mother (caregivers) with children under two years during COVID-19 pandemic in Rongo Sub-County in Migori County. The results on social stigma ($X_1$, $\beta_1$= -0.029, p=0.001) means that a unit change in social distancing will reduce the utilisation of healthcare services by 2.9 %. The reduction is statistically significant at 5 % significance level.

Findings on communication ($X_2$, $\beta_2$= 0.077, p=0.001) implies that a unit change of $X_2$, will increase the level of healthcare services utilisation by 7.7 % at that increase is statistically significant at $p<0.05$. However, the results on social distancing ($X_3$, $\beta_3$= -0.046, p=0.001) implies that a unit change of $X_3$ will reduce the level of healthcare services utilisation by 4.6 %, and it is statistically significant at $p<0.05$. Finally, human mobility restrictions ($X_4$, $\beta_4$= -0.038, p=0.001) implies that a unit change in $X_4$ lowers the level of healthcare services utilisation by 3.8 %, and it is statically significant at $p<0.05$.

The results are similar to Roberton et al. (2020) observation that women have experienced difficulty in finding transportation to health facilities when starting labour, as well as physical and verbal police abuse for going to health facilities past curfew hours. Further, they are pertinent to Quaife et al. (2020) assertion that if after curfew, a woman needs to step outside; she requires a letter from the chief. Such letters can be hard to receive and if a woman does not have it, local authorities will bully her. Despite the curfew, marginalized women face greater challenges. For example, disabled people have a time that is much more difficult traveling and receiving resources. The curfews have limited providers' freedom to go to health-care facilities to provide treatment for women and new-borns.

This results agree with Oluoch-Aridi et al. (2020) who carried out research on COVID-19 amongst women in informal settlement and realized that less than half of women reported reduced access to health facilities due to fear of contracting Coronavirus. Same argument was advanced by Luo et al. (2021) in China which observed that inpatient and outpatient health services utilization in China declined significantly after the SARS-CoV-2 outbreak, likely due to changes in patient and provider behaviours, suspension of health facilities or their non-emergency services, massive mobility restrictions, and the potential reduction in the risk of non-SARS-COV-2 diseases. Additionally, a study in Nepal by Singh et al. (2021) showed that most participants shared their experience of being worried and anxious about COVID-19 and reported a lack of awareness, misinformation, and stigma as major factors contributing to the spread of COVID-19. Maternity services, immunization, and supply of essential medicine were found to be the most affected areas of health care delivery during the lockdown.

# CHAPTER FIVE

# SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

## 5.1 Introduction

The chapter summarises the study findings as per the research objectives. Conclusions and recommendations were also drawn to improve healthcare services utilisation among pregnant women and caregivers with babies below two years old. Areas for further studies have also been suggested.

## 5.2 Summary of Findings

The purpose of the assessment was to determine factors influencing health care utilization among pregnant women and mother (caregivers) with children under two years during COVID-19 pandemic between April and August 2020 in Rongo Sub-County in Migori County. Specifically, to ascertain social stigma surrounding COVID-19, communication of COVID-19 preventive measures, social distancing COVID-19 preventive measures, and human mobility restrictions COVID-19 preventive measures influence on healthcare services utilisation. Based on the four objectives of this assessment, the following findings were drawn.

## 5.3 Social stigma surrounding COVID-19

The study established that social stigma surrounding COVID-19 negatively influences the utilisation of healthcare services among pregnant women and caregivers with children two years and below. Some of these factors involved personal based stigma (, community-based stigma and facility-based stigma. Bivariate analysis ascertained that social stigma and utilisation of healthcare services showed a moderate negative association, ($r = -0.412$, $p > 0.05$). Further, multivariate analysis showed that there was

also a significantly negative association between social stigma and healthcare services utilisation ($\beta_1$= -0.029, p=0.001).

### 5.4 Communication of COVID-19 preventive measures to general population

The assessment ascertained that communication of COVID-19 preventive measures positively influences the utilisation of healthcare services. Some of the parameters involved medium of communication, type of message, and data reporting. Bivariate analysis showed that communication of COVID-19 preventive measures has a positive link with healthcare utilisation at (r =0.631, p>0.01). Multivariate analysis also shows that there was a statistically positive association between communication and utilisation of healthcare services ($\beta_2$= 0.077, p=0.001).

### 5.5 Social distancing COVID-19 preventive measures

The analysis showed that social distancing COVID-19 preventive measure negatively influences healthcare services utilisation. Some of the characteristics analysed comprised community health workers (CHWs) visits for community-facility referrals, restriction of number of people in vehicle, and halting of non-essential services as well as reducing of crowding in facilities. Bivariate analysis showed that social distancing COVID-19 preventive measures have a negative relationship with the utilisation of healthcare services (r = -0.314, p>0.01). Further, multivariate analysis indicates that was a statistically negative relationship between social distancing and utilisation of healthcare services ($\beta_3$= -0.046, p=0.001).

### 5.6 Human mobility restrictions COVID-19 preventive measures

Descriptive analysis showed that human mobility restrictions of COVID-19 preventive

measures negatively influence utilisation of healthcare services. Some of the attributes analysed included no movement past restricted hours, stay at home directive when feeling mild illness, and closure of boarders and movement in between areas as well as counties. Bivariate analysis established that human mobility restrictions of COVID-19 preventive measures have negative influence on utilisation of healthcare services ($r = -0.606$, $p>0.01$). Moreover, the multivariate analysis proved that there was a significantly negative association between human mobility restrictions of COVID-19 preventive measures and utilisation of healthcare services ($\beta_4= -0.038$, $p=0.001$).

### 5.7 Conclusion

Based on the results obtained from the first objective, it can be inferred that social stigma surrounding COVID-19 preventive measures have influenced the utilisation of healthcare services in some negative way. The factors included personal based stigma, community-based stigma, and facility-based stigma. Social stigma attributes have significantly influenced the uptake of healthcare services among pregnant women and caregivers with children under two years of age to a negative extent. These stigmas have had a reduction in health seeking behaviour in health facilities in Rongo Sub County. Sensitization should be done through the community healthcare workers (CHWs) and other digital medium of communications.

On the second objective, communication of COVID-19 preventive measures has had positively influenced healthcare services utilisation. The factors analysed comprised medium of communication, target audience, type of message, and data reporting. Communication has significantly influenced the utilisation of healthcare services. The communication that was heavily consumed was social media and other platforms that

can be manipulated for fake news leading to misinformation. The County's Department of Healthcare should use local and vernacular radio stations such as KBC, Ramogi FM, and Lolwe FM among others to teach people more about the COVID-19 preventive measures and uptake of medical care.

On the third objective, social distancing measures have negatively influenced healthcare services utilisation. The measures that influence this involved household social distancing, community social distancing, and facility social distancing. Social distancing therefore has a significantly negative influence on healthcare services utilisation. Alternative strategies such as barrier method reduces social distance but prevent direct contact should be assessed alongside social distancing.

Based on the fourth objective, human mobility restrictions have negatively influenced the uptake of healthcare services. Human mobility measures involved travel time (curfew), stay at home guideline, and lockdown. When human restrictions are enforced, people find it difficult to travel and access healthcare services they may need. Therefore, human mobility restrictions are a significantly negative influence to the uptake of healthcare utilisation. People should not be left to stay at home when there is critical need for them to receive healthcare. Curfew orders should be waivered to cater for such emergencies. The county government should also procure more ambulances or lease the services of local transport providers to transport those in urgent need of care to the nearest facilities, as ordinary transportation is curtailed during curfews and lockdowns.

Theoretically, its assessment concluded that the four independent variables explored in

this study have either negative or positive influence on the healthcare services utilisation. This probably takes place more often in most child and maternal healthcare facilities. Further, few studies have been conducted at the county level to determine factors influencing health care utilization among pregnant women and mother (caregivers) with children during COVID-19 pandemic. Hence, the study will provide empirical evidence to guide counties with similar challenges to adequately and efficiently tackle the gaps.

### 5.8 Recommendations

The following recommendations have been drawn based on the study findings.

i. Migori County Department of Health should sensitize people against personal, community, and facility-based stigma as this negatively influence the uptake of healthcare services.

ii. More sensitization strategies, including use of local and vernacular radio stations, should be rolled out by the County government of Rongo, especially to manage misuse social media platform to disseminate false or unverified information about COVID-19 preventive measures.

iii. The County government of Rongo through the Department of Policy Planning and Health Financing should also mobilise funds by local arrangements and international donor funding to build more primary healthcare facilities to communities that lack such facilities near them

iv. The County Government of Migori should encourage the pregnant women and caregivers with babies below two years to seek medical care, whenever there is urgency.

### 5.9 Suggestions for Further Research

Research should further be directed on factors influencing healthcare services utilisation among adults aged 60 years and older in Migori County. This forms and interest group for research as the risk of dying from COVID-19 increases with age. An assessment of how vaccine has impacted utilization of health services among pregnant women.

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## APPENDIX I: INFORMED CONSENT

Kenya Methodist UniversityP. 0 Box 267-60200
MERU, Kenya

**SUBJECT: INFORMED CONSENT**

**Dear Respondent,**
My name is **Doreen Achieng Baraza Awino,** I am a M.Sc. student from Kenya Methodist University. I am conducting a study titled: **Factors influencing health care service utilizationduring COVID-19 pandemic: A case of health facilities in Migori County** The results willbe used to improve health services in Kenya and other Low-income African countries.Consequently, the increased efficiency of health care services will benefit countries, communities and individuals. This proposed study is vital to enhancing health systems because it will create new information in this field, encouraging decision-makers to make evidence- based decisions.

**Procedure to be followed**

Involvement in the study will mandate that I ask you a few questions and also access all department of the hospital to resolve the six pillars of the health care system. I will register your information in a checklist for the questionnaire.

You are entitled to refuse taking part in this report. You won't be penalized or punished for notenrolling in the research and your choice won't be held against you and won't impact the services you receive.

Please note involvement in the research is optional. You can ask study-related questions at anytime. You may refuse to answer any questions or you may terminate an interview at any time.You can also cease to be in the study at any time without any repercussions for the services that you receive.

**Discomforts and risks**

A few of the questionnaire items you are going to be asked are about an intimate topic, and may make you uncomfortable. If that happens; if you may choose not to answer. You can alsostop the interview whenever you want. Completing the interview may take around 40 minutes

**Benefits**

You will help us to strengthen health systems in Kenya and other low-in-coming countries in Africa by you participating in this study. As a result, the improved quality of health care services will benefit countries, communities and individuals. This field attachment is vital to improving health systems because it will create new information in this sector which will empower decision-makers to make evidence-based decisions.

**Rewards**

Anyone who chooses to participate in the study is will not be rewarded.

**Confidentiality**

The interviews will be held in a private setting with adherence to COVID-19 protocols. Thequestionnaire will not record your name and will be kept in a secure location.

**Contact Information**

If you have any questions you may contact the following supervisorsDr. Wanja Tenambergen

Email: wanja.tenambergen@kemu.ac.keMobile: +254 726 678020

**Musa Oluoch**

Email: musa.oluoch@kemu.ac.keMobile: +254 722483909

**Participant's Statement**

The above statement concerning my involvement in the survey is apparent to me. I have beengiven an opportunity to ask questions, and to my satisfaction, my questions were answered. My participation in this research is completely voluntary. I recognize my records will be considered secret and I can exit the research at any point. I acknowledge that at my workplace,whether I decide to leave the study or not, I will not be victimized and my choice will not change the way I am viewed at my place of employment.

Name of Participant…….
Date…….
Signature…….

**Investigator's Statement**

I, the undersigned, have explained to the volunteer in a language s/he understands theprocedures to be followed in the study and the risks and the benefits involved.

Name of
Interviewer……Date…….
Interviewer Signature……

## APPENDIX II: PATIENT QUESTIONNAIRE

### SECTION A: SOCIO-DEMOGRAPHIC INFORMATION

**Age** ☐

**Marital status**

Single ☐ Married ☐ Separated ☐ Divorced ☐ Widowed ☐

Others specify ……

**Occupation**

Paid employee ☐ Small business/service ☐ Farmer ☐ House wife ☐

Others specify …….

**Husband Occupation**

Paid employee ☐ Small business/service ☐ Farmer ☐ Unemployed ☐

**Level of Education**

Primary ☐ Secondary ☐ College/higher ☐ No formal Education ☐

**Husband Level of Education**

Primary ☐ Secondary ☐ College/higher ☐ No formal Education ☐

**Home visit by CHW** ☐

**Number of children** ☐

**Time taken to reach facility** ☐

**Means of transport to facility …….**

(ANC, PNC ANC, PNC, child illness, Immunization, and Facility – based Delivery)

Q2. In the last five months have you missed SOME of the health services you required?

(ANC, PNC ANC, PNC, child illness, Immunization, and Facility – based Delivery)

Q.3 Where do you receive treatment?

Public ☐ (Government facility: health center, dispensary, hospital)
Private ☐ (NGO/FBO/Private owned)

Q.4 What services do you normally get at the facility?
In-patient ☐
Outpatient ☐

**SECTION C: COVID-19 RELATED SOCIAL STIGMA**

Q.5 To what extent do you agree to the following. (Please tick in the appropriate box)

| **COVID-19 Related Social Stigma** | **Yes** | **No** |
|---|---|---|
| **Personal based stigma** | | |
| I am always afraid that I will get Covid-19 when I seek health services from health workers | | |
| I cannot live or work close to someone who has recovered from COVID-19 | | |
| I dread the thought that I could become a COVID-19 patient | | |
| I won't let people know if there is a person with COVID-19 in my family | | |
| **Community based stigma** | | |
| The community will discriminate me for visiting health facilities during covid-19 | | |
| My neighbors are often speaking negatively of people who seek health services during this time of COVID-19 | | |
| My religious often advise us against seeking seek health services during this time of COVID-19 | | |
| People with COVID-19 should not be allowed to remain in their homes | | |
| **Facility based stigma** | | |
| Health facilities is where people are getting COVID-19 | | |
| I often afraid of visiting health facilities during this period of Covid-19 | | |
| The health personnel often treat people with suspicion when you seek health care services | | |
| I always feel discriminated when screened before entering the health facility | | |

## SECTION D: COVID-19 RELATED COMMUNICATION

Q.6 Which media platform do you rely for your regular updates on current COVID-19 information (You can choose more than one media platform)?

i) Radio
ii) Television
iii) Printed Media
iv) Social Media
v) Informal media (Chief, hospital)
vi) Others

Q.7 To what extent do you agree to these statements: (Please tick in the appropriate box)

| **COVID-19 Related Communication Questions** | **Yes** | **No** |
|---|---|---|
| **Medium of communication** | | |
| Messaging from campaigns are not relevant to me | | |
| Most mainstream media are not reliable | | |
| There is a lot of misinformation on social media | | |
| **Type of message** | | |
| People were discouraged from visiting health facilities | | |
| **Data Reporting** | | |
| Daily data reports from MoH have negatively impacted my health seeking behavior | | |

## SECTION E: SOCIAL DISTANCING

Q.8 To what extent has social distancing affected health seeking among patients: (Please tick in the appropriate box)

| **COVID-19 Related Social Distancing Questions** | **Yes** | **No** |
|---|---|---|
| CHW house hold visits for community-facility referrals | | |
| Restriction of number of people in vehicles | | |
| Community based social distancing during facility outreach | | |
| Halting of non-essential services and reducing of crowding in facilities | | |

| | | |
|---|---|---|
| Mandatory wearing of mask and keeping 2 meters at each service point in health facilities | | |

**SECTION F: HUMAN MOBILITY RESTRICTION**

Q.9 To what extent has human mobility restriction affected you from seeking health services:

| COVID-19 Related Human Mobility Restriction Questions | **Yes** | **No** |
|---|---|---|
| No movement past restricted hours | | |
| Stay at home directive when feeling mild illness | | |
| Closure of borders and movement in between areas and counties | | |

## APPENDIX III: KEY INFORMANT INTERVIEW

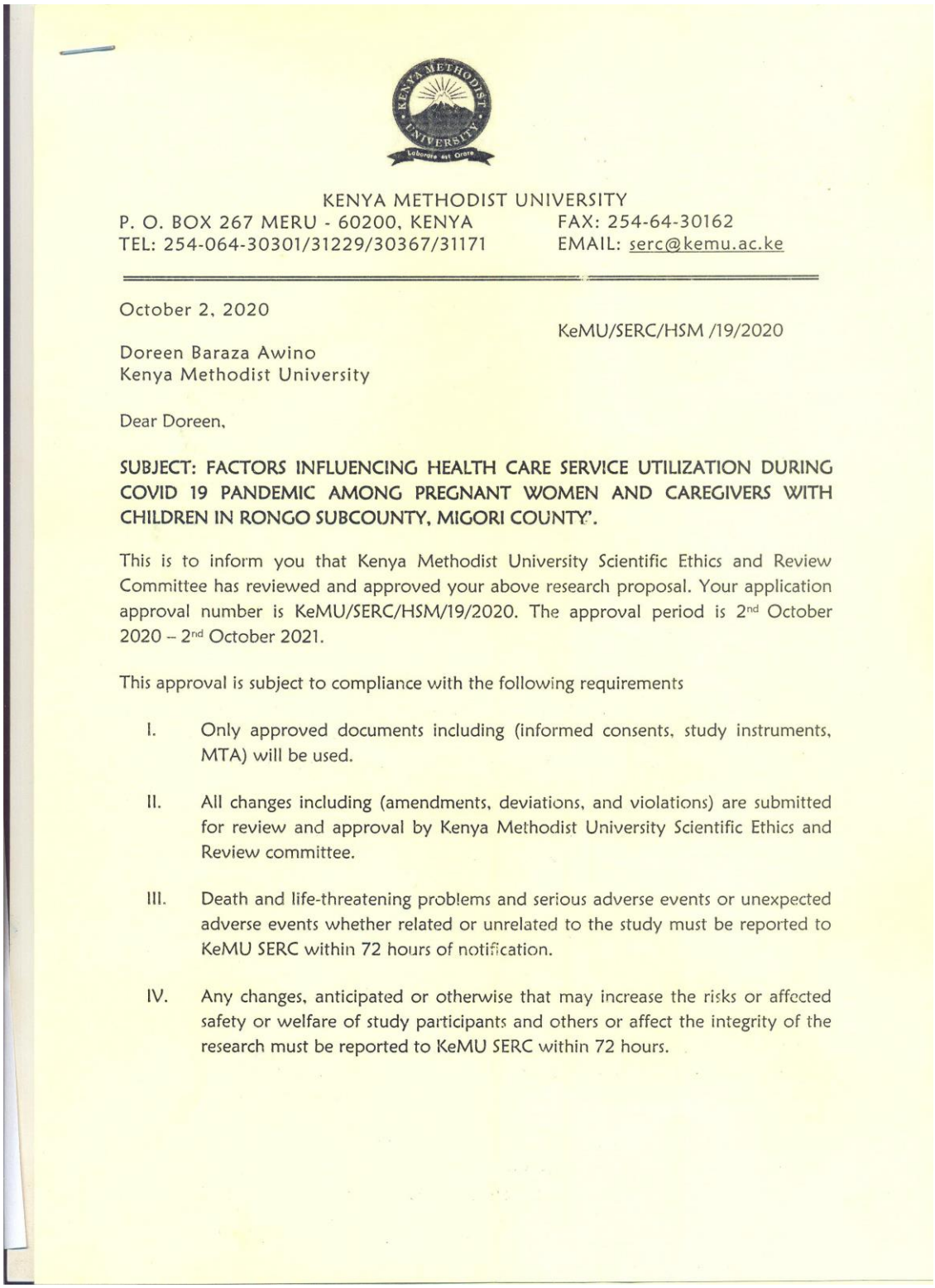
Gender: Male ☐ Female ☐

1. Where or which department do you work

   Health Facility ☐ Community ☐
2. As a frontline healthcare provider have you experienced the following forms of stigma?Personal-based stigma, community-based stigma, facility-based stigma
3. How have the three forms of stigma affected your ability to provide care?
4. How have the three forms of stigma affected the ability of patients to seek care in healthfacilities?
5. What medium of communication do you use to reach patients during this covid-19 andwhat is their impact?
6. What types of messages have been communicated to the community?
7. How has this communication affected health care service utilization?
8. How have the following forms of social distancing affected health seeking among patients?Facility based social distancing, community based social distancing, and household based social distancing.
9. In order to prevent further spread of COVID-19, the government introduced humanmobility restrictions. How have the following restrictions affected utilization of healthcare services? Curfew, stay at home directive and lockdown of some places
10. To what extent has the overall COVID-19 preventive measures affected emergency andreferral services

## APPENDIX IV: ETHICAL APPROVAL

**KEMU**



KENYA METHODIST UNIVERSITY
P. O. BOX 267 MERU - 60200, KENYA
TEL: 254-064-30301/31229/30367/31171
FAX: 254-64-30162
EMAIL: serc@kemu.ac.ke

October 2, 2020

KeMU/SERC/HSM /19/2020

Doreen Baraza Awino
Kenya Methodist University

Dear Doreen,

**SUBJECT: FACTORS INFLUENCING HEALTH CARE SERVICE UTILIZATION DURING COVID 19 PANDEMIC AMONG PREGNANT WOMEN AND CAREGIVERS WITH CHILDREN IN RONGO SUBCOUNTY, MIGORI COUNTY'.**

This is to inform you that Kenya Methodist University Scientific Ethics and Review Committee has reviewed and approved your above research proposal. Your application approval number is KeMU/SERC/HSM/19/2020. The approval period is 2nd October 2020 – 2nd October 2021.

This approval is subject to compliance with the following requirements

I. Only approved documents including (informed consents, study instruments, MTA) will be used.

II. All changes including (amendments, deviations, and violations) are submitted for review and approval by Kenya Methodist University Scientific Ethics and Review committee.

III. Death and life-threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to KeMU SERC within 72 hours of notification.

IV. Any changes, anticipated or otherwise that may increase the risks or affected safety or welfare of study participants and others or affect the integrity of the research must be reported to KeMU SERC within 72 hours.

V. Clearance for export of biological specimens must be obtained from relevant institutions.

VI. Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. Attach a comprehensive progress report to support the renewal

VII. Submission of an executive summary report within 90 days upon completion of the study to KeMU SERC.

Prior to commencing your study, you will be expected to obtain a research license from National Commission for Science, Technology and Innovation (NACOSTI) https://oris.nacosti.go.ke and also obtain other clearances needed.

Yours sincerely,

KEMU SERC

Dr. A. WAMACHI
Chair, SERC

# KENYA METHODIST UNIVERSITY

**P. O. Box** 267 Meru - 60200, Kenya
**Tel:** 254-064-30301/31229/30367/31171
**Fax:** 254-64-30162
**Email:** info@kemu.ac.ke


**DIRECTORATE OF POSTGRADUATE STUDIES**

October 9, 2020

Commission Secretary,
National Commission for Science, Technology and Innovations,
P.O. Box 30623-00100,
NAIROBI.

Dear sir/ Madam,

**RE: DOREEN BARAZA OWINO (HSM-3-0279-1/2019)**

This is to confirm that the above named is a bona fide student of Kenya Methodist University, Department of Health Systems Management undertaking a Degree of Master of Health Systems Management. She is conducting research on, '***Factors influencing health care service utilization during COVID 19 pandemic among pregnant women and caregivers with children in Rongo Subcounty, Migori County'.***

We confirm that her Research proposal has been defended and approved by the University.

In this regard, we are requesting your office to issue a permit to enable her collect data for her research.

Any assistance accorded to her will be appreciated.

Thank you.

Dr. John Muchiri, PHD.
Director Postgraduate Studies

## APPENDIX V: MIGORI COUNTY

**MIGORI COUNTY HEALTH DEPARTMENT**

Telegrams:
Telephone:
Email:elizabethmgamb@gmail.com

COUNTY DIRECTOR FOR HEALTH
MIGORI
P O BOX 1045-1045
SUNA –MIGORI

CDH/GC/VOL 3/38/2020

13th Nov 2020

**To**

**MOH Rongo Subcounty ,**

**Subcounty Community Strategy Focal person**

**Lwala community Alliance**

**RE: RESEARCH DATA COLLECTION BY DOREEN BARAZA AWINO**

**(HSM 3-0279-1/2019)**

The above named is an Employee of Lwala Community alliance and a student at Kenya Methodist University, Department of Health Systems Management, undertaking a Degree of Master of Health Systems Management. She is conducting a research on: - **'Factors influencing healthcare service utilization during COVID 19 Pandemic among the pregnant women and care givers with children under two years in Rongo Sub County, Migori County'.**

She has successfully defended her research proposal and has been approved to collect her data. Have reviewed all her documents and she has been allowed to collect her data within in the subcounty . Allow her confirm the clients lists from the facilities with the help of the facility CHEW and CHWS She will follow up with the clients within the community for data collection

It is in this respect that I am requesting your office to accord her the necessary assistance she may need

Thanks for your continued support

**Tom Odhong**

**For : Director Public health Management**

**MIGORI COUNTY**

DEPUTY DIRECTOR
PUBLIC HEALTH
13 NOV 2020
P. O. Box 202 SUNA,
MIGORI COUNTY
Email: ndangakennedy@gmail.com

## APPENDIX VI: HOMA BAY (Pre-test)

**MINISTRY OF HEALTH**

Telegrams: "MEDICAL" Homa Bay
Telephone: 059-21039
When Replying Please Quote

County Director of Health
Homa Bay County
P.O. Box 52
**HOMA-BAY**

Ref: MOH/HB/CTY/CDH/GEN/VOL

10th November 2020

Chief Executive Officer
Homa Bay County Teaching & Referral
Hospital
P.O. Box 52 – 400300

**HOMABAY**

Dear Sir / Madam

**RE: DOREEN BARAZA AWINO (HSM 3-0279-1/2019)**

The above named is a student at Kenya Methodist University, Department of Health Systems Management, undertaking a Degree of Master of Health Systems Management. She is conductinga research on: - '***Factors influencing healthcare service utilization during COVID 19 Pandemicamong the pregnant women and caraegivers with children in Rongo Sub County, Migori County'.*** She has successfully defended her research proposal and has been approved to collect her data, with pre-test planned to cover 36 randomly selected health workers at Homa Bay CTRH.

It is in this respect that I am requesting your office to accord her the necessary assistance she mayneed

Thank you

Dr. Gordon Okomo
**County Director of Health Services**
**HOMA BAY COUNTY**

## APPENDIX VII: NACOSTI

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION

Ref No: **690910**

Date of Issue: **13/November/2020**

**RESEARCH**

**This is to Certify that Ms. Doreen Achieng Owino of Kenya Methodist University has been licensed to conduct research in Migori on the topic: FACTORS INFLUENCING HEALTHCARE SERVICE UTILIZATION DURING COVID-19 PADEMIC AMONG PREGNANT WOMEN AND CAREGIVERS WITH CHILDREN IN RONGO SUB-COUNTY, MIGORI COUNTY for the period ending: 13/November/2021.**

**ending: 13/November/2021.**

License No: **BAHAMAS ABS/P/20/7627**

**690910**

Applicant Identification

Director General NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION

Verification QR Code

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