# TELEVISION MESSAGES ON COVID-19 PANDEMIC AND VACCINE ADOPTION BEHAVIOUR AMONG YOUTHS IN KIAMBU COUNTY, KENYA

**FAITH NJERI NGURE**

**DOCTOR OF PHILOSOPHY IN MASS COMMUNICATION**

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# Television Messages on COVID-19 Pandemic and Vaccine Adoption Behaviour among Youths in Kiambu County, Kenya

**Faith Njeri Ngure**

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## DECLARATION

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

Signature……..Date…….

**Faith Njeri Ngure**

This Research Thesis has been submitted with our approval as the University Supervisors:

Signature……..Date…….

**Prof. Hellen Mberia, PhD**

**JKUAT, Kenya**

Signature……..Date…….

**Dr. Joseph Muchiri, PhD**

**MKU, Kenya**

## DEDICATION

I dedicate this work to my loving husband Paul Ndichu and my daughter Gianna Ndichu for their immense support. May God bless you all!

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Firstly, I give thanks to God for the provision, strength and granting me a chance to work on this thesis. I thank God for life, health and wonderful family, supervisors, and friends.

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## ACRONYMS AND ABBREVIATIONS

| | |
|---|---|
| **EPPM** | Extended Parallel Processing Model |
| **HBM** | Health Belief Model |
| **MCK** | Media Council of Kenya |
| **MoHK** | Ministry of Health of Kenya |
| **TV** | Television |
| **WHO** | World Health Organization |

## DEFINITION OF OPERATIONAL TERMS

**COVID-19 pandemic** According to World Health Organization (2022b), Corona Virus 2019 (Covid-19) is a highly infectious respiratory illness first reported in Wuhan, China in December 2019. The virus is caused by the novel severe acute respiratory syndrome coronavirus 2 (*SARS-COV-2*).

**Efficacy beliefs** According Janz & Becker (1984); Witte (1992), efficacy are people's cognitive and behavioral responses when confronted with stressful and threatful situations. The beliefs are categorized into perceived response efficacy and perceived self-efficacy. *Perceived response efficacy* reflects an individual's belief in effectiveness of a recommended behavior or action to mitigate a risk. In contrast *perceived self- efficacy* pertains an individual's confidence in their ability to perform the necessary actions to control or manage the risk effective.

**Perceived susceptibility** According Janz & Becker (1984); Witte (1992), perceived susceptibility refers to an individual's subjective assessment of the likelihood or risk of contracting a disease. In the context of COVID-19 Pandemic, it reflects the extent to which individuals believe they are personally vulnerable to infection and potentially exposed to its associated health consequences.

**Perceived severity** According Janz & Becker (1984); Witte (1992), perceived severity refers to individual's assessment of the seriousness and potential consequences of a health risk, such as COVID-19. The degree to which a threat is perceived as severe influences decision-making processes regarding the adoption of preventive and control measures.

**Television COVID-19 messages** According Rooke (2021); Chaiuk & Dunaievska (2020), television COVID-19 messages refer to information disseminated through televised platforms concerning pandemic. Such messages are produced and transmitted in various formats, including news bulletins, documentaries, feature segments and talk show programmes.

**Vaccine adoption behaviour** According to Karijo et al. (2021), vaccine adoption behaviour denotes the observable actions and decision-making patterns exhibited by individuals regarding vaccine uptake, including acceptance, delay hesitancy and rejection.

**Youths** Within the Kenyan legal framework, Article 260 of the Constitution of Kenya defines a youth as an individual aged between 18 and 35 years. This constitutional classification provides legal and policy framework for youth inclusion, representation and targeted socio-economic interventions within the republic of Kenya.

## ABSTRACT

COVID-19 was a major cause of deaths worldwide, with nearly 517 million infections and 6.3 million deaths by May 2022. With the rise of global COVID-19 confirmed cases, death toll and implications of the pandemic, the media, moreover the television was swift in sharing messages of response plan and public health guidelines put in place. These messages swayed public opinion resulting into different patterns of behaviour and for this case adoption or rejection of COVID-19 vaccines. As such, the study aimed at investigating television messages on COVID-19 and adoption behaviour of vaccine among youths in Kiambu County, Kenya. The general objective of the study was to assess the effects of COVID-19 television messages on the vaccine adoption among youths in Kiambu County. The specific objectives were; to investigate the effects of COVID-19 television messages perceived susceptibility on the vaccine adoption behaviour among youths in Kiambu County, Kenya: to analyze the effects of COVID-19 television messages perceived severity on the vaccine adoption behaviour among youths in Kiambu County, Kenya: to examine the effects of COVID-19 television messages perceived response efficacy on the vaccine adoption behaviour among youths in Kiambu County: to find out the effects of COVID-19 television messages perceived self-efficacy on the vaccine adoption behaviour among youths in Kiambu County, Kenya and lastly to determine the moderating effects of demographic factors on the relationship between COVID-19 television messages and the vaccine adoption behaviour among youths in Kiambu County, Kenya. The study was founded on three theories EPPM, HBM which shed light on various message elements in the TV and diffusion of innovation which explained how Covid -19 vaccines gain momentum among youths with time by the help of communication from the television. Further, the study adopted a mixed method methodology, as such, the data was analyzed qualitatively and quantitatively for validity of the study. The qualitative and quantitative data employed cross-sectional research design. Content analysis of YouTube Covid news video from Citizen TV, NTV and KTN was done. Further, out 384 targeted youths, 346 youths participated in the questionaries resulting into 90.1% response rate. Chi square test, ANOVA, odds ratio's, Hierarchical multiple regression statistical tools were used in data analysis. The study found that there was low vaccine uptake among youths, only 42% youths received vaccines. The severity and susceptibility messages had no influence on vaccine uptake while the efficacy belief messages had influence on vaccine uptake behaviour. This elucidates that the threat messages may not always translate to positive or intended behaviour. The main aim of the pandemic messages was to create awareness for positive response thus balancing threat messages with response messages is key. The publics' knowledge of pandemic is shaped by the messages broadcasted by the television and thus intended or unintended behaviour.



**Keywords:** Television COVID-19 messages, COVID-19 pandemic, vaccine adoption, youths, Kiambu County

# CHAPTER ONE

# INTRODUCTION

## 1.1 Background of the Study

COVID-19 is the recent public health global crisis which emerged in December 2019 in China and its spread elevated topics of concern globally (Khanna et al., 2020; Van Damme, 2020). COVID-19 was a major cause of deaths across the globe with estimations of 6.3 million deaths and 517 million infections by May 2022 (WHO, 2022) and over five thousand deaths and three hundred thousand infections in Kenya. According to WHO (2022b), COVID-19 was caused by a severe acute syndrome coronavirus 2 (SARS-COV-2).

The World Health Organization declared the COVID-19 a pandemic in March 2020 with active infections effects cutting across all ages (Hudson & Sprow, 2020). The severity of the virus symptoms ranged from mild to severe, with risks increasing with age. The elderly and people with existing health condition were at higher risk of severity and mortality.

According to Tarakini et al. (2021), the pandemic was more than a health crisis due to its dynamism in affecting different societies and economies. The effects varied from continent to continent and countries to countries due to their exceptional systems, cultures, economy, and development. The impacts, however, informed the governments and partners towards tailoring responses and recovery measures.

The first COVID-19 case was confirmed in Africa in February 2020 and in March 2020 another case was confirmed in Kenya. This led to an urgent need for timely data and evidence for mitigation and monitoring the spread. To respond to the need, the media at large came in aid through covering topics pertaining knowledge on Covid-19, its control measures, behavioural change in response to the crisis, health services, revenue and food security, government responsibility towards pandemic control, emotional well-being of people and coping tactics (de Vere Hunt et al., 2021).

The World Health Organization in its earliest reports acknowledged the virus was new and phenomenal which called for more studies (WHO, 2019). The health professionals, government, publics among other actors struggled to find methodologies of stopping transmissions and cure. The studies done showed, that the virus was transmitted by person-to- person contact and could controlled by social distancing, washing hands, putting on face masks, sanitizing and vaccination (Le et al. 2020; Haynes et al. 2020).

On January 2020 the COVID-19 genetic sequence was shared through Genetic Initiative on Sharing all Influenza Data (GISIAD) which saw major commitment to address the Virus by global pharmaceutical industry by March 2020. In March 2021 Kenya received the first consignment of 1.02 million AstraZeneca vaccine, which saw the Ministry of health launch plans and campaigns in conjunction with the media to vaccinate frontline workers and essential personnel (WHO, 2021) and later in August 2021 mass vaccination.

Zheng et al. (2021), notes that with the rise of global COVID-19 confirmed cases, death toll and mutation of the pandemic, the media and moreover television among other actors was swift in sharing messages on response plan and public health guidelines from the World Health organization (Ranjit et al., 2021). According to De Luca & Calabro (2020), COVID-19 increased in frequency and become more harmful due to globalization and increased contact. Thus, the ability of an individual to understand the control measures put in place was dependent on the television messaging (Singer & Brookings, 2018).

According to Ranjit et al. (2021), during public health emergency such as COVID-19 pandemic, people need information to understand the nature of the disease and safety measures. Individuals consult a variety of sources of information such as traditional media, new media as well as engage in interpersonal communication (Perse & Lambe, 2016). Further, Rothgerber (2020), notes that info seeking is challenging because pandemic information is angled in different nature by the media (Perse & Lambe, 2016). The messaging of COVID-19 information made it difficult for individuals to

make sober decision towards mitigation measures given the quantity and quality of the messages.

Further, the use of internet technology also offered avenues that altered the way individuals handled and discussed the pandemic. For example, studies on COVID-19 intervention used online platforms to create awareness and provide messages aimed at preventing further spread. The pandemic led to unavoidable use of new technologies due to social distancing and lockdown across the globe (de Vere Hunt et al., 2021). According to Zhang et al. (2016), people were exposed to pandemic information by news media, which shaped one's opinion and attitude. The youths' knowledge of the stages of pandemic was shaped by the TV messages (Powell et al., 2015).

Studies conducted on SARS 2003 by Tao (2003): Pearson et al. (2004), found out that knowledge and attitude influences efforts to prevent diseases. Further studies done on public in China revealed that, the public willingness to obey government measures are influenced by the information at hand (Zhong et al. 2020). In support of this Banik et al., (2021), found out that 6 in every 10 youths had knowledge about COVID-19 in Bangladesh. In a similar study conducted in Kenya by Karijo et al. (2021, found out that there was high information consumption by youths and knowledge of COVID-19 symptoms, prevention and coping strategies as aired via different communication channels.

Further MacFarlane & Rocha (2020); Mheidly & Fares (2020); Radu (2020), while communicating on health pandemics people take information as it is, Liang et al. (2020); Chaiuk & Dunaievska (2020); Yoshioka & Maeda (2020), misinformation can influence people's perception and behaviour, psychological disorders inclusive. According to Brindha et al. (2020), the media diffused propaganda, distorted information, rumours and conspiracy theories about the novel pandemic. As such, COVID-19 content consumers were exposed to all sorts of information from different media platforms.

Television stories are exhibited by the existence or deficiency of certain keywords, ordinary phrases, cliched images, sources of evidence, and sentences providing themes that highlights facts or beliefs (Singer & Brookings, 2018). Through their choice of

particular words over others, the television makes certain terms notable for their audiences. As such, these words shape public attitudes and reflects prevailing assumptions about a pandemic (Seale, 2003). Studies have shown that variations in language and terminology can elicit significant differences in perceptions of, and reactions to, pandemics. In this sense, the language used in the news media had the potential to challenge mitigation measures of a pandemic (Radu, 2020; Rothgerber, 2020).

Ophir (2018), asserts television coverage of health pandemics impact how audiences feel about them. Aspects of mediated news items on health pandemics activates certain feelings and thoughts in the audiences' mind leading to stigmatization. Prior studies suggest that individuals use television content as form of heuristics crosscut so as to make sense of complicated issues, as pandemics. This is because people do not have direct experience in coping with them (Shah et al., 2004); Anson et al., 2021). Media airs pandemic events based on number of casualties, number of cases, causes and possible consequences which changes as the issue evolve (Queiroz et al., 2020).

The television defines health crisis, identify the causes, and suggest the remedies put in place which results in different effects. The messages on health crisis sway public opinion especially on causal and control which may result into different patterns of behaviour (Hussain, 2020; Gollust et al., 2019). The television played an essential role in the fight against COVID-19 by airing stories aimed at promoting knowledge levels and control.

According to Ranjit et al. (2021), messages aired on television on health matters had significant and direct influence on public attitude which in turn influenced the vaccine adoption and preventive behaviour. Therefore, the researcher sought to find out the effects of COVID-19 television messages on vaccine adoption behaviour of among youths in Kiambu County, Kenya.

### 1.2 Statement of the Problem

The novelty, severity and spread of COVID-19 pandemic since 2019 December has been a global concern. The pandemic was a major cause of death where in a span of

less than two years; by May 2022 approximately 6.3 million people were reported dead globally (WHO, 2022). In Kenya, there were over three hundred thousand infections and over five thousand deaths (WHO, 2022b). However, with increased awareness on preventive measures and vaccination the deaths were controlled, and new infections prevented.

In March 2021 Kenya received the first consignments of 1.02 million AstraZeneca vaccine, which saw the Ministry of Health launch plans and campaigns in conjunction with the media to vaccinate frontline workers and essential personnel (WHO, 2021). Several other consignments were delivered ever since. The COVID-19 vaccines were free and available in most of the health facilities across the globe (MoHK, 2021b).

However, the uptake of the vaccines was very low. Out of 50 million eligible Kenyans only 31.0% were fully vaccinated (WHO, 2022). A number of reasons were attributed to low adoption, including side effects of the vaccines, poor knowledge, misconceptions associated with vaccines and the nature of messages distributed by the media on the pandemic (Muchiri et al., 2022). As an intervention, most of these factors could only be mitigated by putting in place proper communication strategies. Literature has shown that during public health crisis such as the COVID-19 pandemic, society require information to understand the disease and precautionary measures (Ranjit et al., 2021).

There is evidence that, COVID-19 pandemic triggered production of messages that influenced adaptive and maladaptive behaviour (Karijo et al., 2021; Banik et al, 2021). The messages were produced as news content, talks shows, documentaries, or features (Hanan, 2011). Prior research on H1N1 flu control (Lin & Lagoe, 2013), control of tobacco usage (Maynard et al., 2018) and prevention of Zika virus (Sell et al., 2016), show that messages elements are effective in promoting health behaviour however, the effectiveness of message elements has not been tested in COVID-19 studies.

According to Perse & Lambe (2016), public knowledge of pandemic events is intrinsically shaped by the nature of the broadcasted messages published by the television. Studies has shown that, television messages on disease severity, susceptibility and efficacy are designed with unknown veracity (Rusho et al. 2021;

Muchiri et al., 2022). As a result, this may cause misunderstanding and create panic which would in turn influence adoption behaviour of control measures put in place (Song et al., 2021).

Further, Khan et al. (2020), television messages on pandemics blow the pandemics out of proportion, creating unnecessary panic in them, which is capable of leading to adaptive or maladaptive behaviour in the society. Engaging in constructive designing of pandemics messages would help in coping with negative behaviour in society. Going by these, how messaging elements influenced adoption of COVID-19 vaccines have not been explored. Therefore, the researcher sought to find out the effects of COVID-19 television messages on vaccine adoption behaviour among youths in Kiambu County, Kenya.

## 1.3 Objective

### 1.3.1 General Objective

The general objective was to assess the effects of COVID-19 television messages on vaccine adoption behaviour among youths in Kiambu County, Kenya.

### 1.3.2 Specific Objectives

1. To investigate the effects of COVID-19 television messages perceived susceptibility on vaccine adoption behaviour among youths in Kiambu County, Kenya.
2. To analyze the effects of COVID-19 messages perceived severity on the vaccine adoption behaviour among youths in Kiambu County, Kenya.
3. To examine the effects of COVID-19 television messages perceived response efficacy on the vaccine adoption behaviour among youths in Kiambu County, Kenya.
4. To find out the effects of COVID-19 television messages perceived self-efficacy on the vaccine adoption behaviour among youths in Kiambu County, Kenya.

5. To determine the moderating effects of demographic factors on the relationship between COVID-19 television messages and the vaccine adoption behaviour among youths in Kiambu County, Kenya.

## 1.4 Research Questions

1. What are the effects of COVID-19 television messages perceived susceptibility on the vaccine adoption behaviour among youths in Kiambu County, Kenya?
2. What are the effects of COVID-19 television messages perceived severity on the vaccine adoption behaviour among youths in Kiambu County, Kenya?
3. What are the effects of COVID-19 television messages perceived response efficacy on the vaccine adoption behaviour among youths in Kiambu County?
4. What are the effects COVID-19 television messages perceived self-efficacy on the vaccine adoption behaviour among youths in Kiambu County, Kenya?
5. What are the moderating effects of demographic factors on the relationship between COVID-19 television messages and the vaccine adoption behaviour among youths in Kiambu County, Kenya?

## 1.5 Study Hypothesis

**$Ho_1$**: COVID-19 television messages perceived susceptibility have no significant effects on the vaccine adoption behaviour among youths in Kiambu County, Kenya.

**$Ho_2$**: COVID-19 television messages perceived severity have no significant effects on vaccine adoption behaviour among youths in Kiambu County, Kenya.

**$Ho_3$**: COVID-19 television messages perceived response efficacy have no significant effects on vaccine adoption behaviour among youths in Kiambu County, Kenya.

**$Ho_4$**: COVID-19 television messages perceived self-efficacy have no significant effects on vaccine adoption behaviour among youths in Kiambu County, Kenya.

**$H_{O5}$**: Demographic factors have no moderating effects on the relationship between COVID-19 television messages and the vaccine adoption behaviour among youths in Kiambu County, Kenya.

## 1.6 Significance of the Study

With the rise of COVID-19 pandemic globally, the cases of the pandemic were noticeable in Kenya from the time when the first COVID-19 infection was confirmed in March 2020. In the wake of the pandemic, the health and socio-economic challenges experienced by youths in Kenya were on the rise (Karijo et al., 2021).

According to Ludwig et al. (2021), during increased burden of COVID-19 globally, the media and more so, television was an ultimate tool for the socialization of information. Its contribution was evident in informing on the pandemic advances, data of the infections, recovered and deaths, latest research, and health services available. Additionally, the strategies to control global infections and behaviour were aired via television leading to coping and non-coping trends by different actors.

Besides informing, the television highlighted the risks audiences were exposed to, likelihood of contracting the disease and once ability and inability to cope with the measures put in place in each direction which affected the intentions of controlling further infections (Geni et al., 2021). As such, there is a need to find out the effects of COVID-19 television messages on vaccines adoption behaviour among youths in Kiambu County, Kenya.

### 1.6.1Academic Benefits

The findings contribute to the current body of knowledge by analyzing the effects of media messages on COVID-19 among youths in Kiambu County, Kenya. Additionally, the study contributes to the knowledge in health communication by suggesting creative strategies in targeted and angled reporting by the media and evaluation of the same. This is beneficial to health communication researchers and practitioners.

### 1.6.2 Communication Benefits

This study is beneficial to media personnel and health communication planners, health communication researchers and practitioners, the government, policy makers in the Ministry of Health, and other health practitioners.

This study is important to planners and designers of media communication on Covid -19 and other pandemics, because the results describe the effects of television COVID-19 messages on vaccine adoption among youths. The study findings aid in generating information on COVID-19 vaccine adoption behaviour among youths in Kiambu County resulting from watching the disease's narratives. This provides directions for targeted and angled reporting by the TV. As such, helping in customizing communications for required outcomes of the general public.

### 1.6.3 Benefits to Health Practitioners

Through the understanding of the intervening effects of perceived response and self-efficacy between COVID-19 television messages on vaccine adoption behaviour among youths in Kiambu County; handling future infection cases will be made easier. The study is useful to health professionals in the areas of practice, policy, and research. They can understand their roles in promoting vaccination as well as influencing positive control behaviour.

### 1.6.4 Benefits to Policy Makers

The findings and suggestions are significant to the government and policy makers in the government and the ministry of health. The government as well as the involved health stakeholders will be able to understand the COVID-19 vaccine adoption behaviour among youths in Kenya and how this affected the control measure put in place. Thus, giving an understanding on what TV messages can achieve in enhancing vaccine adoption, reducing stigma, and lowering more infections. As such, the policy makers now have guidelines to use during the implementation of policies and fight against pandemics.

### 1.6.5 Benefits to the Community

Additionally, the findings are beneficial to community by increasing their knowledge of on pandemics for informed decision on control measures. As such, decrease in infections, reinfections, and deaths.

## 1.7 Scope of the Study

The study focused on how COVID-19 television messages influence adoption of COVID-19 vaccines among youths. The study was conducted in Kiambu County, Kenya and was limited to COVID-19 television messages. The study examined the effects of television messages on COVID-19 pandemic and vaccine adoption behaviour among youths in Kiambu County, Kenya.

### 1.7.1 Geographical Scope

The COVID-19 pandemic, led to millions of deaths and hundreds of thousands regionally, making the government take measures to reduce spread and fatality. The transmission and cases of deaths were noticeable in Kiambu County. As such, in several instances Kiambu County led in transmissions cases in the Country (MoHK, 2021a). This led to awareness and campaigns against COVID-19 spread in the County.

Kiambu County is positioned next to the Capital City of Kenya which took the lead in the number of COVID-19 transmissions. Further, report from the Ministry of Health showed that Nairobi County led with 63 COVID-19 Vaccine centers followed by Kiambu County (MoHK, 2021b).

Additionally, going by the report from Ministry of Health Kenya dated 30$^{th}$ May 2022, approximately 8.45 million people had been fully vaccinated with only 579458 people from Kiambu County. MoHK had targeted 1.7 million (35.7 %) people by December 2021. This statistics of the fully vaccinated people in the County was very low (MoHK, 2022).

The study was narrowed down to Thika Town constituency, Ruiru constituency and Kiambaa constituency in Kiambu County. Thika Town constituency was selected

because it has the highest health facilities in Kiambu County while Ruiru and Kiambaa Constituencies had the highest vaccine centers. In addition, out of the 53 COVID-19 vaccine centers 13 of them were in Thika Town Constituency, Ruiru constituency 8 and Kiambaa town 6 centers (MoHK, 2021b).

### 1.7.2 Content Scope

The study focused on how television messages on COVID-19 affected the vaccine adoption behaviour among youths. The study was conducted in Kiambu County, Kenya and was limited to Covid-19. The Youths are individuals aged between 18 and 35 years.

In disparity to other pandemics COVID-19 is the recent pandemic which changed the world daily routines drastically. The spreading of the pandemic globally, affected societies in different aspects and their economies in unprecedented ways.

### 1.7.3 Theoretical Scope

This study was based on extended parallel processing model (EPPM), health belief model (HBM), and diffusion of innovation theory in an attempt to explore vaccine adoption behaviour among youths in Kiambu County, Kenya.

The extended parallel processing model talks of how people behave when faced with threat stimuli. As such, the extent someone feels endangered by a health risk determines the motivation to act, while someone confidence in ability to control the threats determines the response thereafter. The EPPM just like health belief model talks of perceived susceptibility, severity, perceived response, and self-efficacy which affects adoption behavior. The HBM adds the elements of demographic variables that act as a moderator of behaviour. The diffusion of innovation theory explains how innovation spread in society, their acceptance and rejection.

In this framework, television messages on COVID-19 are independent variable while vaccine adoption behaviour among youths in Kiambu County, Kenya is the dependent variables, also the framework has moderating variables which are the demographic factors.

### 1.7.4 Methodological Scope

This study employed cross-sectional research design and it was mixed research; which employed both quantitative and qualitative research methods for validity. The research design was applied to account for acceptance and rejection adoption behaviour and the accompanying exposures of Kiambu County youths especially after the vaccines were made available to every Kenyan in August 2021 (Kothari, 2004).

## 1.8 Limitations of the Study

Limitation of the study are factors that may influence the study and are beyond the researcher's control. They describe situations that could affect the choice of methods, data collection, and analysis. This study sought to find out the effects of COVID-19 television messages on vaccine adoption behaviour among youths in Kiambu County, Kenya. The study had one limitation. The study relied solely on the effects of COVID-19 television messages on vaccine adoption behaviour; it was not possible to control the influence of other external factors such as misinformation and channels of communication like radio and social media platforms.

# CHAPTER TWO

# LIERATURE REVIEW

## 2.1 Introduction

Chapter two presents the key variables to the study and an interpretation of what has been published relevant to the study by recognized researchers and scholars. This chapter presents a theoretical and conceptual framework followed by empirical review of related literature, critique of existing variable as well as discussion on the gaps that this study intends to fill. This section is relevant in understanding the purpose of this study.

## 2.2 Theoretical Framework

The study is founded on theories, forming a logical set of prepositions derived from data and supported by evidence (Kombo, 2011). The theoretical framework section focused on the Extended Parallel Processing Model, and Health belief Model to analyze COVID-19 television messages. Additionally, diffusion of innovation to discuss the adoption behaviour of COVID-19 vaccine among youths in Kiambu County, Kenya.

### 2.2.1 Extended Parallel Processing Model (EPPM)

The EPPM was proposed by Kim Witte in 1992 as a response to inconsistencies in fear appeals literature and frameworks on fear control. This model has been used empirically in health-related studies and in public health campaigns and political adverts. It is used to align messages (fear *inducing messages*), behaviour (*recommended behaviour by the messages*) and the audience credentials *(of the recipients of the designed fear messages*).

The theory seeks to predict how individuals react when exposed to threats stimuli (Witte, 1992). It asserts that people react to threats by engaging in either danger control mechanisms (*taking protective actions*) or fear control (*rejecting messages*) The degree to which a person perceives a health threat influences their motivation to act,

while their confidence to effectively mitigate and prevent the threat determines the actions taken.

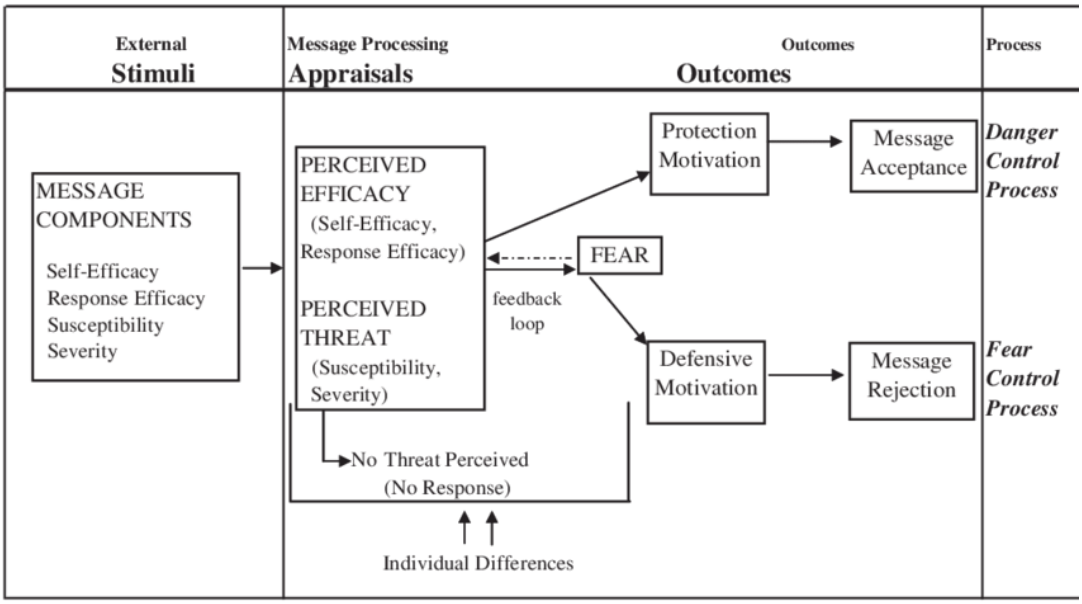



**Figure 2.1: Extended Parallel Processing Model Diagram**

Source: (Witte, 1992)

The EPPM model consists of four key variables: two related to beliefs about the threat (*Perceived severity and perceived susceptibility*) and two related to beliefs about efficacy (*self-efficacy and response efficacy*) (Witte, 1992).

The media is acknowledged as the prevalent provider of health information and effective means to creating awareness about the disease and precautionary measures (Khasawneh et al., 2020). By providing such information the media shapes public opinion and attitude, ultimately influencing adoption and rejection of a health innovation.

According to Pieri (2019), public knowledge of pandemic events is intrinsically shaped by the style of broadcasted messages published by the media. Therefore, this study adopts the extended parallel processing model as a theoretical basis. Witte (1992), asserts threat variables in television messages influence efficacy perceptions which in

turn influences behaviour. Threat-based messages are initially presented to enhance awareness of a pandemic, especially on perceived severity (seriousness of the pandemic) and perceived susceptibility (likelihood of contracting the pandemic).

Once the individuals receive messages with COVID-19 threat variables, they outweigh the messages which influences their perceived efficacy. The EPPM outlines two aspects of efficacy; perceived self-efficacy (an individual's confidence in their ability to control the threat) and perceived response efficacy (personal beliefs regarding effectiveness of the recommended behaviour to mitigate the threat) (Witte, 1992). Notably, when audiences perceive their efficacy to be higher than the threat level, they engage in danger control in order to avert the threat.

### 2.2.2 Health Belief Model (HBM)

The model was developed by Becker in 1974, building upon on the work of Rosenstock from 1966. The main purpose of the model was to understand people's failure in disease prevention in the United States and patient's responses on preventive measures based on disease symptoms. Since inception the model has gained empirical support, mainly because of its application on obesity studies, diabetes, and other health fields such as Cancer, HIV among other Chronic illnesses, where it has been instrumental in explaining and predicting health-related behaviour (Champion & Skinner, 2008).

The heath belief model is founded on behavioural and psychological principles, asserting that health behaviour is driven by the desire to avoid illness and belief in effectiveness of proposed preventive action. The model explains health behaviour changes and predicts other health-related actions, especially those that pertains uptake of health services. It assists in analyzing people's perception and views on health issues and evaluate their effects on health preventive behaviour. That is, an individual's belief in the personal threat of an illness and their confidence in the effectiveness of preventive measures determine their adoption behaviour (Champion & Skinner, 2008).

The Health Belief Model comprises of six key elements that help predict people's actions in disease prevention and control. The original model included four variables;

perceived susceptibility, perceived severity, perceived benefits, perceived barriers, while cues to action and perceived self-efficacy were later added as the model evolved (Champion & Skinner, 2008). This framework suggests that people's beliefs on health issues, the perceived benefits and barriers to action and their confidence in effectively implementing preventive measures influence their engagement and disengagement towards health-promotion behaviour (Champion & Skinner, 2008).

Further, the theory posits that modifying variables can influence changes in health behaviour amongst different communities. Individual characteristics such as psychosocial (personality, peer pressure etc.), structural variable (knowledge on disease and prior contact with the disease) and demographics (gender, religion, level of education, economic status, race, age among others) can affect perceptions of health-related behaviour (Sulat et al., 2018).

The media blends a wide range of information with pandemic-related content. The pandemic's information shared on the television is characterized by messages highlighting perceived threat and benefits messages which in turn influences compliance and non-compliance as per the control measure put in place by the different actors (Sellnow et al., 2008).

According to Dodsworth (2021), the media messages are designed to stimulate perception of Covid-19, particularly by emphasizing the key elements of Health Belief Model. These include perceived susceptibility (the *risk of contracting COVID-19 pandemic),* perceived severity (*the seriousness of contracting COVID-19 pandemic),* perceived benefits (the *success of the COVID-19 pandemic control measures*), perceived barriers (*the obstacles of controlling COVID-19 pandemic).*

The Public awareness of COVID-19 is inherently formed by the style of broadcasted messages by the television. Zheng et al. (2021), asserts that the styles of media reports influence the audience attitudes and how they process information. As such, the message has cue to actions (*stimulus that trigger decision making process so as to accept COVID-19 control measures*) and self -efficacy elements which pertains individual's confidence in ability to partake the control measures put in place.

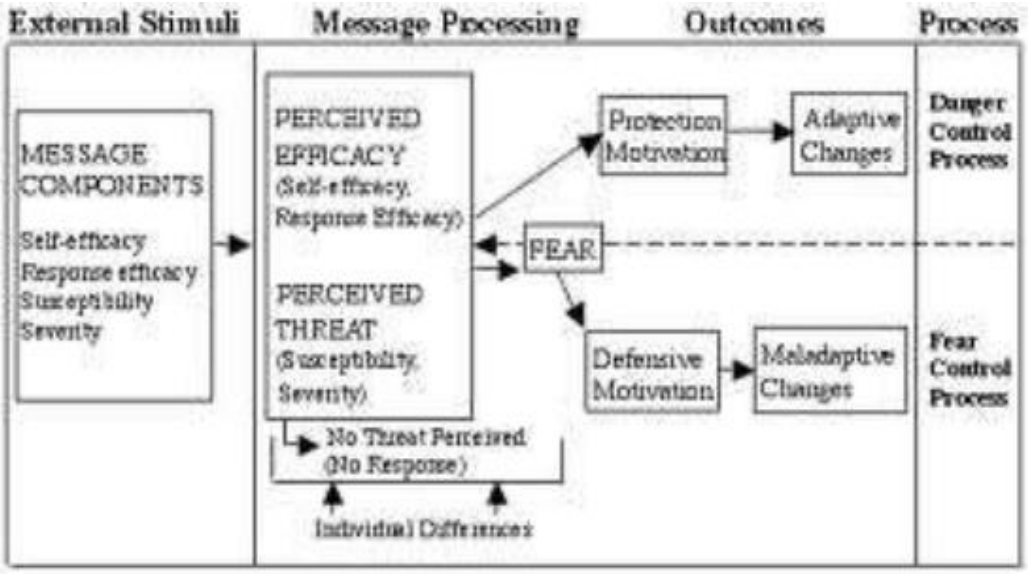



**Figure 2.2: Health Belief Model**

Source: (Rosenstock, 1966)

In this study Health Belief Model used to examine whether exposure to television messages on COVID-19 Pandemic, particularly those emphasizing on perceived susceptibility, severity and benefits, influenced vaccine adoption behavior among youths in Kiambu County, Kenya.

The health belief model supported this study as it focuses on how media messages on perceived susceptibility and severity of Covid-19, elicit certain health behaviour on preventive measures put in place such as vaccination against the pandemic. Additionally, the provision of modifying variables by the theory supported the study on how the demographics weakens or strengthens the relationship between television COVID-19 messages and vaccine adoption among youths in Kiambu County, Kenya.

### 2.2.3 Diffusion of Innovation Theory

The diffusion of innovation theory was developed by E. M. Rogers in 1962 as a way of explaining how innovations spreads in society. E. M Rogers developed the theory to demonstrate how adoption take place among people and organizations. The theory

has been applied in various disciplines such as political science, education, public health, technology, economics, and communication.

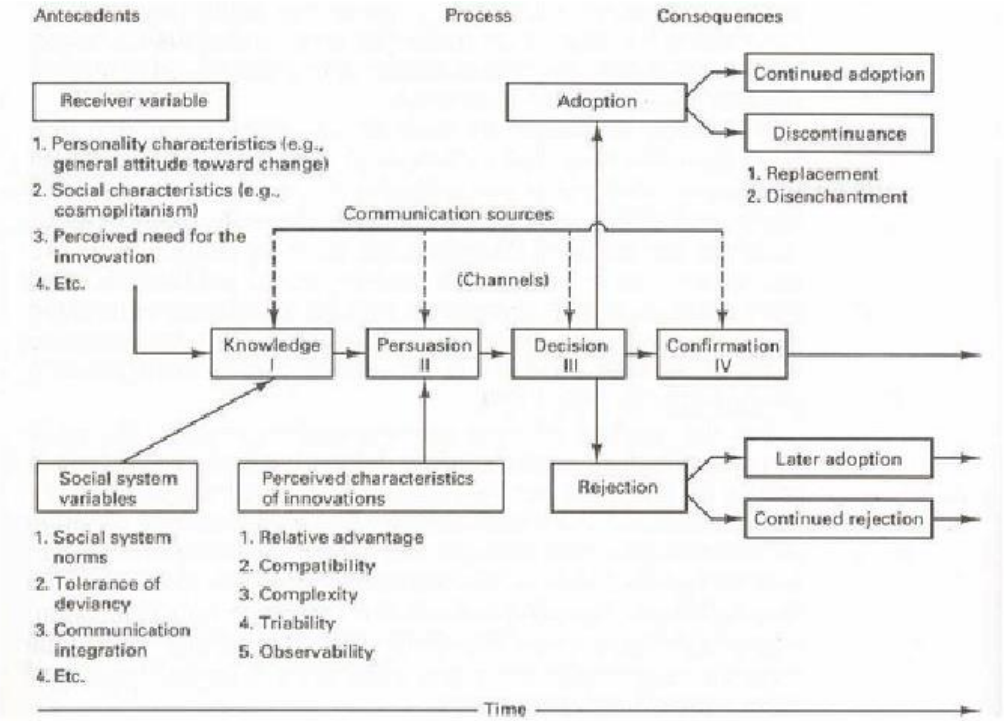



**Figure 2.3: Diffusion of Innovation**

Source: (Rogers, 1962)

The theory defines innovation as a new idea, process or technology introduced within a social system. Diffusion refers to transmission of unfamiliar information about innovations within social systems. Over time ideas or products may gain momentum by the help of communication within a specific population (Kaminski, 2011). The theory explains the patterns by which the new ideas, innovations and practices spread in a society.

The theory categorizes adopters into five groups based on who comes first in the adoption process; that is the innovators come first followed by early adopters, then early majority, late majority and lastly the laggards. Further, the theory accepts there are factors that influences the adoption process (Kaminski, 2011).

The key factors affecting innovation adoption include: time, communication channels, adopters, social systems, and innovation (Kaminski, 2011). Additionally, the theorist notes that adoption of any innovation undergoes through five stages which are knowledge, persuasion, decision, implementation, and confirmation (Kaminski, 2011).

Noticeably, the end result of diffusion of any innovation is either the adoption or rejection behaviour. Adoption means embracing the product and usage while rejection is failure to embrace the product due to different reasons (Kaminski, 2011). The television is used as a conduit for mass campaigns on new products, crisis control measures and COVID-19 vaccination. The population receiving the messages weighs the information received based on their relative advantage, complexities, consistency, practicability and how tangible the gains of the messages are.

Television messages on Covid-19, were frequently broadcasted in news segments and programs. The framing of these messages, their perceived benefits, complexities, feasibility, and stability, influenced behavioural outcomes. The youths in Kiambu County chose to adopt or reject COVID-19 based on the COVID-19 based on how the television messages are presented.

### 2.3 Conceptual Framework

A conceptual framework is a tool that helps in understanding the relationships between different variables in a study (Kombo & Tromp, 2011). The media plays an important role in influencing societal behaviour towards the mitigation put in place to control pandemics. Television messages on COVID-19 contained elements of perceived threats that impeded decision-making processes, and behavioural control.

In this framework, television COVID-19 messages that contained threat elements; susceptibility, severity, and efficacy beliefs are independent variables while adoption of vaccine behaviour among youths in Kiambu County is the dependent variable. This is because adoption of COVID-19 vaccines as a control measure of COVID-19 is dependent on the messages aired via the media.

Additionally, this framework has moderating variables. These are moderating factors between COVID-19 messages and vaccine adoption among youths in Kiambu County, Kenya. The moderating variables for this study include gender, religion, and education.

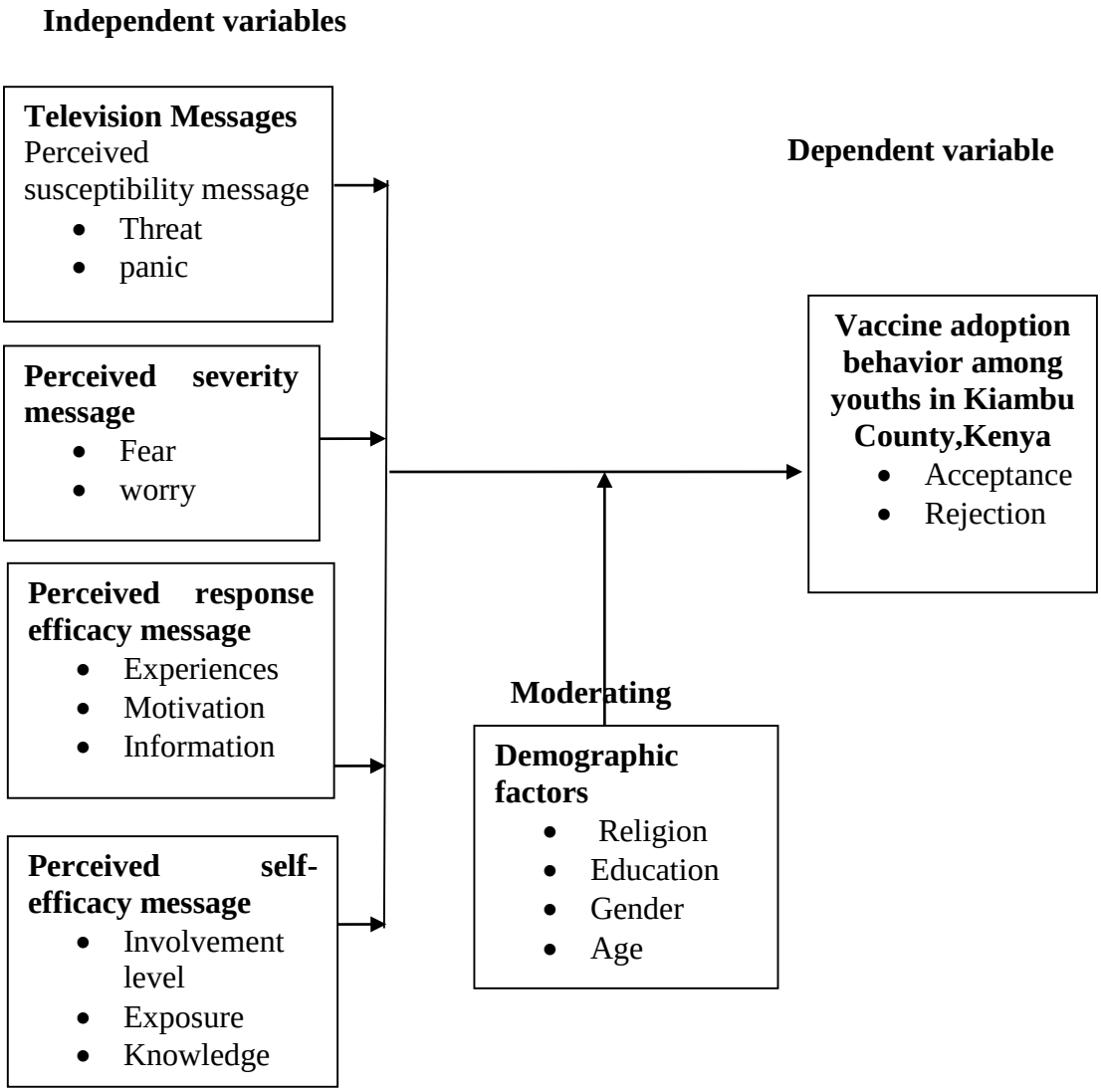



**Figure 2.4: Conceptual Framework**

Source: (Study, 2026)

## 2.4 Review of Variables

Review of variables gives an analysis of the independent, dependent and the intervening variables. As such, this section will give a review of the aspects of

television messages used in reporting stories on COVID-19 pandemic, vaccine adoption behaviour amongst the youths and the moderating factors between television messages on the COVID-19 and vaccine adoption behaviour.

### 2.4.1 Perceived Susceptibility Television Messages

According to Janz & Becker (1984); Witte (1992), risk perception tends to influence protective behaviour. People are unlikely to adopt a health recommendation unless they perceive themselves to be at risk. The risk perception is shaped by an individual's belief on their vulnerability to a particular health condition. Witte (1992), defines perceived susceptibility as chances or likelihood of contracting a disease.

Borrowing from the health behaviour theories, threat perception is a combination of perceived severity and perceived susceptivity. Perceived severity refers to an individual's evaluation of the seriousness of a threat and consequences while susceptibly entails one's subjective assessment of probability of being at the risk. However, they are separate components that influences decision making separately. Additionally, their influence on decision-making varies depending on whether the health condition in question is preventive or pertains treatment (Ranjit et al., 2021).

The perceived susceptibility, influences health behavior. Low perceived susceptibility may cause denial of contracting a disease reducing chances of adopting preventive measures while high perceived susceptibility can motivate people to engage in preventive behaviors such as wearing a face mask and washing hands (Ranjit et al., 2021).

According to Tyler (1980), risks perception operates on both personal level and social level. Likewise, Liu et al. (2021), explains that the media and for this case the TV impact people's sense of risk during public health emergencies. According to Updegraff et al. (2015), when people perceive themselves susceptible to health conditions, they tend to be vigilant about potential health outcomes thus, adopt a promotion-focused approach against the contraction of the disease. On the contrary, when people perceive themselves as susceptible to health conditions, they become more prevention- focused and eager in achieving health outcomes.

In research conducted by Tang & Wong (2003), on *predicators of health behaviour and effect of community prevention measures in Hong Kong*, found out that Chinese citizens with low susceptibility engaged less in mitigation measures, De Coninck (2020), a pattern also observed during Covid 19 pandemic. In addition, in examining the roles of perceived susceptibility and severity constructs, health theories highlight the influence of external stimuli such as informational cues from interpersonal communication, persuasive messages and for this study media content, in influencing individuals can influence preventive behaviour towards diseases (Ranjit et al., 2021).

Further, Jones et al. (2015), highlight that informational cues play a crucial role in shaping individuals' perception of susceptibility and severity regarding a disease. Exposure to media content that has emphasize on susceptibility-related messages can motivate individuals to either engage or refrain from specific health behaviors. Similarly, messages emphasizing on severity of disease can shape individuals' responses, reinforcing the importance of risk perception in guiding prevention actions.

Further study by Chang (2016), on behavioural *recommendations in health research news as cues to action: self-relevancy and self-efficacy processes* found out that health media coverage influences behavioural intention through cognitive processing of risk evaluation, social norms in health areas, Michelle Driedger (2021), for instance the 2009 H1N1.

Vidanapathirana et al. (2005), in their study on mass media interventions for promoting HIV testing, found out that media influence perception of health risks and individuals end up getting tested. Similarly, Lin & Lagoe (2013), in their study on the *effects of news media and interpersonal interactions on H1N1 risk perception and vaccination intent* found out that; perceived susceptibility messages influence people to get vaccinated against H1N1 flu.

In a study measuring *threat perception and information cues influencing behaviour,* Ranjit et al. (2021), found out that people are unlikely to adopt recommendations unless they believe they are vulnerable. During the public health emergency people are required to understand the risks of the disease and safety measures. For instance, the scientific understanding is not constant, it keeps changing daily. As such the

updates are communicated resulting to new recommendations which calls for different preventive behaviour, Elliot & Thrash (2016), people must feel at risk to avoid.

Ranjit et al. (2021), citing of susceptibility messages in the media content and use of statements such as one is at risk of getting Cov1d-19, chances of getting COVID-19 are high, we are all vulnerable to the pandemic, there is likelihood of contracting COVID-19 and reporting on high percentages of contractions induced certain perception and behaviour in the society. Media-channeled perceived susceptibility messages can evoke undesirable perceptions and reactions, potentially reinforcing or challenging the existing stereotypes about a pandemic. Such messages may influence public attitudes, shaping how individuals interpret health risks and respond to preventive measures.

In addition, de Rosa & Mannarini (2020), note that people assess their susceptibility to and prevalence of an infectious pandemic based on examples and misrepresentations presented in media content. Exposure to media content pandemics focusing on the threats, risks, causal, solution and responsibility can significantly shape public perceptions and influence behavioural responses (Ngure & Mberia, 2019).

### 2.4.2 Perceived Severity Television Messages

Perceived severity is an important determinant of behaviour as highlighted in the extended parallel processing model, and health belief model, both which emphasize the significance the seriousness of a threat in shaping responses (Weinstein, 2000). The elements of severity messages alter how decisions are made by information consumers. The seriousness of the threats influences how messages are crafted and delivered to elicit the desired behavioral response.

According Glanz et al. (2011), health behaviour theories suggest that an increased perceived severity increases precautionary reactions. As such, threat perception drives behaviour, however, specific action to be taken is determined by beliefs about the behavioural options available to counter threats. Nevertheless, attitudes and intents do not always translate to behaviour that are healthy (Vermandere et al., 2016).

According to Chaiuk & Dunaievska (2020), people acquire certain behaviour, views and beliefs based on the threat-based narratives aired through the media they consume over time. People have difficulty in making conclusions about events that they have never experienced. As a result, they do not really know what they want or what it would mean to them.

As it is suggested by Chaiuk & Dunaievska (2020); Yoshioka & Maeda (2020), that media coverage on pandemics can create problems, people react to media-fueled severity differently. In addition, Gollust et al. (2019), mentioning of severity messages in media content and use of severity related words such as *killer disease/ virus, death, expensive, painful, COVID-19 is a serious threat to health, contracting COVID-19 has negative consequences among others* thus, eliciting certain perception and behaviour in the society.

Besides, extensive media coverage, the list of techniques that help the media shape society's perception of risk includes the volume of information provided, the way in which the risk is framed as well as the symbols and metaphors used to describe and characterize the risk (Chaiuk & Dunaievska, 2020; Yoshioka & Maeda, 2020). This is clear evidence of what the media can do during a pandemic. The spread of information and infodemics by the media during a pandemic can instill terror and fear on a global scale. The continuous flow of alarming news on pandemics, exaggerations of threats heighten public anxiety influencing decision-making which lead to panic and misinformation-driven behaviour.

Further research by Carey & Sarma (2016), on the threat appeal in health communication; messages that elicit fear and enhance perceived efficacy positively impact young drivers, the health communication present threat- based narratives of potential consequences of health risks. The severity campaigns are prominent in health campaigns. From the researchers, severity messages targeting fear and cognitive mechanisms can affect behaviour.

Similarly, perceived severity messages on pandemics are expected to snatch people's focus. Further studies by Witte (1994), on how fear/ threat appeals messages are processed, and reactions conclude that severity messages make the consumers interpret

messages with fear. As such the messages intrigue anxiety, and there is a probability something bad might happen if action is not taken.

Maynard et al. (2018), health warning labels shows the seriousness of diseases, thus changing intentions and attitudes. In addition, these researchers, *on severity and susceptibility; measuring the perceived effectiveness and believability of tobacco health warnings,* note that severe messages increase smokers' intention to quit smoking, further they may elicit greater or lower emotional reactions. In contrast, severe messages may result in defensive response. Depending on the presentation of the health warning labels the messages may be deemed believable, as such, those who fail to quit certain behaviour usually have high levels of minimizing risks beliefs.

According to Yoshioka & Maeda (2020), the media is in the forefront to covering COVID-19 as a killer pandemic and severe. As such, within the society common drivers of adoption of pandemic control measures channeled by the media include leading fear, negative attitude, lack of awareness and misconception about a pandemic and stigma itself, inability of people to manage the condition and practices put in place by the supranational and national entities.

Nowadays, severity frames are a new trend in the media, where it may cause negative repercussions for individuals, organizations as well as the control of pandemics with reference to the mitigation measures (Seale, 2003). Severity messages have been at peak of COVID-19 pandemic, as such need to analyze literature on how televised messaging influences mitigations and response stage of any pandemic.

Pandemic disease control is a crucial public health issue. Although it is important to urgently perform public health measures to reduce the risk of spread (Seale, 2003). A well-sensitized media has the potential to change the way the society deal with pandemics. The media can increase awareness about pandemics and play a role in promoting positive attitudes in the society. The media can support the World Health Organization in mitigating pandemics by educating the society on mitigations and how to deal with mitigating information.

### 2.4.3 Perceived Efficacy Beliefs

According to Rodgers, (1975), people's reactions during stressful instances varies. In response, people protect themselves based on coping *appraisal* (Floyd et al., 2000; Norman et al., 2015). According to Floyd et al. (2000), coping appraisal include efficacy beliefs, which consists of *perceived response efficacy and self- efficacy*. Drawing from Extended Parallel Processing Model, perceived response efficacy consists of beliefs pertaining effectiveness of the recommended behaviour to avoid risks while perceived self- efficacy relates to one's confidence in their ability to control risks (Witte, 1992).

Thrasher et al. (2016), state that the impacts of threatening communications depend on the magnitude of emotional response and the efficacy beliefs. When an individual perceives a message as threatening message and personally relevant, they may experience negative emotional responses such as anxiety and fear. However, their efficacy beliefs determine their response is adaptive (attitude change, or intent to behaviour relating to the message) or maladaptive (minimization of the risks, message avoidance and reactance).

One's ability to prevent undesired outcomes, requires an understanding of the required actions and strong belief in their effectiveness before the actual action. As such, provision of information and changing of beliefs strengthen perceived self-efficacy of people. Self-efficacy is crucial in health contexts, since when it is high, there is greater probability for attitude and behaviour change (Moriarty, 2009).

Witte (1992), suggests that threatening messages are likely to elicit desired reactions and lead to adaptive behavior when both perceived threat and efficacy are high. In a study measuring *severity and susceptibility; measuring the perceived effectiveness and believability of tobacco health warnings* Maynard et al. (2018), found that strong threatening messages influence risks perception and cessation behaviour. Their findings also indicate that higher self- efficacy on quitting behaviour, like smoking can increase the likelihood of future smoking cessation.

According to Moriarty (2009), the extent to which a recommended action is believed to avert a health threat determines whether individuals perceive it as effective. The high efficacy beliefs are associated with participation in vaccination and engagement in preventive measures.

In a study measuring effects of perceived threats and response efficacy on adoption to smog by Mehiriz & Gosselin (2021), individual behaviour is motivated by the urge of surviving and reducing effects of threat which is dependent on the reality. Distorted perceptions of threats lead to suboptimal actions. Response- efficacy is crucial in prevention or protection motivation of any threat.

In a study measuring the *frequency of news media messages in the coverage of Zika virus in 2016 by Sell at al. (2016*), noted that health risk information helps people in understanding threats and preventive measures, thus provide policy support for mitigating the health risk. The public perceptions and judgement made by people during health crisis stems from the messages disseminated via the media. Further, information from the media is seen to affect people's emotions and confidence towards protective and preventive behaviour.

According to Avery (2010), in times of crisis search for and access of large amount of information via media is witnessed. The information is vital; the framing of the pandemic messages tend to promote responses. However, misleading information may influence efficacy beliefs due to the formed false perception about the health risk.

Through media messaging on pandemics an agenda is set, advocating for fear, causing emotions. The television cause people to judge the possibilities of personal risks, thus efficacy beliefs that influences health responses (Liu et al., 2021). As such, exposure to pandemic content via media influences people's cognitive beliefs which in turn causes certain behaviour change (Ranjit et al., 2021).

Further, the mainstream media tend to pay more attention to risks content, which aid in building confidence in control measure. Liu et al. (2021) asserts that emphasizing risk communication reduce panic by highlighting on solution and successful containment measures. However, the media messages elicit fear, which while aimed

at driving solution, may discourage certain behaviour. In cases where no alternatives are given, high levels of fear can instead promote preventive actions.

Furthermore, mainstream media tend to focus more on risk-related content, which can help build public confidence in control measures. Liu et al. (2021), argue that emphasizing risk communication reduces panic by highlighting solutions and successful containment efforts. However, media messages can also evoke fear, which, while intended to drive solutions, may discourage certain behaviors. In cases where no alternatives are provided, high levels of fear can instead promote preventive actions.

Borrowing from EPPM susceptibility and severity messages elicit emotions such as fear and anxiety (Witte, 1992). They originate from uncertainty of threats and stimulate great motivation to seek preventive information, the fear and uncertainty arising from messages may lead to efficacy beliefs (ineffectiveness of measure already there and lack of confidence to prevent disease). The information searched may fill the gap or not (Liu et al., 2021). Therefore, there is a need to change health behaviour. This is because changes in health behaviour result in better health, which averts burdens of medical cost, mortality, and suffering. There is increased shift in promotion of health where consumers are attuned to health messages in news and news organizations are filling the growing information needs (Liu et al, 2021).

### 2.4.4 Moderating Variables

Intervening variables influence both the direction and strength of the relationship between independent and dependent variables. Moderators, in particular, can enhance or weaken this relationship. Demographic factors such as religion, gender, and education impact the relationship between COVID-19 pandemic messages aired through television and disease prevention measure put in place.

#### 2.4.4.1 Demographics

According to Osur et al., (2022), COVID-19 was a global public health concern due to mutation of the virus, deaths and new cases reported daily. With the key mitigation being mass vaccination, there was hesitation in acceptance of vaccines among

communities. Further, in a cross- sectional research conducted by Osur et al., (2022) on the *Determinants of COVID-19 vaccine behaviour intentions among youth in Kenya,* found out that indecision remained high among youth where only 42% were ready for vaccination, 52% waited to see the effects of the vaccines to the already vaccinated and 6% were unwilling.

Noticeably, the determinants of this hesitancy were attributed to the nature of information on COVID-19 pandemic and vaccine, conflicting messages from social media platforms, religious factors, recipients level of education, perceived risks of contraction of the pandemic, efficacy beliefs, and trust issues on MoHK. Significantly, the study found out that low uptake of vaccines was higher among females, those with post-secondary education and Protestants (Osur et al., 2022).

Further, the influence of gender on health was key during COVID-19 pandemic. The data provided proper understanding of testing, cases of contractions, hospitalizations, and deaths. According to Peckham (2020), males had three times odds of intensive care units' admissions and 40 % higher odds of dying from the pandemic compared to females. Additionally, gender constructs impacted the outcomes due to differences in exposures to the disease (Walter & McGregor, 2020; Wolfe et al., 2021).

Contrary, further studies found out that men exhibited higher vaccine acceptance than women (De Figueiredo et al.,2020; Malik et al., 2020; Wouters et al., 2021; Solis Arce et al., 2021). This suggests the need for targeted messaging on women to address the rejection and hesitancy. Therefore, designing persuasive messages for women is crucial. The designed messages should be tailored to the most hesitant population in relationship to their age, gender, and education.

Further, in a study on *understanding factors to COVID-19 vaccine adoption in Gujarat, India* by Tolia et al., (2022), found that, different factors influence adoption of a new innovation. Through forty- four interviews that were conducted via semi-structured interviews on different demographics found religion to have influence on vaccines adoption.

Noticeably, religion has different norms in culture, politics, and economic concerns. Several participants stated that religion have long-term influence on their decision towards vaccine uptake. In addition, 26 participants stated that religious leaders' influences vaccination process. As such religious leaders are powerful in influencing people's decision irrespective of people's lifestyles and education background (Tolia et al., 2022).

Further studies by Orangi et al., (2021) *on assessing the level and determinants of COVID-19 vaccine in Kenya*, found that some demographics have influence. However, the level of education had no statistical significance on vaccine hesitancy. Instead, an individual's perception of COVID-19 risks and its impacts played a key role in determining their level of hesitancy.

Additionally, concerns on effects and effectiveness of the vaccine as portrayed by the media had an upper hand on vaccine uptake in the society. Orangi et al., (2021), suggest that the messaging should be well framed, if at all positive acceptance is expected. As such, holistic, transparent, and dynamic messaging by the media and from public health campaigns.

Contrary, in other similar studies by Solis Arce et al., (2022), on the vaccine acceptance and hesitancy in low and middle-income countries found that higher level of education was linked to less probability of COVID-19 vaccine hesitancy. The study reported that, less- educated had higher acceptance in Burkina Faso, Rwanda, Sierra Leone, and Uganda. However, contrary pattern was observed in India, Pakistan since the acceptance was high among educated respondents. As such education is significant predicator of acceptance of COVID-19 vaccines (Solis Arce et al., 2022).

Agreeing with the Health Belief Model, Sulat et al., (2018), argue that modifying variables can influence health behaviour change amongst different communities. As such, individual characteristics such as psychosocial (personality, peer pressure etc.), structural variable (knowledge on disease and prior contact with the disease) and demographics (gender, religion, level of education, age among others) can affect perceptions of health-related behaviour.

These modifying variables influence health related behaviour by affecting perceived susceptibility, perceived severity, perceived efficacy beliefs, perceived benefits, cues, and barriers (Sulat et al., 2018). Therefore, this study sought to find out whether the modifying variables, for this case, religion, gender, and education influenced youths' COVID-19 vaccines adopting behaviour in Kiambu County, Kenya.

### 2.4.5 Vaccine Adoption Behaviour

Seale (2003), asserts that, how the media report content can influence audience's attitudes, behaviour and how they interpret and respond to media messages. Downs (1997), suggests that people's focus on an issue or crisis is not for a long period; the interest is at the onset of the pandemic and there is gradual decline of interest as the pandemic progresses.

Further, Perse & Lambe (2016), media is a key tool during the fight of pandemics. The way the media processes and disseminates information along with real-time news coverage, significantly influences the mitigation measures put in place. Further, Ranjit et al. (2021), found that, the society exercise their will on mitigation measures and when to participate in vaccination in relationship to the consequences of those decisions (Updegraff et al., 2015).

In support, Reyna & Farley, (2006), pandemic patients tend to weigh prospects that seem more likely as a certainty rather than perceiving the prospect based on its actual probability. People have a habit of avoiding risks in place of the probable benefits of a choice but are willing to take risks when presented with potential costs of a decision. As such, when risk is minimal, people respond more favorably to messages that are benefits-angled, (Yang, 2006).

According to Vermandere et al. (2016), in their study on human papillomavirus vaccine (HPV) uptake in Kenya, attitude and intentions arise during introduction of vaccines, but do not always translate to health behaviour. During the introduction of vaccines situation analysis is crucial and the evaluation of the population readiness on the vaccines. The adoption is continually influenced by uncertainties on safety and vaccines' efficacy as portrayed in the information available.

Chiricos, Padgett, & Gertz (2000), add that, during pandemics paying attention to news can influence behaviour. Investment in the consumption of news can exacerbate attitudes towards fear. Researchers argue that, people who intentionally seek out media reports related to pandemics are more likely to feel fearful as the pandemic ensues, thus refusal to be vaccinated.

An elevated sense of severity can make people fearful and impede social processes, decision-making processes and reduce peoples' capacity for cognitive mobilization (Zhou et al., 2020). Individuals who have elevated fear are defined as incognitively mobilized and not better informed to be vaccinated. In the pandemic context, the process of cognitive mobilization enables audiences to make rational and informed decisions regarding pandemic control policies.

The effects of severity messages endure beyond the time of message contact, thus forecasting preventive and discovery behaviour. The television coverage of health issues determines the topics of public discourse by making media agenda central to people's everyday conversations. As a result, arousing certain emotions, fear being one of them. Yoshioka & Maeda (2020), For example, extensive coverage of an event turns the public anxious or just too much concerned, resulting to adoption or in adoption of vaccines. In our times, pandemics not only seemed imminent but also irreversible. Karijo et al. (2021), observes that pandemic risks are carefully tied to economic growth; thus, society's responses to risks are largely muted in the big scheme of things.

According to Witte & Allen (2000), people react to messages in different ways; maladaptive response as reactance being one way. Recipients of messages may reject persuasive messages if they feel their freedom is at threat. Further, persuasive health messages aimed at changing behaviour may conflict the self-desires, leading to rejection.

In other study, by Borah, Hwang & Hsu (2021), *on COVID-19 vaccination attitudes and intentions: message framings and moderating role of perceived vaccine benefits*, found out that perceived benefits are crucial in health issues. As such, participants with higher perceived benefits and exposed to loss messages showed greater positive

attitude toward COVID-19 vaccine and more intention to vaccinate. In support, in a quasi-experiment conducted by Kim et al. (2021), showed that benefit messages failed to evoke intentions of cervical cancer vaccines (HPV- vaccination); perceived loss messages were more effective in evoking vaccination intentions.

Borrowing from Zwick et al. (2002), the fear, perception and defiance grow based with the nature of the information. Applied to the current context of media channeled messages during pandemic and vaccines adoption behaviour in the society, media content, influences vaccines adoption behaviour. As such, non- compliance, negative perception, and the fears of society pertaining to a pandemic stem from gross exaggerations in the media, flawed reporting, and stereotyped information. The society assign meaning to the media channeled content on outbreaks thus fear of being vaccinated.

## 2.5 Empirical Reviews of the Study

Empirical review is explanation and information published before on a topic by endorsed researchers and scholars (Kombo, 2011). This section will give a review of various works that have been done by other scholars and researchers on television messages on COVID-19 stories and vaccine adoption behaviour among youths and other information that is relevant to this study.

### 2.5.1 Media Messages on Pandemics and Behaviour

The nature in which the pandemics are outlined is vital. According to Seale (2003), the media usually have habits of underpinning explanations pertaining medical matters upsurge and reduce the willingness to seek care. This increase prospects or heighten an alarm of control measures since people perception arise from the media content. Media content shape constructions of reality for audiences. Going by this, it is evident the effects of receiving information about pandemic largely from the mass media not only increases overall fear of infection but influences attitudes towards preventive measures (Karijo et al., 2021).

In research documented on; *Alternative media framing of COVID-19 risks* by Rooke (2021), media sources are often blamed for risk amplification. During COVID-19 the media is faced challenges of airing uncertain facts of the new pandemic to an information seeking society. The media landscapes presented opportunities of content creators to design messages and scientific information to influence people to take precautions and prevent risks.

Further, Rooke (2021), notes that the COVID-19 severity and susceptibility messages are amplified through two ways. The first one is information technique, where influence is as a result of elevating risks. The second is response mechanism where, effectiveness of the information in influencing is as a result of outlining trust issues, dread of pandemic and stigmatization.

Rooke (2021), did analysis of risks frames amplified upon all 12 of Mister Metokur's COVID-19 streams that had been published between January and March 2020. The videos and transcripts from YouTube were imported into NVivo for analysis. The study found out that media coverage of hazards plays an important role in setting and reinforcing public perceptions. As a result, media forces impact social constructions of disease outbreaks. The hope or hopelessness, benefits, blame and risks that the narrative of the disease provides becomes the decision-making framework for both prevention and recovery efforts.

In addition, Chaiuk & Dunaievska, (2020), in their study; *Fear culture in the media; an examination of COVID-19 discourse*, noted that media influence is evident on what to think and what to think about. The study used discourse analysis method by looking at how language is used in the media in order to get influence for intended action. Chaiuk & Dunaievska, (2020), found that, when the media goes beyond reporting calamities to transform themselves into *fact industries via usage of different message components* to promote specific aims, the disease prevention and cure agenda get displaced.

As pandemics evolve societies find themselves increasingly frightened and concerned by many uncertainties regarding the transmission and number of deaths worldwide Shih et al., (2008); Williams & Gonzalez-Medina (2011). As a matter of fact, one of

the media's main roles in democratic societies is to give publicity to central issues in times of crisis (Sandu, 2020). However, Ranjit et al. (2021), found out that the anxiety and fear heightened by television messages on pandemics, threat elevation leads to negative attitude, discrimination, and stigma.

Similarly, Klemm, Das & Hartmann (2016), in their review on, Swine *flu and hype: a systematic review of the media dramatization of H1N1* influenza *pandemic*, found out that giving too much or giving certain messaging components to certain risks may lead to dramatization. Such extensive coverage may portray pandemics as severe or susceptible. Noticeably specific type of information presented can influence individuals' perception and health behaviour.

Further, risk messages and individuals' understanding of the threats is key foundation to developing motivation to protect themselves. In addition, risk information can result to anxiety and maladaptive reactions to risk if there is no efficacy information. This is because, tonality is used together with risks information. The tonality, emotion- laden language and use of worst cases influences the audiences' perception (Klemm, Das & Hartmann, 2016).

De Coninck et al. (2021), study on, *perceived vulnerability to disease attitudes towards public health measures on COVID-19 pandemic in Flanders Belgium*, indicate that, during the COVID-19 pandemic the government placed mechanisms to oversee the way the pandemic messages are disseminated through the media. The main objective of the study was to find out how perceived vulnerability and personality traits supported public health behaviour. The study concluded that high agreeableness and stability were dependent on the belief that health protocols protect population and greater belief was related to the television news.

Zhou et al. (2020), *study on effects of media reporting on mitigating spread of COVID-19 in early stage of outbreak,* found that the degree in which mitigation measures are broadcasted is dependent on the severity of the outbreak. This brings concerns about how the TV contributes to the prevention, control, and preparedness of any pandemic and how it reports on the peak time. The pandemics mitigation messages can revolve from pre-pandemic, during pandemics and after pandemic. The TV educates people

on the precautions to reduce chances of being infected. For instance, wearing face masks, hygiene, social distance, visiting health centers when interacted with the sick, distancing, and quarantine.

Further de Bruin et al. (2020), *research on impacts of global risk mitigation measures taken during combatting of the COVID-19 pandemic*, found out that by through mitigation measures reports awareness which in turn influence the transmission rates. This viewpoint provides insights on progression of any pandemic and curbing its spread and preparedness.

Demuysker, Nyatuame & Obiri (2021), *unmasking COVID-19 vaccine 'infodemic' in the social media indicate* anti-vaccine crusaders and infodemics on media have influence on billions of the pandemic vaccines. Through an online survey conducted among stakeholders in Ghana, found out that information consumption cause trust, mistrust and distrust on the vaccines.

Further studies on social media content and COVID-19 vaccine hesitancy by Muric, Wu & Ferrara (2021); Jennings et al. (2021), found out that the media content caused a lot of panic and anxiety among public thus recommend accredited health entities to embark on public health campaigns in liaison with the media.

From the above findings, it is clear that mitigation measures were relayed to the society by the media and in this context the TV, however the response was dependent on the message construction and delivery. This means that the TV and media, in general, have power to shape public perception of mitigation measures and control by selecting specific terms to describe them and pandemic, as well as by framing the context in which the information is presented. The media, as a whole, can influence the public's tendency to overestimate certain measures while underestimating others, ultimately affecting health-related decisions.

Therefore, the messages on COVID-19 by the media are important to the publics. The mitigation measures and control of infectious calls for public engagement. As such, communication during a health pandemic presents a unique public health education trend. The media reports on pandemics control and their guidelines.

## 2.6 Critique of Existing Literature Relevant to the Study

Information about new public health measures is disseminated through the media. According to De Coninck et al. (2020), the communication channels offer non-stop coverage during a health crisis. Despite regular coverage, there have been reports of public failure to abide to guidelines put in place by the government. This is because the public consider the messages excessive, while others cite economic and psychological concerns. In support of this, for pandemics and victims, issues of behaviour change are tied to media content (Ranjit et al., 2021). The television pandemic messages can influence the mitigation of pandemics and its future.

The nature of media content qualifies as the most cause of maladaptive or adaptive behaviour (Ngure & Mberia, 2019). It poses, barriers to control of pandemics. This kind of content components has an effect on victims' emotions, mental and hinders people from seeking treatment; putting the community at a greater risk and effects of unrelenting fear. Media is the driving force behind connectivity and information consumption. However, when produced and consumed irresponsibly, it can be a dangerous distraction in the event of a public health crisis.

According to Ranjit et al. (2021), on the role of information cues in influencing behaviour, media information is detrimental in containing pandemic since they influence human behaviour. From the result, the scholars conclude that information cues influence behaviour of controlling the pandemic mediated by perceived susceptibility and severity. These findings converge with this study, since the mainstream media are often the first source from which the public, including health professionals, learn about medical advances.

Further, in a study measuring role of mass media and public health communication in COVID-19 pandemic, Anwar et al. (2020), media remain crucial vehicles through which people obtain information on topics pertaining health; this information contribute to public health practices and outcomes. The media at large have been a keystone in building positive and negative behaviour and in this context of preventive behaviour amongst individuals in the society; which is dependent on how the pandemic stories are presented.

The media not only play the canonical roles (educating, informing, surveillance and inform) bestowed but hypes the stories with stereotypes elements (Anwar et al., (2020). Therefore, it is crucial when dealing with health issues to avoid falsity or generating unwarranted pressure. There is a general expectation that the media will provide accurate, unbiased, and complete information. Journalists endeavor to fulfil these expectations.

Further, a study on physical inactivity and TV viewing during Covid-19, Werneck et al. (2021), reported that there was increased inactivity and TV viewing during the Covid-19. The study found out that with the protocols of social distancing and quarantine lead to sedentary behaviour such as, increased TV viewing. Inactivity and TV viewing are causes of mental health outcomes such as depression and anxiety.

This study aligns with previous research, in that exposure to media content can shape a particular paradigm. Notably, the media take attitudes which are already present in society and re-present them bundled in a different packaging to their audiences. Over time people acquire certain behaviour, views and beliefs based on the media they consume. However, the study diverges, its main focus is on how TV viewing during COVID-19 is associated with mental health other that how TV messages during COVID-19 is associated with Vaccination.

### 2.7 Research Gaps

This study has identified the following gaps in the literature available on the framing of Covid -19 messages and vaccine adoption behaviour among youths. Zhou et al. (2020), indicates that people of older age groups experience higher mortality rate than young people thus easily affected by vulnerability messages. These findings are incomplete, the researcher has failed to study the health behaviour among youths, and other determinants that make them disengage in mitigation measures. Therefore, this study sought to find out how COVID-19 television messages affect the vaccines adoption behaviour among youths.

When assessing COVID-19 mitigation measures, it is vital to evaluate the aspect of messages and vaccine adoption. The existing findings has concentrated much on KAP

(Knowledge, attitudes, and practices) among youths Karijo et al. (2021), mental health during COVID-19 among youths (De Luca & Calabro, 2020) the role of media during COVID-19 and mitigation (Liang et al., 2020) and infodemics (Mheidly & Fare, 2020). The findings and conclusion can be considered scant and minimal information done on message constructs versus vaccination of Covid-19. Much of the literature available is on medical discipline and very few on studies conducted in Kenya. Therefore, this study sought to find out how COVID-19 television messages affect the vaccines adoption behaviour among youths in Kiambu County, Kenya.

Lastly, a study done by De Coninck et al. (2021), on Perceived vulnerability to disease attitudes towards public health measures on COVID-19 pandemic in Flanders Belgium focus is on protocol put in place by ministry such as handwashing, social distancing and wearing masks but lacks findings on vaccine as a preventive measure. Further, the study lacks an existing theoretical background, as such it is not founded on any theory.

De Conin et al (2021), conclude that the television news was related to a greater belief health measures are necessary especially public TV. However, the informational cues are not mentioned anywhere in the research topic. The study seems to have taken a wrong path and one would question, perceived vulnerability from where? Therefore, the researcher filled the gap by finding out how susceptibility, vulnerability, or efficacy beliefs components in television messages influences health behaviour and more so, adoption of COVID-19 vaccination. In addition, the theoretical discussion of this study was founded on health behaviour theories; Extended Parallel Processing Model and Health Belief Model.

### 2.8 Chapter Summary

This chapter is built on healthiness behaviour theories; Health Belief Model, Extended Parallel Processing Model and Diffusion of innovation theory that expound more on television messages and COVID-19 adoption behaviour amongst youths. According to the theories people depend on television messages and news which they analyze, engage, and disengage with. Television messages content has perceived susceptibility, severity, and efficacy beliefs components. Since the audience is active, they can judge

information aired through TV to create meanings which they may adopt or reject thus resulting to maladaptive or adaptive behaviour.

Therefore, COVID-19 TV messages have been given prominence in the mass media. Communication during a pandemic can be useful for health promotion to include public information, social marketing, and media advocacy, however, lead to adaptive and maladaptive behaviour as championed by TV messages. The TV educates people on the precautions to reduce chances of being infected. With the use of media, television influences people making them accept and apply certain health behaviour in their daily interactions. The TV raises public awareness on their health status resulting to adoption and rejection of COVID-19 vaccines amongst youths.

# CHAPTER THREE

# RESEARCH DESIGN AND METHODOLOGY

## 3.1 Introduction

This chapter presents the methodological approaches that were applied in the study and how the study was carried out. It entails a plan for data collection, measurement of the data, analysis, and presentation of the same (Kombo & Tromp, 2011). The chapter, therefore, outlines the research design, the study population, sampling frame, research tools, ethical issues, data collection procedures, pilot test and data processing and analysis procedures.

## 3.2 Research Design

Kothari (2004), defines research as the procedure for collection and analysis of data in a way that aims at combining significance with the purpose of the research. The study was mixed, and therefore, the data was analyzed qualitatively and quantitatively for validity of the study. The qualitative and quantitative data employed cross-sectional research design while qualitative data used content analysis.

The cross-sectional research design was applied to measure the outcome of television messages on COVID-19 versus the adoption of COVID-19 vaccine among youths in Kiambu County. The cross-sectional research design accounted for acceptance and rejection adoption behaviour and the accompanying exposures of the youths in Kiambu County especially when the vaccines were made available to every Kenyan (Kothari, 2004); 23rd August to December 2021, the period in which national COVID-19 vaccination in the country was rolled out (MoHK, 2021c).

Further, to describe the messages, the researcher employed content analysis. This is because the research topic was established on content analysis of television news content on COVID-19 pandemic for message elements to be derived from video clip. Additionally, more data was collected through questionnaires on effects of COVID-19 pandemic television messages and moderating variables effects. Thus, the investigator sought to find out the effects of COVID-19 television messages on vaccine adoption

behaviour among youths in Kiambu County by use of content analysis and questionnaires.

### 3.2.1 Philosophical Underpinning of the Study

This study was guided by the positivist research philosophy which assumes that reality is objective and is measurable through empirical observation and statistical analysis. The positivist paradigm enabled examination of the relationship between COVID-19 television messages and vaccine adoption behaviour among youths in Kiambu County, Kenya through hypothesis testing and statistical analysis. The positivist paradigm was appropriate because it allowed the researcher examine the relationship between COVID-19 messages and vaccine adoption using measurable constructs such as perceived susceptibility, perceived severity, response efficacy and self-efficacy. These variables were quantified and analyzed statistically to determine their effects on vaccine adoption.

Additionally, the study incorporated elements of pragmatism because it employed a mixed method research approach, where both qualitative and quantitative data were used. The pragmatism paradigm supports the use of multiple research methods for validity of complex social phenomena. By use of mixed method methodology, the study was able to capture statistical relationships while providing insights into the nature of COVID-19 television messages. Therefore, the combination of positivist and pragmatism provided appropriate philosophical foundation for investigating the effects of COVID-19 television messages on vaccine adoption behaviour among youths in Kiambu County, Kenya.

## 3.3 Study Population

According to Kothari (2017), a population consists of individuals, events, documents, organization, or the entire society. The entire set of subjects or objects that the researcher intends to research on and analyze the findings researched (Kombo & Tromp, 2011). Population of this study was the three television stations (Citizen TV, KTN and NTV) for content analysis and youths in Kiambu, Kenya.

Based on Media Council of Kenya state of the media report 2021, Citizen TV is the most watched TV station with 27% followed by KTN 11% then NTV 9% (MCK, 2021). Further, the MCK (2021), notes that 58% of Kenyan consume TV content in a typical day where the most watched content is news, followed by entertainment, religious content, and sports content.

The study used content analysis for COVID-19 TV messages dated from 23rd August to December 2021. Fairclough (1992) recommends data selection strategy emphasizing a *moment of crisis*. As such, the period of study focus is after the announcement of a third wave of COVID-19 in Kenya, massive impacts of COVID-19 in Kenya and the roll out for national COVID-19 vaccination in the country (MoHK, 2021c).

The youths in Kenya, are defined by the constitution as individuals under the age bracket of 18-35years. Based on a study by Joachim et al. (2022), on youths' hesitancy on COVID-19 vaccine, 52.0% out of 91.0 % of youths in Kenya had theories not to go for vaccines. They had a belief that the virus was not severe on youths, their immune was intact and waited to see how others reacted to vaccines. As such, this finding is an indicator that the number of youths going for vaccines was very low (Joachim, et al., 2022).

Going by the report from Ministry of Health Kenya dated 30th May 2022, approximately 8.45 million people had been fully vaccinated against COVID-19 country wide with only 579458 people from Kiambu County. These statistics of the fully vaccinated people in the county was very low (MoHK, 2022) against the MoHK 1.7 million people target by December 2021.

Further, according to Joachim et al. (2022), media actively engage with different sources of information. Joachim et al. (2022), found out that the common sources of COVID-19 content were social media at 40.30% followed by TV programs at 31.43% and then radio at 23.9%. As such, an indicator youths watch television content.

The study was narrowed down to Thika Town Constituency, Ruiru constituency and Kiambaa constituency in Kiambu County. They had five and above COVID-19 vaccine

centers (MoHK, 2021b). Thika Town constituency is highly populated; most developed and has the highest number of hospitals among other constituencies in the County while Ruiru and Kiambaa Constituencies comes as 2nd and 3rd in the list of the constituencies that had the highest number of vaccine centers. In addition, out of the 53 COVID-19 vaccine centers, 13 of them were in Thika Town Constituency, Ruiru constituency had 8 and Kiambaa town constituency had 6 centers (MoHK, 2021b).

### 3.4 Sampling Frame

Kothari (2004), highlights that a sampling frame is where a sample is derived from; list of all those within a population who can be sampled. The sampling frame for television messages and youth in Kiambu County is as discussed in the next page.

#### 3.4.1 Television Messages

This study targeted YouTube news videos from Citizen TV, KTN and NTV for content analysis of the television messages. This is because they are the most watched television stations in Kenya, with news content most viewed (MCK, 2021).

Further, for inclusion and exclusion of COVID-19 news videos, extensive filtering and search on YouTube was done by use of characteristics such as the titles of the videos (titles on COVID-19 pandemic), dates (23rd August to December 2021), duration (5 minutes and above), views (a thousand views and above), key words, and phrases touching on perceived severity, perceived susceptibility, and perceived efficacy beliefs.

Out of 106 videos found, only the first 30 news videos on higher counts viewership were taken for analysis for the three TV stations. The proportions of Television news videos to be analyzed were as illustrated in Table 3.1 below.

**Table 3.1: TV Stations Sampling Frame**

| TV station | Percentage of viewership by MCK | No. of videos |
|---|---|---|
| Citizen TV | 27% | 17 |
| KTN | 11% | 7 |
| NTV | 9% | 6 |
| **Total** | **47%** | **30** |

Source: (MCK 2021; Study, 2026)

### 3.4.1 Youths in Kiambu County, Kenya

Based on the target population a sample size of 384 youths in Kiambu County was determined using Fisher et al (1991), formula. The proportion of youths used in different constituencies were as illustrated in the Table 2.

**Table 3.2: Youths Sampling Frame**

| Location | Youths | Vaccine centers |
|---|---|---|
| Thika town Constituency | 185 | 13 |
| Ruiru Constituency | 114 | 8 |
| Kiambaa Constituency | 85 | 6 |
| **Total** | **384** | **27** |

Source: (MoHK, 2021)

### 3.5 Sample and Sampling Technique

A sample is regarded as the items that represent the entire population to be studied (Kothari, 2004). Further, Kothari (2004), portrays it as an accumulation of units selected from the population to stand for the entire units to be analyzed. For this study, the researcher got a sample size of the first 30 videos on higher counts viewership for analysis for the three TV stations.

Further, out of the entire population of youths in Kiambu County a sample of 384 youths in Kiambu County were used.

### 3.5.1 Sample Size Determination for Youths

There is no defined sample population of youths in Kiambu County. Since there is no estimation accessible of the quantity in the target population, Fisher et al. (1991), formula was used. Mugenda (2003), asserts that in social science research the principle of Fisher et al (1991), is suitable in determining the sample size in non-defined target population. Therefore, the sample size for this study was determined using the formula of Fisher et al. (1991):

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

n= the desired sample size (if the target population is > 10,000).

If there is no estimation available for the proportion in the target population the values for Z, p, q, and d are used as defined below;

Z= the standard normal deviation, set at 1.96, which corresponds to 95% confidence level.

P= the proportion in the target population estimated to have characteristics being measured. If there is no reasonable estimate, then use 50% (0.05)

q= p-1

d= the degree of accuracy set; it is usually set at 0.05 confidence level corresponding to 1.96.

$$n = \frac{(1.96)^2\ (.50)\ (.50)}{(0.50)^2}$$

= 384 youths

### 3.5.2 Sampling Technique

Kombo & Tromp (2011), define sampling technique as a process used by the researcher to get a population to study. In this study the researcher used criterion

sampling to select television messages on COVID-19 aired between August and December 2021. The researcher made extensive search on YouTube for news videos on COVID-19 by Citizen TV, NTV and KTN that were aired between 23rd August and December 2021.

Further, for inclusion and exclusion of news videos, the researcher used filters such as the titles of the videos, durations, and views. Further, key words and phrases touching on perceived severity, perceived susceptibility, and perceived efficacy beliefs were employed. Only the first 30 news videos on higher counts viewership were taken for analysis for the three TV stations.

Additionally, the study used simple random sampling and convenience sampling technique for respondents of the questionnaires. The simple random sampling enabled the researcher in selecting contributors who were clearly defined by obtaining list of constituencies in Kiambu County, then list of COVID-19 vaccine centers in each constituency, then selection was done on any constituency with five and above vaccine centers. Kiambu County has 12 constituencies, all the constituencies had COVID-19 vaccine centers and out of the 12, 3 constituencies had five and above COVID-19 vaccine centers (MoHK, 2021b).

Further, the convenience sampling allowed selection of contributors in a deliberate way and relevant practical criteria such as accessibility, proximity, availability, and willingness of participation respectively (Crossman, 2018; Kombo & Tromp 2006; Farrokhi & Mahmoudi, 2012). According to Farrokhi & Mahmoudi (2012), convenience sampling allows non-random sampling of samples close to the location of study, accessible, available, and willing to partake in the study. As such, for youth in each constituencies convenience sampling of households was done.

### 3.6 Research Instruments

#### 3.6 .1 Content Analysis

To derive the television messages on Covid-19, the researcher analyzed different videos clips from YouTube. The news video clips were analyzed using qualitative

content analysis as a research instrument. The content analysis instrument helped in compressing video clips content into COVID-19 messages transcripts. The transcriptions were done using Rask AI and YouTube software. The transcripts allowed the researcher to make suggestions and explanation on the unsaid, and dominance ideologies (Fairclough, 2003).

For content analysis the researcher used the already recorded clips thus preventing the inconsistencies between participants' accounts and data. Further, in order to guard the data against biasness and subjectivity the report analyzed from the video clips was then triangulated with quantitative data for validity and reliability of the results (Creswell, 2010).

### 3.6 .1 Questionnaire

Kombo & Tromp (2011), define a questionnaire as an instrument that contain questions in a self-administered survey. The questionnaires were preferred because they provide simple and straight forward approach to values and attitudes. They were self-administered because the population was able to read and write (Mberia & Mukulu, 2011).

The questionnaires had two sections; demographic and specific objectives section. The questionnaires were economical in terms of finances, energy, and time. Through the help of three research assistants, the questionnaires were self- administered to youths in Thika town constituency, Ruiru Constituency and Kiambaa Constituency. The questionnaires were given to youths gathered in randomly selected learning institutions, religious centers and health centers in the selected constituencies in Kiambu County.

Kothari (2004), explains that questionnaires are questions designed for the respondents to fill their answers. For intervening variables, the researcher used a questionnaire. This research instrument was beneficial since the youths in Kiambu County had adequate time to supply responses; the researcher provided enough time for filling the questionnaires before they were collected. The questionnaire had closed and open-ended questions on intervening variables of the study.

A total number of youths who completely filled the questionnaires were 346 out of 384 of whom 225 were females and 121 were males.

### 3.6.2 Validity and Reliability of Research Instruments

Validity was ensured through the use of accurate data collection method; content analysis and use of questionnaires. The content analysis and questionnaires were valid because they measured what they were intended to measure and gather data over the sample.

The questionnaires were consistent because confidentiality was upheld, saved time, and reduced respondents' bias since they were presented on paper format which prevented the respondents from changing the content and any other type of biasness.

Reliability demonstrates how consistent the measurements of research are. It refers to the stability and consistency of research tool to provide the same results in same situations but in different surroundings (Creswell & Miller, 2000). As such, the researcher ensured credibility of the data collected from different sources. A pilot survey was conducted for the purpose of testing the reliability and validity of the research instruments.

## 3.7 Data Collection Procedures

1. The researcher analyzed data from news video clips from Citizen TV, KTN and NTV for content analysis.
2. The researcher sought permission from the respective youths through constituencies' administrators for the participation in the study by filling in the questionnaires.
3. After obtaining the permission, for a period of two weeks, the researcher, by the help of trained research assistants administered questionnaires to youths from the sampled constituencies.

### 3.7.1 Ethical Considerations

1. Authorization was obtained from Jomo Kenyatta University of Agriculture and Technology (JKUAT), the National Council for Science Technology and Innovation (NACOSTI) and the constituencies administrators prior to conducting the research.
2. The researcher obtained informed consent from the respondents and participants; they participated voluntarily.
3. The researcher-maintained confidentiality at all times. The identity of the participants was concealed, and the information collected was only used for the study.
4. The researcher was honest when obtaining data and accepted individual responsibility for the conduct and the consequences of the research.

## 3.8 Pilot Test

The main purpose of the pilot study was to identify potential gaps and also measure internal consistency of the research tools. According to Creswell (2003), an approximate of 10-30% of the sample projected for the study is sufficient for pilot study and should be excluded from the main study. In order to ensure the research instruments gave reliable and valid results, a pilot test was conducted among youths in Nairobi County, Kenya; Starehe Sub-County. The questionnaires were administered to 30 respondents; 10.6% of the samples size without missing value.

The reliability of the research instruments was done using Cronbach's Alpha. The Cronbach's Alpha (α) ranges from 0.0 to 1.0; a negative alpha means the researcher needs to reverse the items. The closer the alpha is to 1, the higher the internal consistency. The minimally acceptable measure of reliability has been 0.70 (Robert & Priest, 2006). From the findings, the research tool was reliable. The findings were as indicated below:

**Table 3.3: Reliability Statistics**

| Variable | Perceived susceptibility | Perceived severity | Perceived response efficacy | Perceived self- efficacy |
|---|---|---|---|---|
| Perceived susceptibility | 0.002 | 0.000 | 0.004 | 0.000 |
| Perceived severity | 0.001 | 0.001 | 0.006 | 0.001 |
| Perceived response efficacy | 0.012 | 0.000 | 0.000 | 0.000 |
| Perceived self-efficacy | 0.002 | 0.000 | 0.000 | 0.000 |

Further, Content validity was determined by consulting the assigned university supervisors while construct validity was done using Correlation Pearson's.

- If Sig. < 0.05 instruments are valid
- If Sig. > 0.05 instruments are not valid
- The test found the tools valid as indicated in the table:

**Table 3.4: Validity Statistics (Pearson's Correlation)**

| Variable | Cronbach's Alpha | N of Items | Remarks | No. of cases |
|---|---|---|---|---|
| Perceived susceptibility | 0.757 | 7 | Accepted | 30 |
| Perceived severity | 0.798 | 6 | Accepted | 30 |
| Perceived response efficacy | 0.707 | 6 | Accepted | 30 |
| Perceived self-efficacy | 0.810 | 9 | Accepted | 30 |
| **Overall reliability statistics** | **0.813** | **28** | **Accepted** | **30** |

### 3.9 Data Processing and Analysis

This is the procedure of bringing order, organization and interpreting of the data gathered from the study location. It involves investigating what has been collected and making interpretations (Creswell & Creswell, 2003).

### 3.9.1 Qualitative Data

For qualitative data, collected from news video clips from Citizen TV, KTN and NTV were labeled into themes for analysis. The themes were then interpreted using thematic analysis on perceived severity, susceptibility, and efficacy beliefs.

#### 3.9.1.1 Video Analysis Guide

The unit of analysis in the current section was the COVID-19 television messages. The content analysis of the COVID-19 messages used the following guide.

**Table 3.5: Video Analysis Guide**

| TV Stations | YouTube links | Title of item | Transcriptions of item | Breakdown | Message elements Analysis |
|---|---|---|---|---|---|
| Citizen TV | | | | language | |
| NTV | | | | language | |
| KTN | | | | language | |

### 3.9.2 Quantitative data

The quantitative data derived from the questionnaires were analyzed using content analysis. The researcher used a code sheet when assessing the youths' adoption behaviour of COVID-19 vaccines in Kiambu County through questionnaires. The data was coded into common themes. By this all the participants involved were captured and important information noted. The data was then merged, summarized, and presented.

The questionnaires, arranged according to codes, were then analyzed using Statistical Package for Social sciences software. Inferential and Descriptive statistics were used to interpret the quantitative data obtained on variables appropriate to the objective of the study.

#### 3.9.2.1 Coding Sheet

The unit of analysis in the current research is the youths in Kiambu County, Kenya. The information was coded as shown:

**Demographics:** this was used to determine the vaccine adoption behaviour in different youths' demographics.

**The variable**; this was used to determine the effect of each variable.

**Type**; this was used to determine the exact subdivision of each variable.

**Description**; this was used to determine the described effects of media messages on COVID-19 vaccine adoption among youths.

**Scale**; this was used to ascertain whether there is acceptance or rejection.

**Measure**; this helped determine the youths' vaccine adoption behaviour

**Table 3.6: Coding Sheet**

| Demographics | Variables | Type | Description | Scale | Measure |
|---|---|---|---|---|---|

Source; (Study, 2026)

**Table 3.7: Summary Done on Objectives**

| Objective | Level of measurement | Statistics |
|---|---|---|
| To investigate the effects of COVID-19 television messages perceived susceptibility on vaccine adoption behaviour among youths in Kiambu County, Kenya. | Interval scale data | Odds Ratio's, ANOVA, Hierarchical Multiple Regression |
| To analyze the effects of COVID-19 messages perceived severity on the vaccine adoption behaviour among youths in Kiambu County, Kenya. | Interval scale data | Odds Ratio's, ANOVA, Hierarchical Multiple Regression |
| To examine the effects of COVID-19 television messages perceived response efficacy on the vaccine adoption behaviour among youths in Kiambu County, Kenya. | Interval scale data | Coefficients, Odds Ratio's, Hierarchical Multiple Regression |
| To find out the effects of COVID-19 television messages perceived self-efficacy on the vaccine adoption behaviour among youths in Kiambu County, Kenya. | Interval scale data | Coefficients, Odds Ratio's, Hierarchical Multiple Regression |
| To determine the moderating effects of demographic factors on the relationship between COVID-19 television messages and the vaccine adoption behaviour among youths in Kiambu County, Kenya. | Interval scale data | Hierarchical Multiple Regression |

### 3.9.2.1 Model Specification

A model specification is used to determine the independent variables to be included and excluded from a regression equation (Clarke et al., 2015). The study used the

following regression models to test the relationship between independent and dependent variables.

**Regression Model for Objective 1;**

**Ho$_1$**: *COVID-19 television messages perceived susceptibility have no significant effects on the vaccine adoption behaviour among youths in Kiambu County, Kenya*.

$$Y=\beta_0 + \beta_1 X_1 + e$$

Whereby;

Y = Vaccine adoption behaviour

$\beta_0$ = is the constant (Y- intercept) which is the value of dependent variable when all the independent variables are zero

$\beta_1$= are regression constants or the rate of change induced by $X_1$

$X_1$= Perceived susceptibility

**Regression Model for Objective 2;**

**Ho$_2$**: *COVID-19 television messages perceived severity have no significant effects on the COVID-19 vaccine adoption behaviour among youths in Kiambu County, Kenya.*

$$Y=\beta_0 + \beta_2 X_2 + e$$

Whereby;

Y = Vaccine adoption behaviour

$\beta_0$ = is the constant (Y- intercept) which is the value of dependent variable when all the independent variables are zero

$\beta_2$= are regression constants or the rate of change induced by $X_2$

$X_2$= Perceived severity

**Regression Model for Objective 3**

**$Ho_3$**: *COVID-19 television messages perceived response efficacy have no significant effects on vaccine adoption behaviour among youths in Kiambu County, Kenya.*

$Y=\beta_0 + \beta_3X_3 + e$

Whereby;

Y = Vaccine adoption behaviour

$\beta_0$ = is the constant (Y- intercept) which is the value of dependent variable when all the independent variables are zero

$\beta_3$= are regression constants or the rate of change induced by $X_3$

$X_3$= response efficacy

**Regression Model for Objective 4;**

**$Ho_4$**: *COVID-19 television messages perceived self-efficacy have no significant effects on vaccine adoption behaviour among youths in Kiambu County, Kenya.*

$Y=\beta_0 + \beta_4X_4+ e$

Whereby;

Y = Vaccine adoption behaviour

$\beta_0$ = is the constant (Y- intercept) which is the value of dependent variable when all the independent variables are zero

$\beta_4$= are regression constants or the rate of change induced by $X_4$

$X_4$= self-efficacy

**Regression Model for Objective 5;**

**$Ho_5$**: *Demographic factors have no moderating effects on the relationship between COVID-19 television messages and the vaccine adoption behaviour among youths in Kiambu County, Kenya.*

$Y=\beta_0 + \beta_1X_1*Z + \beta_2X_2*Z + \beta_3X_3*Z + \beta_4X_4*Z + e$

Whereby;

Y = Vaccine adoption behaviour

$\beta_0$ = is the constant (Y- intercept) which is the value of dependent variable when all the independent variables are zero

$\beta_1$, $\beta_2$, $\beta_3$, $\beta_4$= are regression constants or the rate of change induced by $X_1$*Z, $X_2$*Z, $X_3$*Z and $X_4$*Z

$X_1$= Perceived susceptibility
$X_2$= Perceived Severity
$X_3$ = Perceived response efficacy
$X_4$ = Perceived Self-efficacy
Z= Moderating variables
e=error

# CHAPTER FOUR

# RESEARCH FINDINGS AND DISCUSSIONS

## 4.1 Introduction

This chapter presents the key findings of the study. The chapter starts by presenting the response rate, then social demographic characteristics of the respondents, COVID-19 television messages, COVID-19 testing rate, COVID-19 vaccine adoption rate, perceived susceptibility analysis, perceived severity analysis and efficacy beliefs analysis, the chapter ends with moderating effects analysis. The analysis is followed by findings of data collected in line with the objectives of the study. The study used mixed method methodology, therefore, accounting for both qualitative and quantitative data.

## 4.2 Response Rate

The study sought to find out the effects of television COVID-19 messages on vaccine adoption behaviour among youths in Kiambu County, Kenya. The study targeted 384 respondents. Out of these 346 questionnaires were completed and returned hence a response rate of 90.1%. Additionally, 30 news items for Citizen TV, KTN and NTV from YouTube were identified and analyzed. The YouTube videos had 100% return rate. Nix et al. (2017), has it that a response rate of 30% and above is acceptable and the higher the response rate the more accurate the study is.

## 4.3 Social Demographics Characteristics of Respondents

The study determined the social demographics characteristics of youths who participated in the study. The demographics characteristics included age, gender, religion, and education. The distribution is presented in table 4.1:

**Table 4.1: Social Demographics of Respondents**

| Social demographics of respondents | | | | | |
|---|---|---|---|---|---|
| **Age** | **Frequency** | **Percentage** | $X^2$ | **df** | **p-value** |
| 18-24 | 284 | 82.1 | .003 | 2 | 0.008 |
| 25-30 | 46 | 13.3 | | | |
| 31-35 | 16 | 4.6 | | | |
| **Total** | **346** | **100.0** | | | |
| **Gender** | | | | | |
| Female | 225 | 65.0 | .009 | 1 | 0.009 |
| Male | 121 | 35.0 | | | |
| **Total** | **346** | **100.0** | | | |
| **Religion** | | | | | |
| Christian | 295 | 85.3 | .910 | 2 | 0.668 |
| Muslim | 40 | 11.6 | | | |
| Traditional | 11 | 3.1 | | | |
| **Total** | **346** | **100.0** | | | |
| **Level of education** | | | | | |
| Primary & below | 3 | 0.9 | .039 | 3 | 0.008 |
| Secondary | 17 | 4.9 | | | |
| Vocational/college | 96 | 27.7 | | | |
| University | 230 | 66.5 | | | |
| **Total** | 346 | 100.0 | | | |

### 4.3.1 Age of the Respondents

From the table, majority of the youths were aged between (82.1 %) 18-24. This was followed by respondents aged between 25 to 30 and 31 to 35 years, 13.3% and 4.6% respectively. Combined the two age groups accounted for 17.9% of all the respondents. This asserts that those aged between 18 to 24 years took or did not take COVID-19 vaccines. From the frequencies, vaccine adoption differs across different ages, 174 out 284 youths aged 18 to 24 rejected the vaccines. Further, 23 youths out 46, 5 out of 16 youths aged 25 to 30 and 31 to 35 years respectively rejected vaccines. The number decreased with age increase.

Further, regarding whether there was any statistical relationship between age and vaccine adoption behaviour among youths in Kiambu County, Chi-square test with p value set at P=0.05 was done. The test returned statistically significant results ($X^2$ =.003, df= 2, P= 0.008).

The findings on age, agrees with studies conducted by Osur et al. (2022), that indecision on vaccine adoption uptake remains high among youths compared to elderly. Borrowing from the same study on vaccine acceptance amongst youths in Kenya by Osur et al. (2022), youths are hesitant to go for vaccines and would wait and see how others reacted to vaccines before accepting them. Further, according to Bhattacharya (2023), youths aged 18 to 24 years have a tendency of overestimating their life risk due to high immunity level however they are at risk of contracting the pandemic.

### 4.3.2 Gender of the Respondents

From table 4.1, most of the respondents were females. 65% were females and 35% were males. 225 females out of 346 respondents participated in the study. This distribution shows most women went for COVID-19 vaccines compared to men. Gender remains marginalized in global vaccines response (Nassiri-Ansari et al., 2022).

Further, to test whether there was any statistical relationship between gender and vaccine adoption behaviour among youths in Kiambu County, Chi-square test with p value set at P=0.05 was done, the test returned statistically significant results ($X^2$=0.009, df=1, P= 0.009).

The findings on gender agrees with prior studies conducted by Osur et al. (2022), that gender characteristics had effects on vaccine adoption behaviour among youths. Further in studies on vaccine coverage challenges, females are less likely than males to receive legit vaccines due to digital gaps, education gaps, work and domestic responsibilities (Flor et al., 2022).

Sileo et al. (2024), notes that there has been more COVID-19 hospitalization and deaths among men compared to the women. Women hesitancy has been documented; however, this do not translate to actual behaviour. This is because women use health facilities and services compared to men (Betarkis et al., 2000) and therefore, they may engage in COVID-19 prevention strategies compared to men (Sileo et al., 2024).

### 4.3.3 Religion of the Respondents

From table 4.1, the findings reveal that more than 85.3 % of the respondent were Christian, 11.6% were Muslims and 3.1% were traditional. This distribution demonstrates that majority of the youths in Kiambu County were Christians followed by Muslims. This agrees with a study done on *religiosity and beliefs towards COVID-19 vaccines among adults in Puerto Rico by Lopez- Cepero et al. (2022)*, that adoption of COVID-19 vaccines differ based on the religious links.

Regarding whether there was a statistical relationship between religion and vaccine adoption behaviour among youths in Kiambu County, a Chi-square test with a p value set at P=0.05 was done, the test returned a statistically insignificant results ($X^2$= 0.910, df=2, p=0.668).

These findings are contrary to Osur et al. (2022): Tolia et al. (2022); Lopez et al. (2022) that have found religion to have influenced hesitancy. Religiosity may influence vaccination however not very clear on its association with COVID-19 vaccination rejection. In a similar study on vaccine hesitancy among religious groups, Kibongani et al. (2022), notes that individual decision on uptake or non-uptake of vaccines among religious groups is not only attributed to religious affiliation, this is because positive trends are observable regardless of barriers to vaccines uptake. Further, Mao et al. (2024), on pro-religion attitudes of vaccination coverage, notes that countries with knowledge on science had higher vaccine adoption regardless of religious beliefs. In addition, vaccine intention can be improved if endorsed by religious leaders and authority (Mao et al., 2024).

Further, studies conducted on *Evangelicals and COVID-19 vaccine hesitancy in USA by Guidry et al. (2022*), notes, evangelical Christians are most hesitant to get COVID-19 vaccines because the vaccines interfered with their beliefs. In addition, they interfered with their divine providence and the manufacturing of vaccine applied aborted stem cells; science conflicts with their beliefs. Therefore, involvements of awareness and increased adoption of control measure during health crisis in multi-religious groups should factor in the changing religious beliefs so as plan and implement effective health control programs.

### 4.3.4 Education Level of the Respondents

As presented in table 4.1, those respondents who attained primary school level of education and below were 0.9 %, those who attained secondary level were 4.9%, while 27.7 % had college education and 66.5% who were the majority had attained university education and above.

Further, this distribution portrays that most of the youths in Kiambu County had ability to comprehend COVID-19 stories aired in TV. However, to cater for the 0.9% who had attained primary level of education and below the Covid 19 stories were aired via vernacular TV stations and in Kiswahili. This is evident by the responses on TV stations watched, 25 responses were given on other TV stations apart from Citizen TV, NTV, KTN, the Inooro TV was viewed by 5 respondents, Kameme by 2 respondents, K24 by 7 respondents and TV47 by 11 respondents.

Regarding whether there was a statistical relationship between the level of education and vaccine adoption behaviour among youths in Kiambu County, a Chi-square test with p value set at p=0.05 was done, the test returned statistically significant results ($X^2$=0.039 df=3, p=0.008). This distribution disagrees with Orangi et al. (2021), study *on assessing the level and determinants of COVID-19 vaccine in Kenya*, found that some demographics have influence however the level of education has no significance on vaccine hesitancy, but individual's COVID-19 risks perceptions and impacts determine the level of hesitancy.

## 4.4. Vaccine Adoption

### 4.4.1 COVID-19 Testing Rate

The study sought to find out whether the youths in Kiambu County, Kenya had gone for COVID-19 testing and what made them go for testing. The findings were as presented in tables 4.2 and 4.3.

**Table 4.2: Testing Rate**

| COVID-19 testing | | | | | |
|---|---|---|---|---|---|
| | | **Frequency** | **Percent** | **Valid Percent** | **Cumulative Percent** |
| Valid | yes | 84 | 24.3 | 24.3 | 24.3 |
| | no | 262 | 75.7 | 75.7 | 100.0 |
| | **Total** | **346** | **100.0** | **100.0** | |

Based on the findings above only 84 (24.3%) youths in Kiambu County had been tested for COVID-19 and 262 (75.7%) out of 346 youths had not been tested for Covid-19. These findings demonstrates that there was low turnout for COVID-19 testing.

**Table 4.3: Reasons for COVID-19 Testing**

| Reasons for testing | | | |
|---|---|---|---|
| | | **Frequency** | **Valid Percent** |
| Reasons | Underlying sign | 18 | 22.0 |
| | Mass testing | 41 | 47.5 |
| | Travel permits | 25 | 30.5 |
| | **Total** | **84** | **100.0** |

Based on the findings on table 4.3, the youths had different reasons for going for COVID-19 testing. 22% youths went for testing due to COVID-19 underlying signs, 47.5% youths because mass testing was rolled out for free by the government and 30.5% youths went for Covid-testing because they needed to travel to different destinations where a travel permit was required.

### 4.4.2 Vaccine Adoption Behaviour among Youths

The study sought to find out on whether the youths had received COVID-19 vaccines. The finding on vaccine adoption rate was as illustrated in figure 4.1.

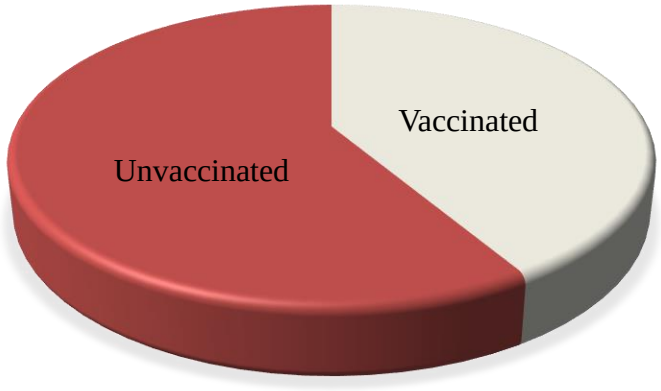



**Figure 4.1: Vaccine Adoption Rate**

Based on the figure 4.1 above the study found out that majority of youths in Kiambu County had not been vaccinated. 202 (58.4 %) out of 346 youths had not received vaccines and 144 (41.6%) youth had been vaccinated with different vaccines. Media is a key tool in fight against pandemic. This is because how the media designs and disseminates news influences mitigation measures. Increasing vaccines hesitancy was noted globally (Kennedy, 2020; Richmond et al., 2020).

This finding collaborates with Osur et al., (2020), that regardless of availability of COVID-19 messages and free vaccines the uptake of the same remained low among youths. 65.0% of youths correlated their rejection of vaccines to information, drug effectiveness and safety 42.0% and 45. % respectively (Osur et al., 2022). Further, Sileo (2024), notes that there was hesitancy of COVID-19 vaccine adoption across different demographics.

### 4.4.3 Number of Times Vaccinated, Type of Vaccine and Year Vaccinated

To investigate further on vaccines uptake, the study sought to find out on the number of times each youth was vaccinated, type of vaccines and year vaccinated. The findings are represented in the figures 4.2, 4.3 and 4.4.

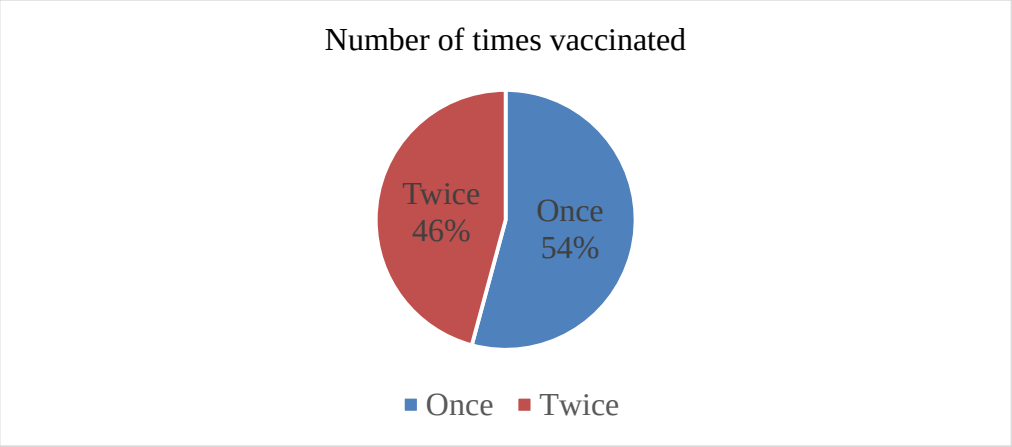



**Figure 4.2: Number of Times Vaccinated**

Based on the figure, majority of youths had been vaccinated once at 54% followed by twice at 46%. These findings demonstrates that youths in Kiambu County went for only one dose of the COVID-19 vaccine and failed to go for booster vaccines as it was required by the government. This distribution disagrees with Soheili et al. (2023), study on *the efficacy and effectiveness of COVID-19 vaccines around the world*, that the second dose produced reliable response and higher effectiveness than a single dose.

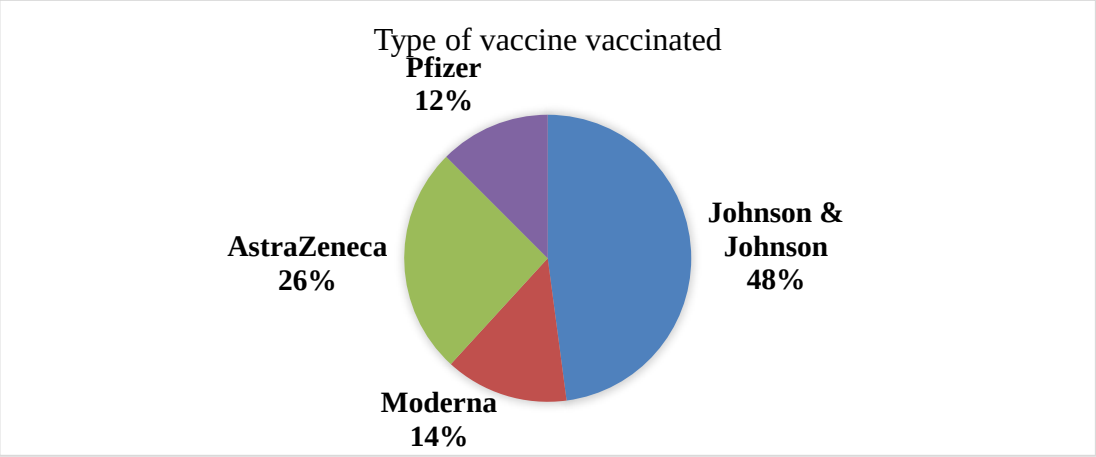



**Figure 4.3: Type of Vaccine Used**

Further, majority of youths had gone for Johnson & Johnson vaccines at 48% followed by AstraZeneca at 26% then Moderna and Pfizer at 14% and 12% respectively. The vaccines were effective for protecting against virus causing Covid-19. The efficacy and safety concerns of each vaccine had a strong relationship on the individual's willingness to go for it and thus affected uptake behaviour (Feemster, 2020), also the belief that some vaccines had adverse effects compared to others influenced choice and adoption (Sunstein et al., 2020; Soares et al., 2021).

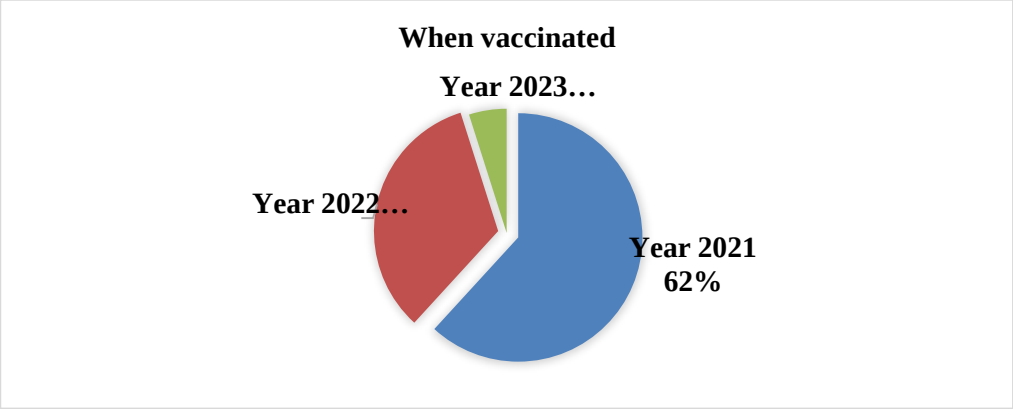



**Figure 4.4: Year Vaccinated**

Additionally, as represented in the figure 4.4, most of the youths were vaccinated in 2021 at 62 % followed by 2022 at 33% and 2023 at 5%. The vaccine adoption rates reduced with time. These finding agrees with a study by Hoang et al. (2021), that public's focus on a crisis is not for long since the interest is at the onset of the pandemic and there is gradual decrease of interest as it progresses.

### 4.4.4 Effects of Television COVID 19-Messages on Youths' Feelings

The study sought to find out the effects of COVID-19 television messages on youths' feelings. The findings were as presented in figure 4.5.

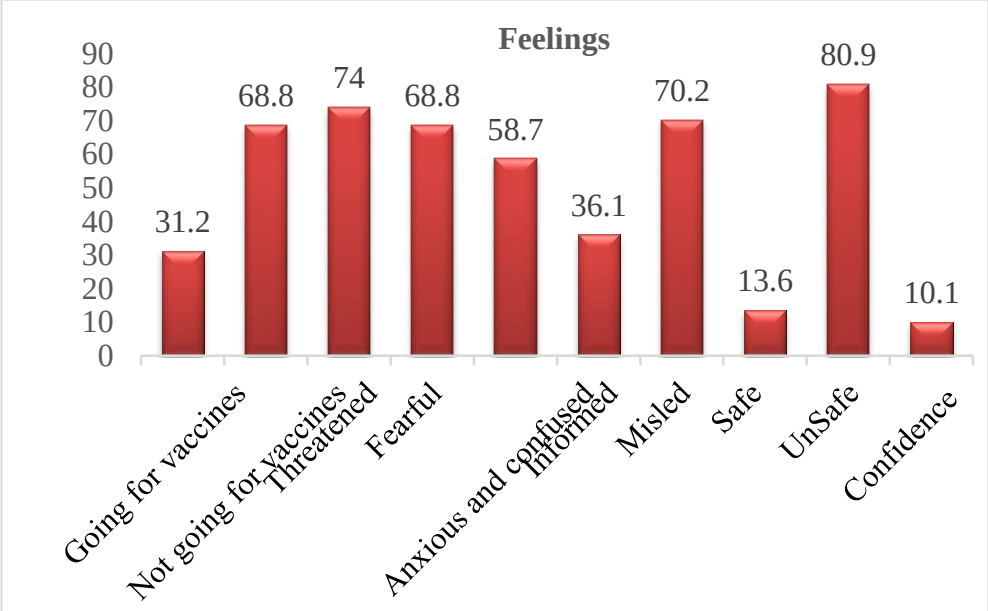



**Figure 4.5: Effects of COVID-19 TV Messages on Youths' Feelings**

Based on the figure above, youths felt differently based on the COVID-19 messages they watched. Out of 346 respondents 339 responded to the question: how did COVID-19 stories you watched made you feel? As represented in the graph above, 31.2% respondents felt like going for vaccines while 68.8% felt like not going for vaccines, 74% felt threatened, 63.6% felt fearful, 58.7% felt anxious and confused, 36.1% felt informed, 70.2% felt misled, 13.6% felt safe, 80.9% felt not safe and 10.1% felt confidence.

The response on the feelings demonstrates that majority of youths lacked confidence after watching a series of COVID-19 vaccines, they then felt unsafe, then misled, followed by fear, threat and lastly anxiety and confusion. COVID-19 news was inevitable due to lockdown (Montazeri et al., 2023) and the pandemic had huge global effects on people. Therefore, these findings concludes that the COVID-19 messages elicited feelings. This is supported by Montazeri et al. (2023), who notes that infodemic and disinformation by different media platforms elicited feelings.

Further, the overabundance of information made difficult for people to find objective information thus eliciting anxiety and confusion and the more the information the more they felt misled (Montazeri et al., 2023). As documented by Rahman et al. (2022);

Verma et al. (2022), COVID-19 misinformation led to increased stressful disorders and the common were anxiety, fear and depression. These stressful disorders may amplify feelings of rejection or acceptance of protocols put in place and in other instances cause lack of confidence on control measures.

### 4.5 COVID-19 Television Messages Elements

To derive television messages on COVID-19 the researcher analyzed different YouTube video clips using qualitative content analysis. For inclusion and exclusion of COVID-19 news videos, extensive filtering and search on YouTube was done by use of characteristics such as the titles of the videos (titles on COVID-19 pandemic), dates (23rd August to December 2021), duration's (10 minutes and above), views (a thousand views and above), key words, and phrases touching on perceived severity, perceived susceptibility, and perceived efficacy beliefs.

Only the first 30 news videos on higher counts viewership were taken for analysis for the three TV stations. The researcher used Rask AI and YouTube software to compress COVID-19 news messages into transcripts. The transcripts allowed the researcher to make suggestions and explanation on the unsaid, and dominance ideologies. The findings are as represented in the table:

**Table 4.4: COVID-19 Television Messages**

| Message elements | Citizen | KTN | NTV |
|---|---|---|---|
| Perceived severity | 17 | 7 | 6 |
| Perceived susceptibility | 16 | 7 | 6 |
| Perceived self-efficacy | 1 | 0 | 1 |
| Perceived response efficacy | 16 | 6 | 5 |

From table 4.4, COVID-19 television messages had different elements. From a sample size of 30 YouTube videos dated from august 2021 to December 2021 a period after the announcement of the 3rd wave of COVID-19 in Kenya (MoHK, 2021c).

As tabulated, out of 17 videos analyzed from Citizen TV, 17 videos had perceived severity elements, 16 perceived susceptibility elements, 1 perceived self-efficacy elements and 16 perceived response efficacy elements. Further, out of 7 from KTN 7

had perceived severity elements, 7 had perceived susceptibility and 6 had response efficacy elements. Also, out of 6 from NTV 6 had perceived severity elements, 6 had perceived susceptibility elements and 5 had perceived response efficacy elements.

These findings demonstrate that during any pandemic the media and for this study television used different frames for information and influence on publics. In health messages, the possible behavioural decisions are dependent on the presentation of messages. The media majored in threat appeals and response efficacy frames. The usage of severity and susceptibility was high, followed by response efficacy. Also, the majority of the messages had more than one element and combined several message elements. According to Witte, (1992) severity and susceptibility elements elicit fear which leads to danger control or not. Individuals weigh severity and probability of risk as unique attributes when deciding on whether to act or not.

According to Lamba et al. (2023), the degree of severity is described using terms as mild, moderate, profound and severe. Severe messages are used often to reduce unhealthy behaviour. However, this is not always the case since the threatening messages result in defensive mechanism (Rao et al., 2024). The severity messages usually have informative and warning elements where scary pictures and information (COVID-19 *Kills, COVID-19 is a killer disease*) is widely used. The Kenyan news on COVID-19 had such terms and the severe messages came in to warn or inform the society, for example;

> "*This Monday the country has recorded 3297 new Covid- 19 cases out of a sample size of 4003 this is a positivity rate of 30.1 percent..." From KTN news* **(** https://youtu.be/h1QZL2Vlm7M )

**Further as echoed by the former Health Cabinet secretary*:***

> *"If we continue to behave normally, the disease will treat us abnormally wear mask, keep distance, sanitize always and save lives..."*

**Further from Daily Nation:**

**"The new, weird symptoms associated with COVID-19 by Elizabeth Merab (06 June 2020)**

**What you need to know:**

- *Relatively new symptoms include diarrhoea, **acute** kidney failure and low blood pressure due to inflammation of the heart muscles.*
- *Increasingly, Kenyan patients who test positive for the virus are also reporting that they cannot taste or smell.*
- *Even worse is the fact that most of these difficult-to-identify symptoms can only be detected when the patient is hospitalized.*

*Fever, dry cough, fatigue, sore throat, aches and pains are most commonly reported symptoms...However as the virus spreads...it is emerging that these are not the only symptoms to look out for. For instance, people have presented **less typical symptoms** such as nausea, diarrhea, delirium, loss of smell and taste...people with vague, **atypical symptoms** of COVID-19 may go on to develop more **classical symptoms**...How COVID-19 presents differs from individual to individual..."*

Further, from the analysis, it was noted that at the onset of the pandemic the COVID-19 messages had severity and susceptibility appeals, however as the pandemic progressed the messages had more of severity appeal and response efficacy appeal. This agrees with fear appeal theories that threatening messages cannot always be effective not unless the severity messages are combined with coping messages; *feelings of what can be done to avert COVID-19* (Siddiqi, 2023; Adolphs et al., 2023). For example, borrowing from ***WHO Director-General's open remarks at media briefing on COVID-19 -11th March 2020***. The media briefing had a lot of fear/threat appeals.

> *"…in the past two weeks, the number of cases of COVID-19 outside China has increased 13-fold, and the number of affected countries has tripled.*

*There are now more than 118, 000 cases in 114 countries, and 4291 people have lost their lives.*

*Thousands more are for their lives in hospitals.*

*In the days and weeks ahead, we expect to see number of cases, the number of deaths and the numbers of affected countries climb even higher.*

*WHO has been assessing this outbreak around the clock and we are deeply concerned by the alarming levels of spread and severity, and by the alarming levels of inaction.*

*We have therefore made assessment that COVID-19 can be characterized as a pandemic. Pandemic is not a word to use lightly or carelessly. It is a word that if misused it can cause unreasonable fear or unjustified acceptance that the fight is over, leading to unnecessary suffering and death…*

*We have never seen before a pandemic sparked by Coronavirus. This is the first pandemic…and we have called every day for countries to take urgent and aggressive action. We have rung the alarm bell loud and clear…"*

Noticeably from the analysis it is reported that the severity and response appeals were in almost all the television messages aired during the pandemic and preventive campaigns materials. For example, transcriptions of the YouTube videos as aired by the three sampled TV stations.

***From KTN;***

**Covid Situation in Kenya: 1,354 new positive cases recorded out of a sample size of 5,331**

*"This Monday the country has recorded 3297 new Covid- 19 cases out of a sample size of 4003 this is a positivity rate of 30.1 percent that is 10 new deaths have been reported from the disease raising the death toll to 5394..."* https://youtu.be/h1QZL2Vlm7M

*From Citizen TV;*

**COVID-19 positivity rate hits 24.4% as MoH reports 1,372 new cases**

*"We begin the bulletin with the deepening COVID- as the country witnesses' resurgence of infections with the positivity rate hitting as hospital admissions continue to soar. Nairobi, Kiambu and Machakos counties lead in the number of infections. Here are more details from our reporter...The surging rate of COVID- nineteen infections has been the cause of worry in the country over the last few days. The latest statistics by the Ministry of Health showing a high positivity rate of twenty-four-point four percent from a sample size of five thousand six hundred and thirty-five that was tested in the last twenty-four hours. One thousand three hundred and seventy-two people tested positive for COVID- nineteen within the ...same period. Nairobi County leads with the number of new infections at eight hundred and thirty-six..."* ( https://youtu.be/2sbOZf_wIU4).

*Further from NTV;*

**Battle for Breath; Exclusive look into Kisumu's COVID-19 wards**

*"I have seen seven people die by my side. I would feel that the next minute I was also going"- Daniel Achieng "Oxygen supply is something that no one should joke with at this juncture" - Jayson Ogova* (https://youtu.be/ctbkyuEIHns )

In support of this, Chaiuk & Dunaevska (2020); Yoshioka & Maeda (2020), notes that besides extensive coverage of pandemics, the media use different techniques such as message elements or frames, symbols, and metaphors to describe and amplify risk. For this case, the severity appeal amplified the risk and created a lot of fear. The more the pandemic was portrayed as severe the more the fear was intensified, and the disease was regarded as serious.

Borrowing from extended parallel process model, severe messages contain fear appeal which leads to appraisal of threats and appraisal of the recommended response. For these three transcriptions, by describing the positivity rate and deaths intensified fear and confusion which resulted in no response, response, or rejection and in other

instances eliciting stigmatization. Excess fear can make the emotions dominate the thought process and individuals end up not controlling the threat but rather dealing with fear (denying they are susceptible) (Mberia & Mukulu, 2011).

In studies done by Brown & Smith (2007), on inhibitory effect of distressing ant-smoking messages on risk perception where respondents were subjected to distressing and less distressing pictures in booklets agree that severity messages may not always be effective. After respondents read the booklets, it was found that respondent who read distressing messages lowered risk perception and evaluated the messages negatively compared to respondents in less distressing condition. Thus, a recommendation to have messages inducing fear and at the same time raising efficacy through response messages, by so doing there is higher probability of increasing risk perceptions (Ten Hoor et al., 2012).

Additionally, from the analyzed YouTube videos many messages had both severity and response-efficacy appeals. For example, from the three sampled TV stations the messages had both severity and response efficacy appeals.

**From Citizen TV**

**Kenyans Urged to Observe COVID-19 Protocols;**

*"The ministry of health is calling on Kenyans to observe COVID-19 safety protocols to contain the rise in the number of Covid cases in the country the health chief administrative secretary Mercy Mwangangi says the surge in the number of cases is worrying and called on Kenyans who have not received the Covid 19 vaccine to do so the country's positivity rate stood at 9 with 280 new cases recovered from a sample size of 3015*. (https://youtu.be/6C1OX-vhxG0)

**From NTV**

**Lockdown looms following increase of COVID-19 cases**

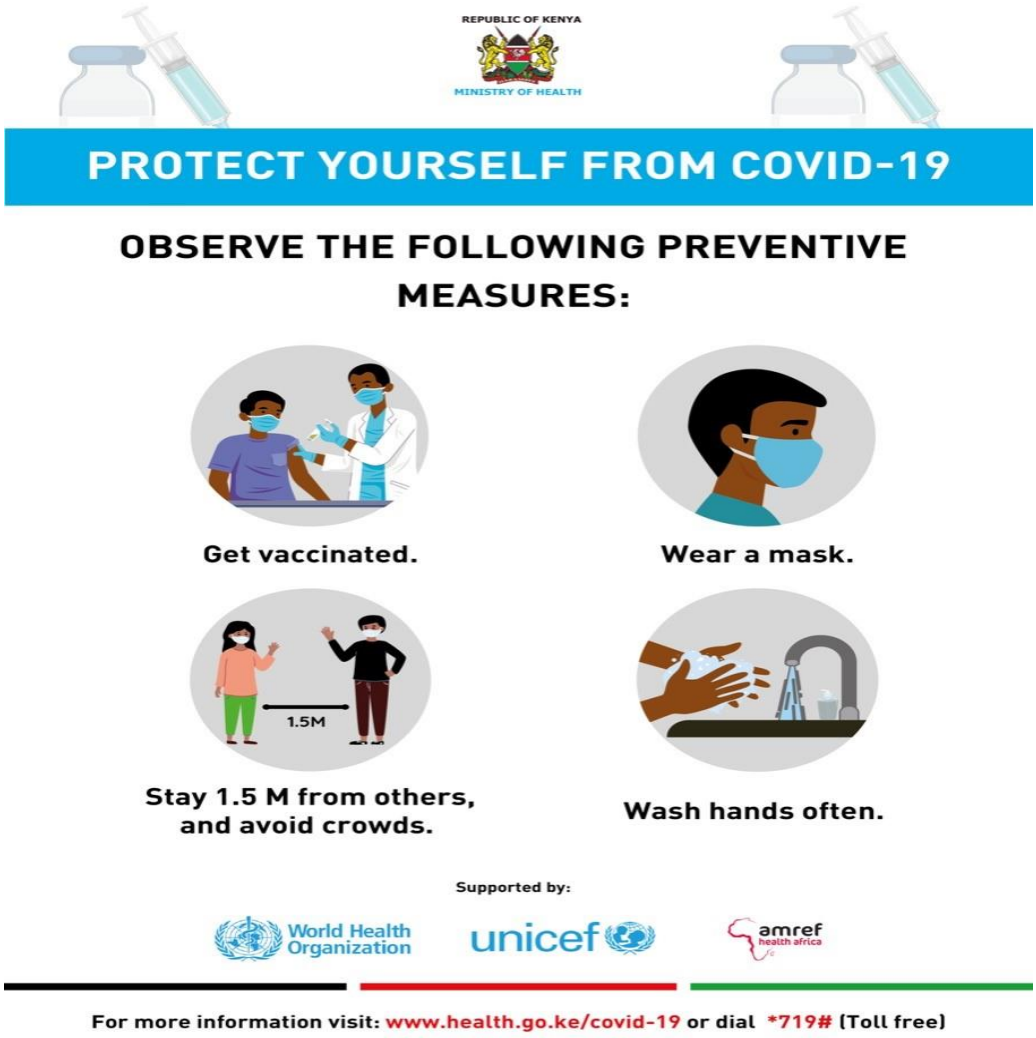
*"The increment of covid- cases are alarming. The measures will be put in transportation sector and more measures for lockdown"* https://youtu.be/Os-fs103p-I

**From KTN**

*"A disease that has no treatment or cure has caused havoc in many countries, not sparing even the most developed of economies. For the last 100 days since its first case,* ***Kenya has tried to step up its efforts to aggressively contain the virus****, but the numbers seen so far might be an indication of a country living at the mercy of the virus."* https://youtu.be/d-9TK9qWtjg

These techniques aid in shaping society's perception of risk and control measures. Further, people acquire certain beliefs, behaviour and views based on the pandemic messages' elements (Mehiriz & Gosellin, 2021). Borrowing from EPPM if the threat is perceived to be severe for instance, *the increment of COVID-19 cases is alarming,* then fear is elicited leading to appraisal of efficacy beliefs. People response is based on the seriousness of the threat, the processing of the message on threat as irrelevant results to unevaluated efficacy thus no response.

Further, response appeals pertain the beliefs on effectiveness of response recommended in dealing with the threat, for example, *taking COVID-19 vaccine boost my immunity and therefore I will not contract the pandemic*. The pandemic TV messages had response appeals, which were also aired via other means of communication as shown below.




Further, television COVID-19 news were sources of risk related information as Kenyans made decisions on whether to observe protocols put in place or go for vaccines. By airing fear messages through analysis of daily new infections, deaths, recovery, those in ICU and home-based care unit per different demographics (counties, gender and age) showed the probability of infections (I *can contract Covid-19, or I cannot contract Covid-19*). The extent to which individuals considered COVID-19 to be probable led to attitudes, COVID-19 behavioural control and information seeking on the pandemic.

Borrowing from HBM and EPPM threat messages comprises of two aspects: *Perceived severity and susceptibility*. The susceptibility; too much fear may not lead to desired results since people who are at risk of contraction pay least attention

to threatening messages. In COVID-19 news reports on infections and recoveries the pandemic was perceived as either probable or highly probable. For three sampled TV stations the messages had susceptibility appeals.

**MOH alarmed by the rising COVID-19 infections in the Country**

*In the last 24 hours, the positivity rate has jumped to a worrying 18%, sparking fears of a new wave. Health cabinet secretary Mutahi Kagwe says the current spark has* https://youtu.be/BkRHvR1ZUgM

**COVID-19 positivity rate at 30.6% as MOH announces 1,223 new cases**

*The COVID-19 rate has continued on an upward trend today after 1223 people tested positive for the disease, from a sample size of 4,003 tested in the last 24-hours…* https://youtu.be/3LOPhJkG0HI

Further, individuals differ in belief of being able to deal with stressors or health pandemics. Perceived self-efficacy is as a result of information at hand. The pandemic led to anxiety arousal which interfered with the level of confidence towards control of the pandemic (Kuntz, 2021). For example, the following transcripts shows that the public's belief on pandemic control was an issue.

**Uhuru says civil servants will not be forced to get COVID-19 jabs**

*"Over two million COVID-19 vaccines doses have expired as Kenyans remain hesitant to roll up their sleeves and get jab. The ministry of health says daily vaccinations have dropped from 200,000 to around 7000. The problem cuts across the east Africa region with an estimated 40 million COVID-19 doses at risk of expiry, due to vaccine apathy…"* https://youtu.be/-dy9ll_pnQw

**Over two million COVID-19 vaccine doses expire as Kenyans remain hesitant to get the jab**

*"It is a relief to civil servants across the country, as President Uhuru Kenyatta directs that no one should be forced to take COVID-19 Jabb. The president's order*

*coming day after the expiry of the August 23rd deadline when all state officers were required to get the jab. With a surge in COVID-19 infections, the president is adamant that reopening of the economy will largely be dependent on the uptake of vaccines among the population…"* https://youtu.be/GbqZRIJEoBY

The two transcripts show there was COVID-19 vaccination apathy across all socioeconomic groups. People were disinterested and had attitudes towards the various vaccines. Nagelhout et al., (2016); Siddiqi (2023), argue that what persuades people differs by the level of involvement in the decision, however regardless of the involvement and a lot of messages on vaccination and COVID-19 control measures, defensive reactions were evident. The vaccines were key intervention in response against the COVID-19 pandemic, they helped in protecting from infection, severity of Covid-19, death and block infection from infected to uninfected. Despite the urgent and compelling need for COVID-19 vaccination, the apathy and profound hesitancy were ingrained in the society.

### 4.6 COVID 19 on Our Kenyan TV

The message elements were captured and showed relationship with youths' vaccine adoption behaviour. For quantitative data a total of 346 youths aged between 18-35 years were included making the response rate 90.1%. The calculation of sample size was done using fisher et al. (1991), formula. The quantitative data was triangulated with data analyzed from television messages elements from different TV stations.

#### 4.6.1 Frequency of TV Viewership on COVID-19 Messages by Youths

The study sought to find the youths distribution by watching COVID-19 stories on TV. The findings are as presented in the table 4.5.

**Table 4.5: Frequency of Viewership of COVID Stories**

| Response | Frequency | Percent |
|---|---|---|
| **Yes** | 339 | 98 |
| **No** | 7 | 2.0 |
| **Total** | **346** | **100.0** |

From table, most youths in Kiambu County had watched Covid -19 stories from different TV stations. Based on the question whether they had watched COVID-19 stories on Kenyan TV, 339 (98%) had watched while 7 (2.0%) had not watched. The response demonstrates that most youths in Kiambu County had watched COVID-19 stories.

This is evident that a swiftly growing media atmosphere has a role on health issues. For instance, Rooke (2021), agrees that media and for this case television passed information pertaining risk, aired facts and uncertain facts on pandemic. This is because the media landscapes have presented opportunities for content dissemination which in turn influence precautions and prevention of risks. Therefore, it was possible to continue with data analysis on vaccines adoption behaviour among youths in Kiambu County, Kenya.

### 4.6.2 COVID-19 Viewership, Frequency, Programmes, and Televisions in Kenya

The responses captured those who had watched COVID-19 stories, how often, which television stations and the programmes through which COVID-19 content were aired through. The data is as represented in table 4.6.

**Table 4.6: TV Stations, Frequency, and Programmes**

| | TV viewership | |
|---|---|---|
| **Station** | **Frequency** | **Percentage** |
| Citizen TV | 161 | 47.5 |
| KTN | 28 | 8.3 |
| NTV | 29 | 8.6 |
| All the three | 96 | 28.3 |
| Others | 25 | 7.4 |
| **Total** | 339 | 100.0 |
| **How often** | | |
| Daily | 248 | 73.2 |
| Weekly | 61 | 18.0 |
| Monthly | 30 | 8.8 |
| **Total** | 339 | 100.0 |
| **Programmes** | | |
| News | 291 | 85.8 |
| Features | 15 | 4.4 |
| Talk shows | 33 | 9.7 |
| **Total** | 339 | 100.0 |

From table, majority of respondents had watched COVID-19 stories in Citizen TV, followed by NTV, then KTN, all the three TV stations and then by others. Out of 339 youths who had watched COVID-19 programmes, 161 (47.5%) had watched Citizen TV, then 29 (8.6%) had watched NTV, then 28 (8.3%) had watched KTN, then 96 (28.3%) had watched the three TV stations (Citizen TV, NTV and KTN) and 25 (7.4%) had watched other TV stations in Kenya.

Further, 248 (73.4%) watched COVID-19 messages daily, 61 (18 %) respondents had watched the pandemic messages on weekly basis and 33 (9.7 %) watched the messages on monthly basis. In addition, out of 339 respondents, 291 (85.8%) youths watched news followed by 15 (4.4%) feature stories and then 33 (9.7%) watched talk shows. The responses demonstrates that most youths had watched news items and talk shows on COVID-19 through Citizen TV. These viewership patterns with Citizen TV and COVID-19 news programmes leading collaborates with Media Council of Kenya state of the media report where Citizen TV is the most watched with 27%. Further, 58% of Kenyans consumes TV content in a typical day where the most watched programmes are news, entertainment, religious content, and sports (MCK, 2021).

### 4.6.3 Other Sources of COVID-19 Messages

The study sought to find out other sources of COVID-19 information apart from television. This was to answer the question of where youths who had not watched COVID-19 stories got Covid information from. The findings are as presented in table 4.7.

**Table 4.7: Other Sources of COVID-19 Messages**

| Other sources | Vaccine adoption | | Total | $X^2$ | df | p-value |
|---|---|---|---|---|---|---|
| | **Yes** | **No** | | | | |
| Radio | 1 | 1 | 2 | .427 | 1 | 0.439 |
| Internet | 1 | 4 | 5 | | | |
| **Total** | **2** | **5** | **7** | | | |

From the table, 7 (2%) youths had not watched COVID-19 messages from televisions stations in Kenya. 2 (0.6%) had received COVID-19 messages via radio while 5 (1.4%) youths have acquired information through the internet platforms. During a health crisis

the media is responsible for informing the public. During any health crisis media campaigns such as radio and online campaigns are deployed to influence preventive and health behaviour (Leask et al., 2010).

Further, to test whether there was a statistical relationship between other sources of COVID-19 messages and vaccine adoption behaviour among youths in Kiambu County, with Chi-square test p value set at p=0.05 was done, the test returned statistically insignificant results ($x^2$=0.427, df=1, p=0.439).

These results disagree with Talabi et al. (2022), study on *public perception of radio messages in managing COVID-19 pandemic in selected states in Nigeria.* According to Talabi (2022), found that radio informed Nigerians on COVID-19 pandemic preventive measures and control and had a greater influence on their response towards control and vaccination.

In other studies, on the bright and dark sides of social media use during COVID-19 lock down (Cho et al., 2023) and exposure to Cov-19 news on social media on consequent psychological distress and potential behaviour change (Montazeri et al, 2023) disagreed with these findings. According to Cho et al. (2022), the social media platforms were sources of both fear and anxiety during COVID-19 pandemic which influenced public health behaviour. Further, Montazeri et al. (2023), found that social media networks on anxiety and change of health behaviour with a significant level of p=0.001 and P=0.003 respectively in linear regression model.

### 4.7 Perceived Susceptibility (Likelihood of Contracting COVID-19)

The study sought to investigate the effects of COVID-19 television messages perceived susceptibility on the vaccine adoption behaviour among youth in Kiambu County, Kenya. The findings were as presented in the table 4.8.

**Table 4.8: Susceptibility Category**

| Susceptibility Category | | |
|---|---|---|
| | **Frequency** | **Percent** |
| Not susceptible | 5 | 1.5 |
| Susceptible | 334 | 98.5 |
| **Total** | **339** | **100.0** |

Based on table 4.8, out 339 youths who had watched COVID-19 content via different TV stations majority of the youths felt susceptible. 98.5% youths felt susceptible while 1.5% did not feel susceptible. From the score and categorization of the seven susceptibility elements, a scale of 0-17.5 was categorized as not susceptible and a scale of 17.6-35 was categorized as susceptible. These findings demonstrate that people feel susceptible or unsusceptible after receiving risk information. The risk perception stems from messages received. According to Janz & Becker (1984), people are likely to adopt protective health measures if they think they are highly at risk of contraction of diseases.

Further, Chi-square test done to determine whether there was any statistical relationship between perceived susceptibility and vaccine adoption, returned a statistically insignificant results ($x2=0.408$, $df=1$, $p=0.412$).

Additionally, based on the odds ratio's computation the study revealed that the odds of vaccine adoption among youths in Kiambu County who perceived themselves as susceptible was 2.1 times compared to those who did not perceive themselves as susceptible [AOR: 2.1, 95% CI]. This implies the youths who were susceptible were more likely to adopt COVID-19 vaccines compared to those who were not susceptible. The perceived susceptibility messages reflect the subjective risk of contracting diseases, thus denial or acceptance of contraction. Perceived susceptibility is crucial in regular protection behaviour.

Finally, analysis of variance regarding the two categories of respondents (those who perceived themselves as susceptible and those who did not) was done based on their susceptibility scale. The findings were as indicated in the table.

**Table 4.9: Perceived Susceptibility Statistical Findings**

| Binary Logistics Regressions | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | **B** | **S.E.** | **Wald** | **df** | **Sig.** | **Exp(B)** |
| Step 1[a] | Susceptibility | .744 | .920 | .655 | 1 | .418 | 2.104 |
| | Constant | -1.15 | 1.829 | .395 | 1 | .530 | .317 |

As demonstrated in Table 4.9, the P value (P=0.418) is greater than 5% which implies of no statistical relationship between perceived susceptibility COVID-19 television messages and vaccine adoption behaviour among youths in Kiambu County, Kenya. This implies that the perceived susceptibility COVID-19 television messages had no influence on vaccine uptake among youths in Kiambu County, Kenya. Further, the results are agreeing to the null hypothesis:

**Ho**$_1$: *COVID-19 television messages Perceived susceptibility have no significant effects on the vaccine adoption behaviour among youths in Kiambu County, Kenya*.

The findings of this study disagree with prior studies, that when people perceive themselves susceptible, they are likely to be vigilant and are prevention focused against contraction (Updegraff et al., 2015). However, when people perceive themselves less susceptible, they ignore control measures.

Further, people are unlikely to adopt recommendations unless they believe that they are vulnerable (Ranjit et al 2021). On the contrary, as elaborated by the HBM, the perceived susceptibility construct may not always lead to desired outcomes due to perceived barriers and stimulus needed to initiate decision-making process to acceptance of the health action (Champion & Skinner, 2008).

Further, the modifying variables such as demographics, psychosocial and structural variables can influence health action. As much as the media shares pandemic information using the susceptibility frames positive results are not always guaranteed. The cue to action, perceived barriers and moderating variables can affect the perception of health-related behaviour. (Sulat et al., 2018).

### 4.8 Perceived Severity (Seriousness of COVID-19)

The study sought to analyze the effects of COVID-19 messages perceived severity on vaccine adoption behaviour among youths in Kiambu County, Kenya. The findings were as presented in the tables below.

**Table 4.10: Severity Category**

| Severity Category | | |
|---|---|---|
| | **Frequency** | **Percent** |
| Not severe | 4 | 1.2 |
| Severe | 335 | 98.8 |
| **Total** | **339** | **100.0** |

Based on table 4.10, 339 youths who had watched COVID-19 content via different TV stations felt the pandemic was severe. 98.8% youths perceived the pandemic as severe while 1.2% perceived pandemic as not severe. From the score and categorization of the six perceived severity elements, a scale of 0-14.5 (14.5 and below) was categorized as not susceptible and a scale of 14.6-30 was categorized as susceptible. Perceived severity is crucial determinant of behaviour. This is because the element of severity alters how decisions are made by content consumers. The severity of a disease also influences how messages are framed.

Further, Chi-square test done to determine whether there was any statistical relationship between perceived severity and vaccine adoption, returned a statistically insignificant results ($x2=0.504$, $df=1$, $p=0.478$).

Further, based on the odds ratio's computation, the study revealed that the odds of vaccine adoption among youths in Kiambu County who perceived the pandemic as severe was 0.5 times compared to those who did not perceive the pandemic as severe [AOR: 0.459, 95% CI]. This implies the youths who perceived the COVID-19 pandemic as severe were not more likely to adopt the COVID-19 vaccines compared to the youths who perceived the COVID-19 pandemic as severe.

Finally, analysis of variance regarding the two categories of respondents (those who perceived COVID-19 as severe and those who did not) was done based on their severity scale. The findings were as indicated in the table.4.11 below

**Table 4.11: Perceived Severity Statistical Findings**

| Binary Logistics Regressions | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | **B** | **S.E.** | **Wald** | **df** | **Sig.** | **Exp(B)** |
| Step 1[a] | Severity | -.780 | 1.160 | .452 | 1 | .502 | .459 |
| | Constant | 1.878 | 2.312 | .660 | 1 | .417 | 6.541 |

As demonstrated in Table 4.11, the P value is greater than 5% which implies there was no statistical relationship between perceived severity COVID-19 television messages and vaccine adoption behaviour among youths in Kiambu County, Kenya. The P was 0.502. Based on the findings, the results are agreeing with the null hypothesis:

**Ho2**: *COVID-19 television messages Perceived severity have no significant effects on the COVID-19 vaccine adoption behaviour among youths in Kiambu County, Kenya.*

These findings demonstrates that regardless of a lot of severity messages on Covid-19, the vaccine uptake was low. Therefore, the severity messages did not influence expected behaviour of vaccine acceptance among youths. These results disagree with prior research, that the more severity is portrayed the more the uptake of the expected behaviour.

According to Weinstein (2000), perceived severity alters how decisions are made by information. People acquire certain behaviour, interpretations and beliefs based on the threats assessments of the media they are exposed to over time. Messages that elicit fear and enhance perceived efficacy positively impact young drivers, the health communication present threat- based narratives of potential consequences of health risks. The severity campaigns are prominent in health campaigns. Severity messages targeting fear and cognitive mechanisms can affect behaviour (Chaiuk & Dunaievska, 2020).

According to Ganz et al. (2011), increased perceived severity may increase precautionary responses, as such threat drives behaviour, however the actual action is determined by efficacy beliefs on countering the threat. Fear arousal messages may not always lead to adoption of recommended responses. Therefore, the perceived severity may not always translate to positive behaviour (Vermadere et al., 2016). The main aim of pandemic messages is to create awareness for change, thus balancing of messages is key (Mberia, 2009).

According to Siddiqi (2023), severity messages change attitudes, intentions and behaviour. Severity messages have the function of a drive; that is exposure to severity messages may lead to information search responses in order to reduce risks and vulnerability and the opposite is likely to happen due to fear. High levels of fear fail and induce defensive reaction which undermine persuasion. That is if messages induce fear and fail to raise perceived efficacy defensive reactions are developed. Although severe messages' objective is to increase persuasion but at some point, the emotional tension gets to a point at which the reassuring recommendation does not sufficiently reduce tension.

### 4.9 Perceived Response Efficacy (Beliefs on Control of COVID-19)

The study sought to examine the effects of COVID-19 television messages perceived response efficacy on vaccine adoption behaviour among youths in Kiambu County, Kenya. The results were as tabulated.

**Table 4.12: Perceived Response Efficacy Category**

| Perceived Response Efficacy Category | | |
|---|---|---|
| | **Frequency** | **Percent** |
| No response efficacy | 9 | 2.7 |
| Response efficacy | 330 | 97.3 |
| **Total** | **339** | **100.0** |

Based on Table 4.12, out of 339 youths who had watched COVID-19 content via different TV stations 330 had beliefs of COVID-19 control while 9 had no beliefs. 97.3% youths had beliefs while 2.7% lacked perceived response efficacy. From the score and categorization of the ten perceived response efficacy elements, a scale of 0-

24.5 was categorized as no perceived self-response efficacy and a scale of 24.6-50 was categorized as perceived self-response efficacy. These findings demonstrate that people acquire beliefs after receiving risk information.

Further, Chi-square test done to determine whether there was any statistical relationship between perceived response efficacy and vaccine adoption, returned statistically significant results ($X^2$=0.001, df=1, p=0.003).

Additionally, based on the odds ratio's computation, the study revealed that the odds of vaccine adoption among youths in Kiambu County who had perceived response efficacy was 1.113 times compared to those who did not have perceived response efficacy [AOR: 1.113, 95% CI]. This implies the youths who had perceive response efficacy were more likely to adopt the COVID-19 vaccines compared to the youths who did have perceived efficacy beliefs.

Further, to answer the question on whether there was any statistical relationship between perceived response efficacy COVID-19 messages and vaccine adoption behaviour among youths a regression test was carried out. The following multiple regression was adopted by this study; $Y=\beta_0 + \beta_3X_3 + e$ and the findings are as demonstrated in table 4.13.

**Table 4.13: Perceived Response Efficacy Statistical Findings**

| Coefficients[a] | | | | | | |
|---|---|---|---|---|---|---|
| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 2.022 | .173 | | 11.715 | .000 |
| | Perceived response efficacy | -.011 | .004 | -.139 | -2.584 | .010 |

As demonstrated in Table 4.13, the P value is less than 5% which implies of statistical relationship between perceived response efficacy COVID-19 television messages and vaccine adoption behaviour among youths in Kiambu County. The P for Coefficient was 0.010[b] a unit increase of elements of perceived response efficacy raised vaccine adoption behaviour among youths in Kiambu County with 0.011 units. Based on these

findings the perceived response efficacy messages had statistical influence on COVID-19 vaccine adoption behaviour among youths in Kiambu County thus refuting the null hypothesis:

***Ho$_3$:*** *COVID-19 television messages Perceived response efficacy have no significant effects on vaccine adoption behaviour among youths in Kiambu County, Kenya.*

According to Sell et al., (2016), health messages help the public in understanding threats and preventive measures available, thus support the mitigation policies. The messages are seen to influence people's beliefs on protective measures. Paying attention to risks messages reduce panic due to solution narrative and successful instances of control. Liu et al. (2021), note that the media messages elicit fear and high levels of fear encourage preventive behaviour.

Further, these findings agree that high efficacy beliefs are leads to participation in vaccine adoption and engage in preventive measures, while also the opposite is true. Noticeably, the extent to which the suggested action is believed to avert a health issue answers the question of whether the solutions given work (Moriarty, 2009). Public's behaviour is motivated by the urge to live and reduce health effects, since response to health threats is dependent on reality (Mehiriz & Gosselin, 2021).

### 4.10 Perceived Self -Efficacy (Confidence on Control)

The study sought to find out the effects of COVID-19 television messages self-efficacy on vaccine adoption behaviour among youths in Kiambu County, Kenya. The findings were as presented in table 4.14 below.

**Table 4.14: Perceived Self-Efficacy Category**

| Perceived Self Efficacy Category | | |
|---|---|---|
| | **Frequency** | **Percent** |
| No perceived self-efficacy | 11 | 3.2 |
| Perceived self-efficacy | 328 | 96.8 |
| **Total** | **339** | **100.0** |

Based on Table 4.14, out of 339 youths who had watched COVID-19 content via different TV stations 328 had perceived self-efficacy while 11 had no perceived self-efficacy 96.8% youths had perceived self-efficacy while 3.2% lacked perceived self-efficacy. From the score and categorization of the nine perceived self-efficacy elements, a scale of 0-22.5 was categorized as no perceived self-efficacy and a scale of 22.6-45 was categorized as perceived self-efficacy. These findings demonstrate that people may acquire or lose confidence on risk control after receiving risk information.

From the table 328 youths had high levels of perceived efficacy while 11 youths had very low levels of perceived efficacy. According to Pallerone (2021), individuals differ in belief of being able to control situations. The perceived belief to cope with threatening situation contributes to anxiety arousal levels and those who show capability to control threats tend to display decreased anxiety levels. As such low levels of perceived self-efficacy has been associated with higher levels of anxiety stemming from severity messages (Ozer, 2024; Firth et al., 2019).

Further, Chi-square test done to determine whether there was any statistical relationship between self-efficacy and vaccine adoption, returned statistically significant results ($X^2$=0.025, df=1, p=0.014).

Additionally, based on the odds ratio's computation, the study revealed that the odds of vaccine adoption among youths in Kiambu County who had perceive self- efficacy was 0.991 times compared to those who did not have perceived self-efficacy [AOR: 0.991, 95% CI]. This implies the youths who had perceived self-efficacy beliefs had one more chance of adopting the COVID-19 vaccines compared to the youths who did not have perceived self-efficacy beliefs.

Further, to answer the question on whether there was any statistical relationship between perceived self-efficacy COVID-19 messages and vaccine adoption behaviour among youths a regression test was carried out. The following multiple regression was adopted by this study; $Y=\beta_0 + \beta_1 X_4 + e$ and the results are as presented in table 4.15 below.

**Table 4.15: Perceived Self-Efficacy Coefficients**

| Coefficients[a] | | | | | | |
|---|---|---|---|---|---|---|
| **Model** | | **Unstandardized Coefficients** | | **Standardized Coefficients** | **T** | **Sig.** |
| | | **B** | **Std. Error** | **Beta** | | |
| 1 | (Constant) | 1.964 | .127 | | 15.500 | .000 |
| | Self-efficacy | -.018 | .006 | -.166 | -3.093 | .002 |

As demonstrated in table 4.15, the Coefficient results, the P value is less than 5% which implies of statistical relationship between perceived self- efficacy COVID-19 television messages and vaccine adoption behaviour among youths in Kiambu County. The coefficients' P was 0.002 and a unit increase of elements of perceived self-efficacy influenced vaccine adoption among youths in Kiambu County with 0.018 units. Based on the findings perceived self-efficacy COVID-19 television messages had influence on COVID-19 vaccine uptake among youths in Kiambu County. Therefore, the results refuted the null hypothesis:

***$Ho_4$:*** *COVID-19 television messages perceived self-efficacy have no significant effects on vaccine adoption behaviour among youths in Kiambu County, Kenya.*

These findings demonstrates that perceived self-efficacy COVID-19 television messages led to low vaccine uptake among youths in Kiambu County. The response efficacy is important in health. The responses towards health risk are motivated by self-efficacy. When self-efficacy is high there is greater probability for attitude change (Moriarty, 2009).

### 4.11 Moderating effects of Demographic Factors

The study sought to determine the moderating effects of demographic factors on the relationship between television messages on COVID-19 and the vaccine adoption behaviour among youths in Kiambu County, Kenya.

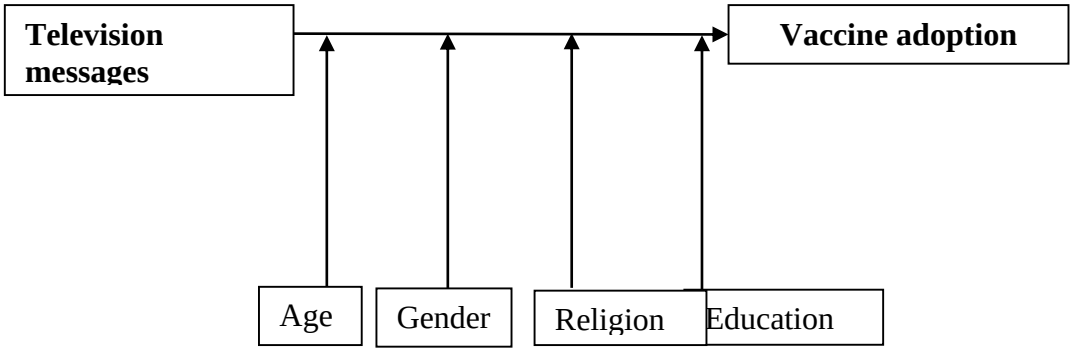



**Figure 4.6: Moderating Variables Model**

Source: (Researcher, 2024)

To evaluate, the moderating effects the respondents participated in questionnaires and a moderation analysis was done. Moderation analysis is a linear regression analysis explaining the impacts of independent variable on dependent variable under the influence of a moderating variable. To achieve this regression analysis was done.

Further, the moderated effects of independent variables against the dependent variable were expressed in general form given below:

$Y=\beta_0 + \beta_1 X_1*Z + \beta_2 X_2*Z + \beta_3 X_3*Z + \beta_4 X_4*Z + e$

Y stands for dependent variable

X stands for Independent Variable

$\beta_0$ = is the constant (Y- intercept) which is the value of dependent variable when all the independent variables are zero

$\beta_1$= are regression constants or the rate of change induced by $X_1*Z$, $X_2*Z$, $X_3*Z$ and X4*Z

Y = Vaccine adoption behaviour

$X_1$= Perceived susceptibility

$X_2$= Perceived Severity

$X_3$ = Perceived response efficacy

$X_4$ = Perceived Self-efficacy

Z= Moderating variables

e=error

**Z= Moderating variables**

$Z= \alpha_0 + \alpha_1 M_1 + \alpha_2 M_2 + \alpha_3 M_3 + \alpha_4 M_4$

$M_1$ = Religion

$M_2$= Education

$M_3$= Gender

$M_4$= Age

**Table 4.16: Moderating Effects**

| Coefficients[a] | | | | | | |
|---|---|---|---|---|---|---|
| **Model** | | **Unstandardized Coefficients** | | **Standardized Coefficients** | **T** | **Sig.** |
| | | **B** | **Std. Error** | **Beta** | | |
| 1 | (Constant) | 1.520 | .382 | | 3.976 | .000 |
| | Messages | -.004 | .003 | -.075 | -1.409 | .160 |
| | Religion | .055 | .058 | .051 | .937 | .350 |
| | Education | .112 | .043 | .141 | 2.579 | .010 |
| | Gender | .149 | .055 | .143 | 2.693 | .007 |
| | Age | -.154 | .053 | -.154 | -2.906 | .004 |

Based on the findings on table 4.16, education, gender and age had moderating effect between COVID-19 television messages and vaccine adoption among youths in Kiambu County. The P value for religion was 0.350, P value for education was 0.010, P value for gender was 0.007 and P value for age was 0.004. These results demonstrates that religion did not have moderating effects. A unit increase of education, gender, and age increased vaccine adoption uptake among youths in Kiambu County with 0.112, 0.149 and 0.154 units respectively. Further, the results are refuting to the null hypothesis:

***Ho$_5$**: Demographic factors have no moderating effects on the relationship between COVID-19 television messages and the vaccine adoption behaviour among youths in Kiambu County, Kenya.*

Contrary to Osur et al. (2022): Tolia et al. (2022); Lopez et al. (2022), this study found that there was no moderating effect between religion and vaccine adoption behaviour among youths. *According to Lopez- Cepero et al. (20220),* adoption of COVID-19 vaccines differs based on the religious links. Noticeably, religion has different norms in culture, politics, and economic concerns. Religion has long-term influence on their decision towards vaccine uptake. As such religious leaders are powerful in influencing people's decision irrespective of people's lifestyles and education background (Tolia et al., 2022).

This distribution disagrees with Orangi et al., (2021) study *on assessing the level and determinants of COVID-19 vaccine in Kenya*, found some demographics have influence however level of education did impact on vaccine hesitancy but individual's COVID-19 risks perceptions and impacts determine the level of hesitancy.

The findings on age, gender and education agrees with studies conducted by Osur et al. (2022) that indecision on vaccine adoption uptake remains high among youths compared to elderly. Further, Osur et al. (2022), notes that indecisiveness remains high among youth where only 42% were ready for vaccination, 52% waiting to see the effects of the vaccines to the already vaccinated and 6% unwilling.

Further, the influence of gender on health has become key during COVID-19 pandemic. According to Peckham (2020), males have three times odds of intensive care units' admissions and 40 % higher odds of dying from the pandemic compared to females (Walter & McGregor, 2020; Wolfe et al., 2021).

Sileo et al. (2024), notes that there has been more COVID-19 hospitalization and deaths among men compared to the women. Women hesitancy has been documented; however, this do not translate to actual behaviour. The demographics characteristics influences the relationship between messages and anticipated behaviour thus low vaccine adoption behaviour among youths in Kiambu County, Kenya.

### 4.12 Hierarchical Multiple Regression of Independent Variables

Further, more analysis on moderating effects was performed using hierarchical multiple regression on all independent variables.

**Table 4.17: Hierarchical Multiple Regression of Message Elements**

| Variable | β | T | $Sr^2$ | R | $R^2$ | $\Delta R^2$ | F | Sig. |
|---|---|---|---|---|---|---|---|---|
| Perceived susceptibility | .118 | 1.921 | 0.166 | .045[a] | .002 | .002 | .681 | .410 |
| Perceived severity | -.030 | -.486 | 0.501 | .078[b] | .006 | .004 | 1.026 | .360 |
| Perceived response efficacy | -.091 | -1.251 | 2.495 | .174[c] | .030 | .024 | 3.481 | .016 |
| Perceived self-efficacy | -.129 | -1.894 | 3.345 | .201[d] | .041 | .010 | 3.528 | .008 |
| Moderating variable | .037 | .028 | 3.754 | .213[e] | .045 | .005 | 3.177 | .008 |

Overall, the hierarchical multiple regression model revealed that the first message element (perceived susceptibility) contribution was insignificant F (1, 338) =0.681, P=0.410, $R^2$ = 0.002 and accounted for 1.66 $Sr^2$ and 0.002 $\Delta R^2$

The second message element (perceived severity) contribution was insignificant ΔF (2, 338) =1.026, p=0.360, $\Delta R^2$=0.04, β=-.030, t= -.486. With addition of severity element in block 2, $Sr^2$ rose from 0.166 to 0.501 thus accounting for 33.5% variation on COVID-19 vaccine adoption behaviour among youths in Kiambu County, Kenya. Additionally, the $\Delta R^2$ rose from 0.002 to 0.004 accounting for a variation of 0.2%.

The third message element (perceived response efficacy) was added, and its contribution was significant ΔF (3, 338) =3.48, p=0.016, $\Delta R^2$=0.024, β= -.091, t= -1.251. With addition of addition of perceived response efficacy in block 3, $Sr^2$ rose from 0.501 to 2.495 thus accounting for 1.994 unit increase on COVID-19 vaccine adoption behaviour among youths in Kiambu County, Kenya. Additionally, the $\Delta R^2$ increased from 0.004 to 0.024 accounting for a variation of 2%.

The fourth message element (perceived self-efficacy) was added, and its contribution was significant $\Delta F$ (4, 338) =3.528, p=0.008, $\Delta R^2$=0.010, β= -0.129, t= -1.894. with addition of self-efficacy elements in block 4, $Sr^2$ rose from 2.495 to 3.34, thus accounting for variation of 85% on COVID-19 vaccine adoption behaviour among youths in Kiambu County, Kenya. Additionally, the $\Delta R^2$ dropped from 0.024 to 0.010 accounting for a variation of 1.4%.

Finally, the study sought to proof the fifth null hypothesis that *stated that demographic factors have no moderating effects on the relationship between COVID-19 television messages and the vaccine adoption behaviour among youths in Kiambu County, Kenya. The findings revealed that the contribution was significant the demographic factors contribution was significant* $\Delta F$ (5, 338) =3.177, p=0.008, $\Delta R^2$=0.005, β= -0.037, t= 0.028. With addition of demographic elements in block 5, $Sr^2$ rose from 3.345 to 3.745, thus accounting for variation of 40% on COVID-19 vaccine adoption behaviour among youths in Kiambu County, Kenya. Additionally, the $\Delta R^2$ dropped from 0.010 to 0.005 accounting for a variation of 0.05%.

### 4.13 Optimal Model

This study sought to investigate assess the effects of COVID-19 television messages on vaccine adoption behaviour among youths in Kiambu County, Kenya. To this end the study had four independent variables namely, perceived susceptibility, perceived severity, perceived response efficacy and perceived self-efficacy. Moreover, the study determined the moderating effects of demographic factors on the relationship between television messages on COVID-19 and the vaccine adoption behaviour among youths in Kiambu County, Kenya. The following optimal model was used with no variable expunged. The optimal model used is as illustrated in the figure 4.7.

The above optimal model can statistically be represented as:

$Y=\beta_0 + \beta_1X_1*Z + \beta_2X_2*Z + \beta_3X_3*Z + \beta_4X_4*Z + e$ where;

Y = Vaccine adoption behaviour

$X_1$= Perceived susceptibility

$X_2$= Perceived Severity

$X_3$ = Perceived response efficacy

$X_4$ = Perceived Self-efficacy

Z= Moderating variables

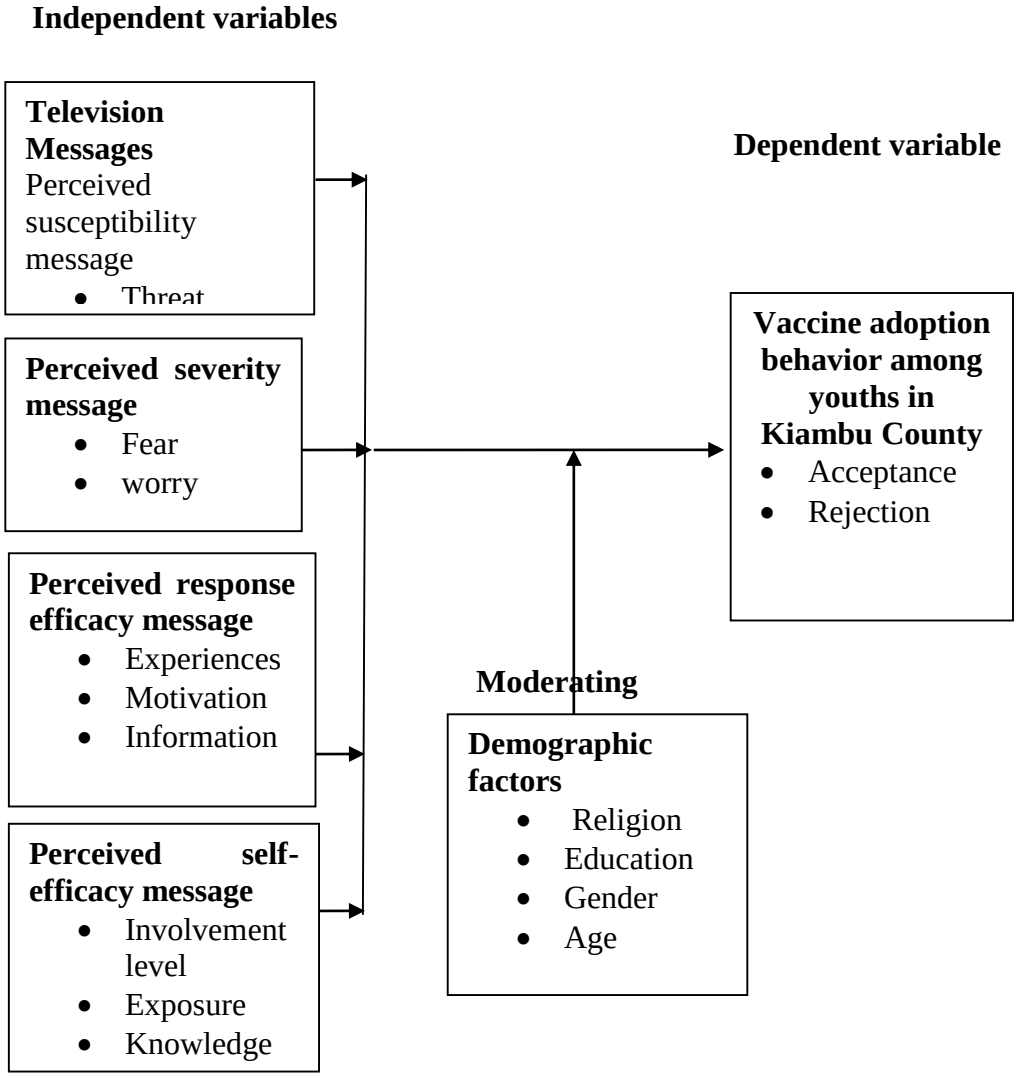



**Figure 4.7: Optimal Model**

Further, the following model's statistical findings summary was as represented in table 25. Overall, the findings revealed that only efficacy beliefs and demographic variables had statistical influence on vaccine adoption among youths in Kiambu County with P value at 0.016, 0.008 and 0.008 respectively. Further a unit of perceived response efficacy, perceived self-efficacy and demographic variables increased vaccine adoption behaviour of youths in Kiambu County with 3%, 41%, and 45% respectively.

**Table 4.18: Model Summary**

| Model Summary | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Model** | **R** | **R Square** | **Adjusted R Square** | **Std. Error of the Estimate** | **Change Statistics** | | | | |
| | | | | | **R Square Change** | **F Change** | **df1** | **df2** | **Sig. F Change** |
| 1 | .045[a] | .002 | -.001 | .49434 | .002 | .681 | 1 | 337 | .410 |
| 2 | .078[b] | .006 | .000 | .49407 | .004 | 1.369 | 1 | 336 | .360 |
| 3 | .174[c] | .030 | .022 | .48875 | .024 | 8.347 | 1 | 335 | .016 |
| 4 | .201[d] | .041 | .029 | .48688 | .010 | 3.587 | 1 | 334 | .008 |
| 5 | .213[e] | .045 | .031 | .48634 | .005 | 1.732 | 1 | 333 | .008 |

# CHAPTER FIVE

# SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

## 5.1 Introduction

This chapter gives a summary of the research findings, conclusions, and the recommendations of the study as per the objectives. Suggestions for further research have also been given based on the research gaps identified during the study. The general objective of the study was to assess the effects of COVID-19 television messages on the vaccine adoption behaviour among youths in Kiambu County, Kenya.

The specific objectives were; to investigate the effects of COVID-19 television messages perceived susceptibility on the vaccine adoption behaviour among youths in Kiambu County, Kenya: to analyze the effects of COVID-19 television messages perceived severity on the vaccine adoption behaviour among youths in Kiambu County, Kenya: to examine the effects of COVID-19 television messages perceived response efficacy on the vaccine adoption behaviour among youths in Kiambu County, Kenya: to find out the effects of COVID-19 television messages perceived self-efficacy on the vaccine adoption behaviour among youths in Kiambu County, Kenya and lastly to determine the moderating effects of demographic factors on the relationship between COVID-19 television messages and the vaccine adoption behaviour among youth in Kiambu County, Kenya.

Recently, COVID-19 was a burden globally and the implications of the pandemic are still felt economically in the world. The television has been found to report pandemic cases since inception in China. The messages aired to publics pertained the causes of pandemic, control and prevention mechanisms, deaths, recovery, and daily statistics of recovery across various demographics. However, the vaccines uptake was low (Osur et al., 2022) and has completely decreased (Sileo, et al., 2024).

The literature reviewed on this study demonstrated that COVID-19 was a major global concern killing millions, with active infections cutting across all ages and being extremely contagious. The pandemic was more than a health crisis due to its effects

on societies and economies, the effects varied globally due exceptional systems, development, beliefs, and cultures. The media was not left out in reporting the pandemic to the public in different narratives. Despite a lot of coverage on severity and susceptibility of the pandemic new infections were alarming and death tolls. Additionally, the vaccine uptake was low regardless of the massive campaigns by different frontiers. The media have been blamed for low outcomes in control due to info-demic globally and the messages aired to the public were somehow confusing (Demuyakor et al., 2021).

### 5.2 Summary of Research Findings

For television messages, this study analyzed 30 YouTube news videos from three TV stations: Citizen TV, KTN and NTV. This is because they are the most watched TV stations in Kenya with news content most watched. For inclusion and exclusion of the COVID-19 news videos, extensive search was done using titles of the news, dates, duration's, views, and key words touching on severity, susceptibility, and efficacy beliefs. Further, to get a sample size for quantitative data the study used Fisher et al. (1999), formula to arrive at 384 respondents. Out of 384 respondents, 357 respondents participated, 346 respondents participated fully, and 11 questionnaires were incomplete, making the response rate 90.1%.

From the data collected, there was evidence that vaccine adoption among youths was very low regardless of information aired via televisions and information on pandemic being available on different public domains. Notably, the message narratives, misinformation and moderating demographic factors influence vaccine adoption behaviour. The messages led to fear, confusion and the youths' lacked confidence of the control and prevention as per the mechanisms put in place by the government.

### 5.3 Social Demographics Characteristics of Youths

Most of the youths were aged between (82.1 %) 18-24. This was followed by respondents aged between 25 to 30 and 31 to 35 years, 13.3% and 4.6% respectively. Combined the two age groups accounted for 17.9% of all the respondents. This asserted that those aged between 18 to 24 years took or did not take vaccines. From

the frequencies, vaccine adoption differed across different ages, 174 youths aged 18 to 24 rejected the vaccines. Further, 23 youths and 5 youths aged 25 to 30 and 31 to 35 years respectively rejected vaccines.

Additionally, most of the respondents were females (65% were females and 35% were males). 225 females and 121 males participated in the study. This distribution shows most women went for COVID-19 vaccines compared to men. Gender remains marginalized in global vaccines response.

Further, the findings reveal that more than 85.3 % of the respondent were Christian, 11.6% were Muslims and 3.1% were traditional. This distribution demonstrated that majority of the youths in Kiambu County, Kenya were Christians followed by Muslims.

Also, those respondents who attained primary school level of education and below were 0.9 %, those who attained secondary level were 4.9%, while 27.7 % had college education and 66.5% who were the majority had attained university education and above.

### 5.4 Vaccine Adoption Behaviour among Youths

Based on the findings 24.3% of youths in Kiambu County, Kenya had been tested for COVID-19 while 75.7% had not been tested for Covid-19. Further, in order to answer the question on reasons for COVID-19 testing, the youths had different reasons for testing. 22% youths went for testing due to underlying issues, 47.5% as a result of mass testing that was rolled out by the government and 30.5% because they needed travel permits.

Further, on the questions of whether vaccinated or not, when and type of vaccine take. The findings showed that majority of youths in Kiambu County had not been vaccinated. 58.4 % youths had not received vaccines and 41.6% youths had been vaccinated with different vaccines. Further, amongst the vaccinated youths 54% had been vaccinated once and 46% youths twice. These findings demonstrated that youths

in Kiambu County went for only one dose of the vaccine and failed to go for booster vaccines as required by the government.

Also, majority of youths had gone for Johnson & Johnson vaccines at 48% followed by AstraZeneca at 26% then Moderna and Pfizer at 14% and 12% respectively. The vaccines are effective for protecting against virus causing Covid-19.

Lastly, 62% youths were vaccinated in 2021, 33% in 2022 and 5% in 2023. The vaccine adoption rates reduced with time. People were interested with COVID-19 pandemic at its onset and interest diminished with time.

### 5.5 COVID-19 Television Message Elements

From a sample size of 30 YouTube videos dated from august 2021 to December 2021. Out of 17 videos analyzed from Citizen TV out of 17 videos analyzed from Citizen TV, 17 videos had perceived severity elements, 16 perceived susceptibility elements, 1 perceived self-efficacy elements and 16 perceived response efficacy elements. Further, out of 7 from KTN 7 had perceived severity elements, 7 had perceived susceptibility and 6 had response efficacy elements. Also, out of 6 from NTV 6 had perceived severity elements, 6 had perceived susceptibility elements and 5 had perceived response efficacy elements.

These findings demonstrated that during any pandemic the media and for this study television tend to use different frames for information and influence on publics. Apart from extensive coverage of pandemics, the media use different techniques such as message elements or frames, symbols, and metaphors to describe a pandemic. The media majored on threat appeals. The messages on COVID-19 had more than one message element.

### 5.6 Effects of COVID-19 Stories on Youths' Feelings

Based on the findings youths felt differently based on the COVID-19 messages they watched. Out of 346 respondents 339 responded to the question: how did COVID-19 stories you watched made you feel? 31.2% respondents felt like going for vaccines while 68.8% felt like not going for vaccines, 74% felt threatened, 63.6% felt fearful,

58.7% felt anxious and confused, 36.1% felt informed, 70.2% felt misled, 13.6% felt safe, 80.9% felt not safe and 10.1% felt confidence. The responses based on the feelings demonstrated that majority of youths lacked confidence followed by feelings of unsafe, misled, fear, threat and lastly anxiety and confusion.

### 5.7 COVID-19 stories on TV

Based on the question whether they had watched COVID-19 stories on Kenyan TV, 98% had watched while 2.0% had not watched. The response demonstrated that majority of youths in Kiambu County, Kenya had watched COVID-19 stories. Also, the majority of respondents had watched COVID-19 stories in Citizen TV, followed by NTV, then KTN, all the three TV stations and then by others. Out of 339 youths who had watched COVID-19 programmes, 47.5% had watched Citizen TV, then 8.6% had watched NTV, then 8.3% had watched KTN, then 28.3% had watched the three TV stations (Citizen TV, NTV and KTN) and 7.4% had watched other TV stations in Kenya.

Further, 73.4% watched COVID-19 messages daily, 18 % respondents had watched the pandemic messages on weekly basis and 9.7 % watched the messages on monthly basis. In addition, out of 339 respondents, 85.8% youths watched news followed by 4.4% feature stories and then 9.7% watched talk shows. The responses demonstrated that the majority of youths had watched news items and talk shows on COVID-19 through Citizen TV.

### 5.8 Perceived Susceptibility and Vaccine Adoption Behaviour among Youths

From the analysis, out 339 youths who had watched COVID-19 content via different TV stations 98.5% youths felt susceptible while 1.5% did not feel susceptible. From the score and categorization of the seven susceptibility elements, a scale of 0-17.5 was categorized as not susceptible and a scale of 17.6-35 was categorized as susceptible. These findings demonstrated that people feel susceptible or unsusceptible after receiving risk information.

Based on the odds ratio's computation the study revealed that the odds of vaccine adoption among youths in Kiambu County who perceived themselves as susceptible was 2.1 times compared to those who did not perceive themselves as susceptible. This implied that the youths who were susceptible were more likely to adopt COVID-19 vaccines compared to those who were not susceptible. Further, the Binary logistic regression findings revealed that the P value was greater than 5% which implied of no statistical relationship between perceived susceptibility COVID-19 television messages and vaccine adoption behaviour among youths in Kiambu County, Kenya. Overall, the results agreed to the null hypothesis.

### 5.9 Perceived Severity and Vaccine Adoption among Youths

From frequency analysis, 339 youths who had watched COVID-19 content via different TV stations felt the pandemic was severe. 98.8% youths perceived the pandemic as severe and 1.2% considered it as not severe. From the score and categorization of the six perceived severity elements, a scale of 0-14.5 (14.5 and below) was categorized as not susceptible and a scale of 14.6-30 was categorized as susceptible. Perceived severity is crucial determinant of behaviour.

Based on the odds ratio's computation, the study revealed that the odds of vaccine adoption among youths in Kiambu County who perceived the pandemic as severe was 0.5 times compared to those who did not perceive the pandemic as severe. Further, from the Binary logistic regression results the P value was greater than 5% which implied there was no statistical relationship. Based on the findings, the results agreed with the null hypothesis.

### 5.10 Perceived Response Efficacy and Vaccine Adoption Behaviour among Youths

From the frequency analysis, out 339 youths who had watched COVID-19 content via different TV stations 326 had beliefs of COVID-19 control while 13 had no beliefs. 97.3% youths had beliefs while 2.7% lacked perceived response efficacy. From the score and categorization of the ten perceived response efficacy elements, a scale of 0-24.5 was categorized as no perceived self-response efficacy and a scale of 24.6-50 was

categorized as perceived self-response efficacy. These findings demonstrated that people acquire beliefs after receiving risk information.

Based on the odds ratio's computation, the study revealed that the odds of vaccine adoption among youths in Kiambu County who perceived had perceived response efficacy was 1.113 times compared to those who did not have perceived response efficacy. This implied that the youths who had perceive response efficacy were more likely to adopt the COVID-19 vaccines compared to the youths who did have perceived efficacy beliefs.

Further, from Coefficient analysis, the P value was less than 5% which implied of statistical relationship between perceived response efficacy COVID-19 television messages and vaccine adoption behaviour among youths in Kiambu County. The P for Coefficient was $0.010^{b;}$ a unit increase of elements of perceived response efficacy raised vaccine adoption behaviour among youths in Kiambu County with 0.011 units. These, results refuted the null hypothesis.

### 5.11 Perceived Self-Efficacy and Vaccine Adoption Behaviour among Youths

From the frequency analysis, out 339 youths who had watched COVID-19 content via different TV stations 328 had perceived self-efficacy while 11 had no perceived self-efficacy 96.8% youths had perceived self-efficacy while 3.2% lacked perceived self-efficacy. From the score and categorization of the nine perceived self-efficacy elements, a scale of 0-22.5 was categorized as no perceived self-efficacy and a scale of 22.6-45 was categorized as perceived self-efficacy. These findings demonstrated that people may acquire or lose confidence on risk control after receiving risk information.

Based on the odds ratio's computation, the study revealed that the odds of vaccine adoption among youths in Kiambu County who had perceive self- efficacy was 0.991 times compared to those who did not have perceived self-efficacy. This implied the youths who had perceived self-efficacy beliefs had one more chance of adopting the COVID-19 vaccines compared to the youths who did not have perceived self-efficacy beliefs.

Further, the Coefficient results, the P value was less than 5% which implies of statistical relationship between perceived self- efficacy COVID-19 television messages and vaccine adoption behaviour among youths in Kiambu County, Kenya. The coefficients' P was 0.002 and a unit increase of elements of perceived self-efficacy influenced vaccine adoption among youths in Kiambu County with 0.018 units. Based on the findings perceived self-efficacy COVID-19 television messages had influence on COVID-19 vaccine uptake among youths in Kiambu County, Kenya. Therefore, the results refuted the null hypothesis.

### 5.12 Moderating Effects

Based on the regression findings, education, gender, and age had moderating effects between COVID-19 television messages and vaccine adoption among youths in Kiambu County, Kenya. The P value for religion was 0.350, P value for education was 0.010, P value for gender was 0.007 and P value for age was 0.004. These results demonstrated that religion did not have moderating effects. Based on the statistical analysis moderating variables had the greatest effects between messages on COVID-19 and vaccine adoption behaviour among youths in Kiambu County, Kenya. The results refuted the null hypothesis

### 5.13 Conclusion

The study sought to find the effects of COVID-19 television messages on vaccine adoption behaviour among youths in Kiambu County, Kenya. The study also evaluated the moderating effects of social demographic factors on vaccine adoption behaviour among youths in Kiambu County, Kenya. Regarding the effects of COVID-19 television messages on vaccine adoption behaviour among youths, the study demonstrated that messages influenced vaccine uptake behaviour.

The study found that vaccines adoption amongst different demographics depended on messages communicated by different channels of communication. The public is likely to have positive responses on pandemics if pandemic stories are effectively framed and clearly designed. The major interventions towards dealing with pandemics is use of efficient communication strategies, for they aid in attaining intended health impacts.

Youths were exposed to pandemic information by the media. This information aired through media gave prominence to susceptibility, severity, efficacy beliefs among others. The frames led to feelings of safety, unsafety, confidence, informed, fear, stigma among others. These feelings were a stronger predicator of rejection of vaccines among youths.

Further, the messages shaped opinion and attitude. The youths' knowledge of pandemic was intrinsically shaped by the messages broadcasted by the television. The attitude and knowledge influenced the efforts to prevent a disease; willingness to obey government and health guidelines. Therefore, messages can influence people perception and behaviour, psychological disorders inclusive. Therefore, there is necessity for policy makers, the government, and other players to find solution for rejection of control measures during a pandemic.

### 5.13 Recommendations

Based on the findings of this study, television messages on COVID-19 pandemic influenced vaccine uptake rate among youth in Kiambu County, Kenya. Therefore, this offers a starting foundation for scholars to find out: what informs the television when covering health pandemics and other health matters.

Further, this study focused on television messages influence on vaccine uptake among youths, and majored on moderating effects: gender, age, education, and religion. Previously, studies on pandemics have majored of social media messages and radio and majored on gender, age, education, and religion as moderators. Similar studies on the role of opinion leaders and authority leaders during a pandemic in relationship to acceptance of control measures put in place. Additionally, studies other similar study should look at other moderating factors such as occupation and social economic factors.

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## APPENDICES

### Appendix I: Letter to the Respondents

FAITH NGURE,
P.O BOX 1286.
RUIRU.
Dear Respondent,
I am a PhD student from Jomo Kenyatta University of Agriculture and Technology pursuing a Doctor of Philosophy in Mass Communication. I am currently conducting research on, Television ***messages on COVID-19 pandemic and adoption of vaccine among youths in Kiambu County***.

You will be required to complete a questionnaire which will take approximately 30 minutes to complete. All responses collected will be put into a written report on an anonymous basis. It will not be possible for you to be identified personally. All the data collected will be kept secure and no other person besides me and my supervisor will have access to the completed questionnaire. The thesis will be submitted for marking at the school of communication and deposited at the university library. It is intended that one or more articles will be submitted for publication in scholarly journals. The questionnaires will be destroyed five years after the end of the project. I hereby, request you to respond to the questions to the best of your knowledge.

### Consent

I have been given and have understood an explanation of this research project. I have had an opportunity to ask questions and have them answered to my satisfaction. I hereby accept to participate in the research study.

Sign: _____ Date: _____

**Appendix II: Questionnaire**

Thank you for taking your time to complete this survey. The purpose of this research study is to determine the effects Covid -19 television messages on vaccine adoption among youths in Kiambu County. Your input in this study will help rolling out proper campaigns for COVID-19 vaccines.

The information that you will provide in this study shall be kept confidential, the researcher will not ask for your name or identification card. Thanks again for accepting to participate in the study

**Instructions**: Please give all the information required. Please tick as appropriate in the spaces provided and fill in the correct responses where necessary.

Date filled …….

**SECTION A: BIO-DATA**

1. Age

   18-24 [ ] 25-30 [ ] 31-35 [ ]

2. Gender

   Female [ ] Male [ ]

**SECTION B: MEDIA MESSAGES**

3. Have you ever watched COVID-19 pandemic stories broadcasted through our Kenyan TV?
   Yes [ ] No [ ]
4. If No what are your sources of information on COVID-19 pandemic?
   Health workers [ ]
   Newspapers [ ]
   Radio [ ]
   Internet (Facebook, Twitter, WhatsApp) [ ]

Other people [ ]

5. If yes how often do you watch TV?

   Daily [ ]

   Weekly [ ]

   Monthly [ ]

6. In Which TV stations were COVID-19 pandemic stories broadcasted through?

   Citizen TV [ ]

   KTN [ ]

   NTV [ ]

   Other (specify).....

7. Which TV programmes contained COVID-19 pandemic stories? Tick as appropriate

   News [ ]

   Features [ ]

   Talk shows [ ]

   Other (specify) .....

**Perceived Susceptibility (Likelihood of Contracting Covid-19)**

8. To what extent do you agree with the following statements based on TV messages you watched? Please indicate your level of agreement on a scale of 1-5 where 1 is strongly disagree and 5 is strongly agree.

   **(1) strongly disagree (2) disagree (3) neutral (4) agree (5) strongly agree**

| | |
|---|---|
| I feel that anyone could contract Covid-19 | |
| I feel that there was likelihood of contracting Covid-19 | |
| I feel that we were all vulnerable to the pandemic if we did not wear mask and washing hands | |
| I feel that contraction was high due to failure of taking vaccines | |
| I feel that people with underlying conditions were at high risk of contraction | |
| I feel that elderly people were at risk of contraction | |
| I feel that the contraction percentage is no longer high | |

**Perceived Severity (Seriousness of Covid-19)**

9. To what extent do you agree with the following statements based on TV messages you watched Please indicate your level of agreement on a scale of 1-5 where 1 is strongly disagree and 5 is strongly agree.

   **(1) strongly disagree (2) disagree (3) neutral (4) agree (5) strongly agree**

| | |
|---|---|
| I perceive COVID-19 is a killer Virus | |
| I perceive COVID-19 leads to difficulty in breathing which results to death | |
| I perceive the disease is painful | |
| I perceive treating COVID-19 is expensive | |
| I perceive COVID-19 has affected economic sector | |
| I perceive COVID-19 has impacted people's daily routine | |

**Perceived Response Efficacy (Beliefs on Control)**

10. To what extent do you agree with the following statements based on TV messages you watched? (Please indicate your level of agreement on a scale of 1-5 where 1 is strongly disagree and 5 is strongly agree.

    **(1) Strongly disagree (2) disagree (3) neutral (4) agree (5) Strongly agree**

| | |
|---|---|
| From the experiences, protocols against COVID-19 were hard to follow | |
| Measure and protocols in place were enough to control the spread of Covid-19 | |
| From experience, COVID-19 was a disease for the old thus makes it less likely to have Covid | |
| I had an inner motivation; there was need of vaccine and control of Covid 19 | |
| Protocols were for elderly and people with underlying health issues thus making it less likely to contract the pandemic | |
| Taking vaccines was a must and made it less likely to have Covid | |
| Immune system for youths is high and made it less likely to have Covid | |
| From my knowledge the pandemic not because of vaccines | |
| From my experiences measures could not be achieved | |
| From my experiences the pandemic was not real, it was propaganda thus makes it less likely to have Covid | |

**Perceived Self-Efficacy (Confidence towards Control)**

11. To what extent do you agree with the following statements based on TV messages you watched? Please indicate your level of agreement on a scale of 1-5 where 1 is strongly disagree and 5 is strongly agree.

**(1) strongly disagree (2) disagree (3) neutral (4) agree (5) strongly agree**

| | |
|---|---|
| I was able to maintain hygiene to avoid COVID-19 transmission that was all over | |
| I was able put to on masks to avoid COVID-19 transmission that was all over | |
| I was able to maintain social distance, to avoid contracting the virus that was allover | |
| I was able to minimize chances of contracting the virus by going for testing | |
| I was able to achieve measures put in place because I had enough knowledge | |
| I was able to fight COVID-19 pandemic by taking vaccines because others had done it | |
| I was able to go for vaccine because I was aware of its necessity | |
| I was not able to go for vaccine because others failed to vaccines | |
| I was able to go for vaccine because I had others taking the vaccines | |

**SECTION C: COVID -19 VACCINE ADOPTION (*Tick as appropriate*)**

12. Have you ever gone COVID-19 testing?

Yes [ ] No [ ]

13. What made you go for testing? ……..

Underlying signs [ ] Mass testing [ ] Travel permits [ ]

Others [ ] specify……..

14. Have you ever gone for COVID-19 Vaccine?

Yes [ ] No [ ]

15. Which type of COVID-19 Vaccine?

Johnson & Johnson [ ]

Moderna [ ]

AstraZeneca [ ]

Others [ ]

16. How many times have you gone for vaccine? ……..
17. When did you go for the vaccine

    2021 [ ]

    2022 [ ]
18. Apart from the message elements mentioned in (8) (9) (10) are there other factors broadcasted by the TV that have influenced your COVID-19 vaccine uptake decisions?

    Yes [ ] No [ ]

    Explain……
19. How did COVID-19 pandemic stories you watched made you feel? Tick as appropriate

| | |
|---|---|
| Felt like going for COVID-19 Vaccine | |
| Felt like not going for COVID-19 Vaccine | |
| Felt like threatened | |
| Felt like fearful | |
| Felt like anxious and confused | |
| Felt like informed | |
| Felt like misled | |
| Felt like safe | |
| Felt like not safe | |
| Felt like confidence | |

**SECTION D: MODERATING FACTORS (*Tick as appropriate*)**

20. What is your religion?

    Christian [ ]

    Muslim [ ]

    Traditional [ ]

    Other (specify) …….....
21. What is the highest level of education you have attained?

    Primary and below [ ]

Secondary [ ]

Vocational/ college [ ]

University and above [ ]

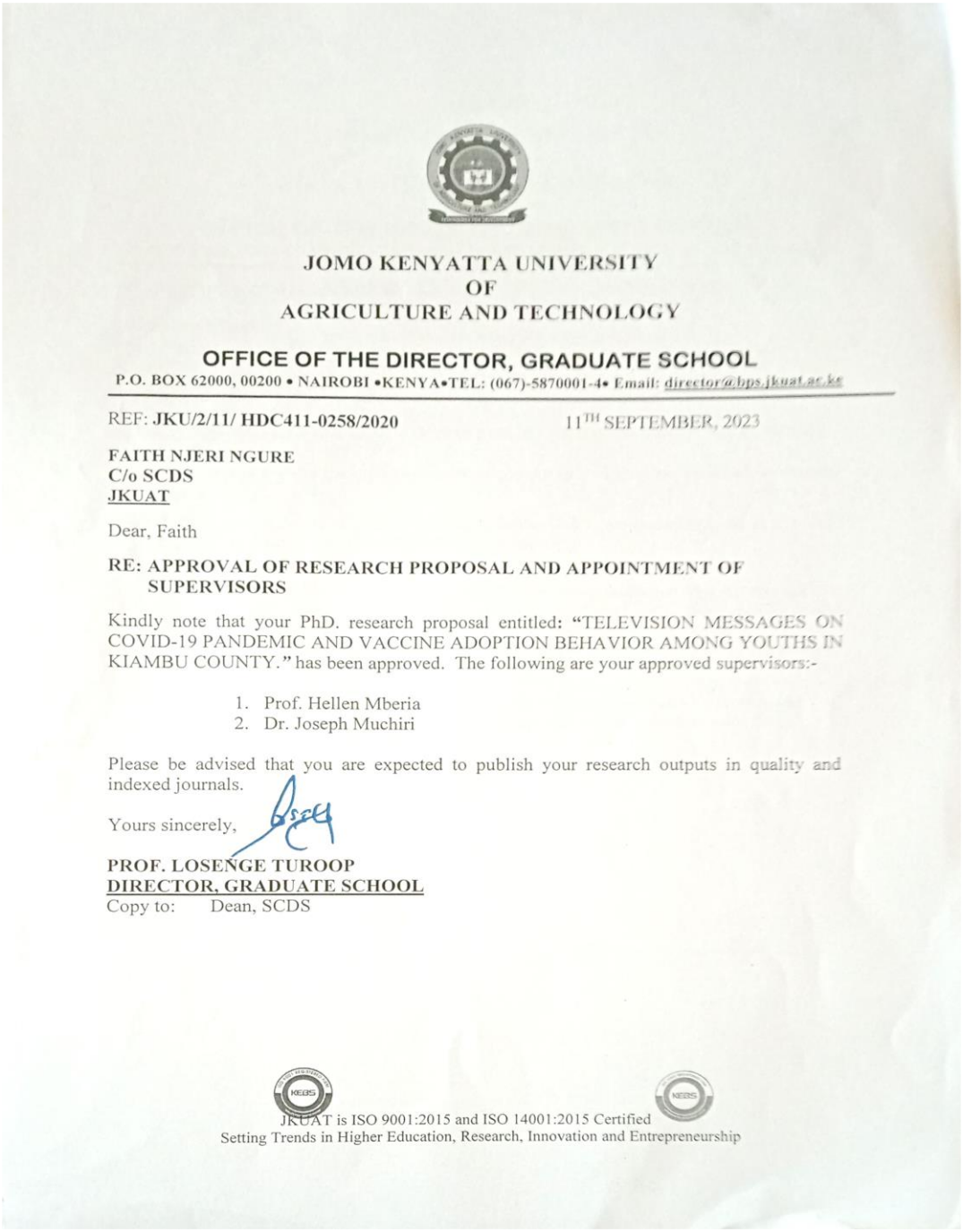
Other (specify) [ ] .....

**Appendix III: Correction Matrix**

| S/N | TITLE/HEADING | CORRECTION GIVEN | CORRECTION ACTION | PAGE |
|---|---|---|---|---|
| | Cover page | Follow the university format in the presentation of your work- 1st page. | The university format has been followed. | Cover page |
| 2. | Preliminary page | Revise the abstract.<br><br>Include definition of terms<br><br>Key words to be in the definition of terms. | I have revised the abstract.<br><br>I have included the definition of term.<br><br>Key words from abstract have been defined. | Page ix<br><br>Page x<br><br>Page x |
| 3. | Statement of the problem | Revise the statement of the problem. | I have revised the statement of the problem. | Page 7 |
| 4 | Hypothesis | Ensure they are consistent use null hypothesis. | I have reworked on the hypotheses and ensured they are all null. | Page 11 |
| | | Why hypothesis instead of research questions? | Both hypotheses and research questions included since it is a mixed study. | Page 11-12 |
| 5. | Research questions | Include research questions | I have included the research questions. | Page 11 |
| 6. | Scope of the study | Look at the tenses. | Revision of tenses to future tenses has been done. | Page 16 |
| | | Academic scope; make it clear. | The academic scope made clear. | Page 15 |

| | | | | |
|---|---|---|---|---|
| | | Geographical scope; revise it. | The geographical scope has been revised. | Page 15 |
| 7. | Theoretical Framework | How relevant is Innovation Theory to this study. | Justification has been included | Page 25 |
| 8. | Research methodology | Edit for clarity | The research methodology has been edited | Page 58 |
| 9. | Study population | Why youth/which category? | Category of youths has been included | Page 60-61 |
| 10. | Pilot test | Revise for clarity | Revision of pitot test has been included | Page 69 |

## Appendix IV: JKUAT Approval



JOMO KENYATTA UNIVERSITY
OF
AGRICULTURE AND TECHNOLOGY

OFFICE OF THE DIRECTOR, GRADUATE SCHOOL

P.O. BOX 62000, 00200 • NAIROBI •KENYA•TEL: (067)-5870001-4• Email: director@bps.jkuat.ac.ke

REF: **JKU/2/11/ HDC411-0258/2020** 11TH SEPTEMBER, 2023

**FAITH NJERI NGURE**
**C/o SCDS**
**JKUAT**

Dear, Faith

**RE: APPROVAL OF RESEARCH PROPOSAL AND APPOINTMENT OF SUPERVISORS**

Kindly note that your PhD. research proposal entitled: "TELEVISION MESSAGES ON COVID-19 PANDEMIC AND VACCINE ADOPTION BEHAVIOR AMONG YOUTHS IN KIAMBU COUNTY." has been approved. The following are your approved supervisors:-

1. Prof. Hellen Mberia
2. Dr. Joseph Muchiri

Please be advised that you are expected to publish your research outputs in quality and indexed journals.

Yours sincerely,

**PROF. LOSENGE TUROOP**
**DIRECTOR, GRADUATE SCHOOL**
Copy to: Dean, SCDS

JKUAT is ISO 9001:2015 and ISO 14001:2015 Certified
Setting Trends in Higher Education, Research, Innovation and Entrepreneurship

## Appendix V: NACOSTI License

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: **555841**

Date of Issue: **22/November/2023**

**RESEARCH LICENSE**

**This is to Certify that Ms.. Faith Njeri Ngure of Mount Kenya University, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Westpokot on the topic: EFFECTS OF TRACHOMA VERNACULAR RADIO MESSAGES' AND PREVENTIVE BEHAVIOUR IN WEST POKOT KENYA for the period ending : 22/November/2024.**

License No: **NACOSTI/P/23/31618**

**555841**

Applicant Identification Number

Director General
NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Verification QR Code

NOTE: This is a computer generated License. To verify the authenticity of this document, Scan the QR Code using QR scanner application.

**See overleaf for conditions**

**THE SCIENCE, TECHNOLOGY AND INNOVATION ACT, 2013 (Rev. 2014)**
Legal Notice No. 108: The Science, Technology and Innovation (Research Licensing) Regulations, 2014

**The National Commission for Science, Technology and Innovation**, hereafter referred to as the Commission, was the established under the Science, Technology and Innovation Act 2013 (Revised 2014) herein after referred to as the Act. The objective of the Commission shall be to regulate and assure quality in the science, technology and innovation sector and advise the Government in matters related thereto.

**CONDITIONS OF THE RESEARCH LICENSE**

1. The License is granted subject to provisions of the Constitution of Kenya, the Science, Technology and Innovation Act, and other relevant laws, policies and regulations. Accordingly, the licensee shall adhere to such procedures, standards, code of ethics and guidelines as may be prescribed by regulations made under the Act, or prescribed by provisions of International treaties of which Kenya is a signatory to
2. The research and its related activities as well as outcomes shall be beneficial to the country and shall not in any way;
    i. Endanger national security
    ii. Adversely affect the lives of Kenyans
    iii. Be in contravention of Kenya's international obligations including Biological Weapons Convention (BWC), Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO), Chemical, Biological, Radiological and Nuclear (CBRN).
    iv. Result in exploitation of intellectual property rights of communities in Kenya
    v. Adversely affect the environment
    vi. Adversely affect the rights of communities
    vii. Endanger public safety and national cohesion
    viii. Plagiarize someone else's work
3. The License is valid for the proposed research, location and specified period.
4. The license any rights thereunder are non-transferable
5. The Commission reserves the right to cancel the research at any time during the research period if in the opinion of the Commission the research is not implemented in conformity with the provisions of the Act or any other written law.
6. The Licensee shall inform the relevant County Director of Education, County Commissioner and County Governor before commencement of the research.
7. Excavation, filming, movement, and collection of specimens are subject to further necessary clearance from relevant Government Agencies.
8. The License does not give authority to transfer research materials.
9. The Commission may monitor and evaluate the licensed research project for the purpose of assessing and evaluating compliance with the conditions of the License.
10. The Licensee shall submit one hard copy, and upload a soft copy of their final report (thesis) onto a platform designated by the Commission within one year of completion of the research.
11. The Commission reserves the right to modify the conditions of the License including cancellation without prior notice.
12. Research, findings and information regarding research systems shall be stored or disseminated, utilized or applied in such a manner as may be prescribed by the Commission from time to time.
13. The Licensee shall disclose to the Commission, the relevant Institutional Scientific and Ethical Review Committee, and the relevant national agencies any inventions and discoveries that are of National strategic importance.
14. The Commission shall have powers to acquire from any person the right in, or to, any scientific innovation, invention or patent of strategic importance to the country.
15. Relevant Institutional Scientific and Ethical Review Committee shall monitor and evaluate the research periodically, and make a report of its findings to the Commission for necessary action.

National Commission for Science, Technology and
Innovation(NACOSTI),
Off Waiyaki Way, Upper Kabete,
P. O. Box 30623 - 00100 Nairobi, KENYA
Telephone: 020 4007000, 0713788787, 0735404245
E-mail: dg@nacosti.go.ke
Website: www.nacosti.go.ke

**Appendix VI: MoHK COVID-19 Vaccine Centers in Kiambu County**

| | | | | | |
|---|---|---|---|---|---|
| 208 | Kiambu | Thika Town | Thika Level 5 Hospital | 11094 | Public |
| 209 | | Limuru | Tigoni District Hospital | 11104 | Public |
| 210 | | Ruiru | Ruiru Sub-County Hospital | 10973 | Public |
| 211 | | Kiambu Town | Kiambu County Referal Hospital | 10539 | Public |
| 212 | | Kiambaa | Karuri Level 4 Hospital | 10507 | Public |
| 213 | | Kikuyu | Lusigetti Sub-county Hospital | 10666 | Public |
| 214 | | Githunguri | Kigumo Level 4 hospital | 10587 | Public |
| 215 | | Kabete | Life Point Hospital | 25364 | Private |
| 216 | | Kikuyu | Oakwood Hospital | 25503 | Private |
| 217 | | Thika Town | Thika Nursing Hospital | 24150 | Private |
| 218 | | Limuru | St Joel Community Hospital | 23966 | Private |
| 219 | | Gatundu North | Wendo Hospital Gatukuyu | 23904 | Private |
| 220 | | Kiambu Town | St.Marys Mother & Child Hospital (Kiambu Tow | 23542 | Private |
| 221 | | Kabete | Kabete Gardens Hospital | 23297 | Private |
| 222 | | Ruiru | Arise Hospital Limited | 23031 | Private |
| 223 | | Juja | Juja Modern Hospital & Maternity | 22321 | Private |
| 224 | | Thika Town | Caritas community hospital | 22054 | Private |
| 225 | | Thika Town | Avenue Hospital Thika | 20628 | Private |
| 226 | | Kiambu Town | Radiant Group of Hospital (Kiambu) | 20383 | Private |
| 227 | | Kiambu Town | St.Teresa Hospital Kiambu | 20378 | Private |
| 228 | | Kiambu Town | St Marks Hospital | 19655 | Private |
| 229 | | Gatundu South | St Judes Nursing Home Hospital | 19603 | Private |
| 230 | | Kiambu Town | Mercylight Hospital | 18597 | Private |
| 231 | | Thika Town | Central Memorial Hospital | 10083 | Private |
| 232 | | Thika Town | Naidu Hospital | 10819 | Private |
| 233 | | Ruiru | Kahawa Wendani Hospital | 10308 | Private |
| 234 | | Ruiru | Eddiana Hospital | 10162 | Private |

| | | | | | |
|---|---|---|---|---|---|
| 208 | Kiambu | Thika Town | Thika Level 5 Hospital | 11094 | Public |
| 209 | | Limuru | Tigoni District Hospital | 11104 | Public |
| 210 | | Ruiru | Ruiru Sub-County Hospital | 10973 | Public |
| 211 | | Kiambu Town | Kiambu County Referal Hospital | 10539 | Public |
| 212 | | Kiambaa | Karuri Level 4 Hospital | 10507 | Public |
| 213 | | Kikuyu | Lusigetti Sub-county Hospital | 10666 | Public |
| 214 | | Githunguri | Kigumo Level 4 hospital | 10587 | Public |
| 215 | | Kabete | Life Point Hospital | 25364 | Private |
| 216 | | Kikuyu | Oakwood Hospital | 25503 | Private |
| 217 | | Thika Town | Thika Nursing Hospital | 24150 | Private |
| 218 | | Limuru | St Joel Community Hospital | 23966 | Private |
| 219 | | Gatundu North | Wendo Hospital Gatukuyu | 23904 | Private |
| 220 | | Kiambu Town | St.Marys Mother & Child Hospital (Kiambu Tow | 23542 | Private |
| 221 | | Kabete | Kabete Gardens Hospital | 23297 | Private |
| 222 | | Ruiru | Arise Hospital Limited | 23031 | Private |
| 223 | | Juja | Juja Modern Hospital & Maternity | 22321 | Private |
| 224 | | Thika Town | Caritas community hospital | 22054 | Private |
| 225 | | Thika Town | Avenue Hospital Thika | 20628 | Private |
| 226 | | Kiambu Town | Radiant Group of Hospital (Kiambu) | 20383 | Private |
| 227 | | Kiambu Town | St.Teresa Hospital Kiambu | 20378 | Private |
| 228 | | Kiambu Town | St Marks Hospital | 19655 | Private |
| 229 | | Gatundu South | St Judes Nursing Home Hospital | 19603 | Private |
| 230 | | Kiambu Town | Mercylight Hospital | 18597 | Private |
| 231 | | Thika Town | Central Memorial Hospital | 10083 | Private |
| 232 | | Thika Town | Naidu Hospital | 10819 | Private |
| 233 | | Ruiru | Kahawa Wendani Hospital | 10308 | Private |
| 234 | | Ruiru | Eddiana Hospital | 10162 | Private |
| 235 | | Thika Town | Vineyard Hospital | 10154 | Private |
| 236 | | Ruiru | Ruiru Hospital Limited | 10974 | Private |
| 237 | | Thika Town | Mt Sinai Nursing Home | 10740 | Private |
| 238 | | Thika Town | Caritas community hospital (Township) | 10088 | Private |
| 239 | | Thika Town | Thika Nursing Home | 11097 | Private |

**Appendix VII: YouTube Videos**

| TITLE | LINK |
|---|---|
| **Citizen TV** | |
| COVID-19 IN KENYA Positivity rate climbs to 12.5% | https://youtu.be/34Qcsw8I-Co |
| COVID-19 UPDATE: 473 new cases, 76 recoveries, 8 deaths | https://youtu.be/X58TscxWxJI |
| COVID-19 positivity rate hits 24.4% as MoH reports 1,372 new cases | https://youtu.be/2sbOZf_wIU4 |
| Over 25 million Kenyans yet to get jabs since vaccination was launched | https://youtu.be/NtS6j0Z7oLE |
| MoH alarmed by the rising COVID-19 infections in the country | https://youtu.be/BkRHvR1ZUgM |
| Uhuru says civil servants will not be forced to get COVID-19 jabs | https://youtu.be/-dy9ll_pnQw |
| Citizen TV exposes how bars and travelers are breaking COVID-19 rules | https://youtu.be/PoDGHBLMH3k |
| Citizen TV takes you inside a COVID-19 isolation ward at KU Hospital | https://youtu.be/u-iDtcvuJ38 |
| Kenya's COVID-19 positivity rate rises to 5% | https://youtu.be/BxP9ro7KoG0 |
| COVID-19 IN KENYA \| Positivity rate climbs to 12.5% | https://youtu.be/34Qcsw8I-Co |
| COVID-19 positivity rate at 30.6 % as MoH announces 1,223 new cases | https://youtu.be/3LOPhJkG0HI |
| Understanding the latest trends in COVID-19 numbers | https://youtu.be/lZnszaK-aAU |
| Over two million COVID-19 vaccine doses expire as Kenyans remain hesitant to get the jab | https://youtu.be/GbqZRIJEoBY |
| Kenyans urged to observe COVID-19 protocols | https://youtu.be/6C1OX-vhxG0 |
| Covid 19 numbers raise by 163 cases | https://youtu.be/kstQF3aBMPc |
| COVID-19 positivity rate hits 24.4% as MoH reports 1,372 new cases | https://youtu.be/2sbOZf_wIU4 |
| **KTN** | |
| COVID SITUATION IN KENYA: 1,354 new positive cases recorded out of a sample size of 5,331 | https://youtu.be/h1QZL2Vlm7M |
| Nairobi leads with 241 cases of COVID 19 in the last 24hrs | https://youtu.be/rUt_Pf9qMDE |
| How Kenya can effectively contain Coronavirus; the experts explain | https://youtu.be/5KTib6FhZXA |
| Jitters over omicron COVID-19 variant | https://youtu.be/JvnQfMSFVgo |
| 100 days of Corona: Tracking back Kenya's 100 days under Covid-19 | https://youtu.be/d-9TK9qWtjg |

| | |
|---|---|
| No entry into public areas without the COVID-19 vaccine | https://youtu.be/mut0mtXmcOk |
| Kenya records highest number COVID-19 deaths as 23 succumb in a single day | https://youtu.be/9HsxmRUyrao |
| **NTV** | |
| Kenya records 25.6% Covid 19 positivity rate | https://youtu.be/1FRxXoUOKlA |
| Covid-19: MoH targets to have all Kenyans vaccinated by June 2022 | https://youtu.be/9b5JnBrGitM |
| Lockdown looms following increase of COVID-19 cases | https://youtu.be/Os-fs103p-I |
| MoH expresses concern over the low uptake of COVID-19 vaccine among people aged above 50 years | https://youtu.be/ljzoYw0PPbo |
| Covid-19: Kenya records highest daily positivity rate at 22% | https://youtu.be/bX0_scw-qtQ |
| BATTLE FOR BREATH; Exclusive look into Kisumu's COVID-19 wards | https://youtu.be/ctbkyuEIHns |

**Appendix VIII: Work Plan**

| MONTH | CONCEPT DEVELOPMENT | PROPOSAL DEVELOPMENT | PROPOSAL DEFENSE MATRX | PILOT STUDY | DATA COLLECTION | DATA ANALYSIS & PRESENTATIONS | PUBLICATIONS & SEMINARS | INTENT TO SUBMIT | CLEARACE, BINDING & |
|---|---|---|---|---|---|---|---|---|---|
| JAN-MAY 2022 | | | | | | | | | |
| MAY-DECEMBER | | | | | | | | | |
| JANUARY-JUNE 2023 | | | | | | | | | |
| JULY-SEPTEMBER 2023 | | | | | | | | | |
| SEPTEMBER-DECEMBE 2023 | | | | | | | | | |
| JANUARY- JULY 2024 | | | | | | | | | |
| AUGUST-DECEMBER 2024 | | | | | | | | | |
| JANUARY-DECEMER 2025 | | | | | | | | | |
| JANUARY - APRIL 2026 | | | | | | | | | |