The Effectiveness of Electronic Media on the Utilization of Health Services in a Rural Setting:.

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DECLARATION

Declaration

I declare that this work has not been previously submitted and approved for the award of a degree by this or any other University. To the best of my knowledge and belief, the dissertation contains no material previously published or written by another person except where due reference is made in the dissertation itself.

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ABSTRACT

The media landscape has evolved over time with advancement in information technology. It has not only played a key role in healthcare program design, but also in shaping health behaviour and driving utilization of health services through digital communication channels. Currently, there is special attention drawn to electronic media because of its wide coverage resulting from the presence of new digital platforms like, digital TV, digital radio, social media, internet pages, mobile-based SMS and voice messaging. This evolution of media has spread widely to involve the rural settings due to increased mobile phone and other digital device penetration The goal of this research study was to establish the effectiveness of electronic media on utilization of health services in the context of a rural setting. The health "Belief Model" and "the Planned Behaviour Theory" formed the theoretical basis of this study. This cross-sectional, mixed method sequential explanatory study involved collection and analysis of quantitative and qualitative data from In-patients, Outpatients or their caretakers seeking healthcare services at two medical centres in southwestern Uganda. A close-ended questionnaire was administered (response rate 91.8%) and four focused group discussions were conducted to collect qualitative data. Radio and mobile phone SMS dominate the rural population as accessible electronic media channels for general information. Legacy media electronic media channels radio (42.1%) and TV (25.3%) dominated the general population. Social media and other internet sites were the preferred channels by higher education levels (tertiary level) and professionals. The study found that generally, electronic media has positively influenced the way people utilize healthcare services with social media being the most effective in influencing utilization of health services (OR=9.422, CI: 0.991:3.496, P<0.001) followed by TV (OR=8.207, CI: 0.876:3.334, P<0.001). Electronic media was also more effective among the male gender (OR=1.76, CI:0.214:1.277, P=0.006) than female. Age and education level lacked significant influence on utilization of health services.

The study concluded that whereas internet based electronic media is gaining popularity, the legacy electronic media of TV and radio are still widely preferred and used for health information. The effectiveness was more associated with male gender, gainful employment (commercial farming, business and professional work) The study further concluded that even after information has been received, other social determinants of health are still vital and other factors are considered before a final decision was made to visit a health facility. These are; a) confirmation from colleague b) Availability of money, and c) consent from the payer.

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ABBREVIATIONS

ANC:	Antenatal Care
COVID-19:	Coronavirus 19
HBM:	Health Brief Model
LMIC:	Low- and middle-income Countries
MAXQDA:	Max Weber Qualitative data analysis
OPD:	Outpatient Department
SMS.	Short Message Service
SPPS:	Statistical package for social science
TPB:	The Planned Behaviour
TRA:	Theory Of Reasoned Action
TV:	Television
UCC:	Uganda Communications Commission
UHC:	Universal Health Coverage
WHO:	World Health Organization
UVRI:	Uganda Virus research institute
UHRO:	Uganda Health Research Organization
UNCST:	Uganda National Council of Science and Technology
SU-IERB:	Strathmore University Institutional and Ethic review Board
MBA-HCM	Masters of Business administration in healthcare management.

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1. CHAPTER ONE: INTRODUCTION

1.0. Introduction

The chapter intends to establish the context of the whole study by looking at what electronic media is and how it is used in health care program design and promotion. It also explores Uganda's health system putting into context the rural health system and its dynamics. The chapter also goes on to explore how health information flows in the rural setting and its evolution and impact on utilization of health services.

1.1.The study Background

Due to information technology transformation, in the 21st century, media companies have the opportunity to distribute media content on multiple platforms. For a long time, media houses have had to distribute their contents via print media, broadcast media, and sound recordings. Today, content can be distributed easily through multiple platforms such as computers, smart phones, Mp3 players, and other electronic devices. The audience is also empowered and is able to provide content in real time, via internet pages, social media media platforms like Facebook and WhatsApp, and Audio-video platforms especially YouTube (Albarran, 2010). Newer interactive platforms have even improved the electronic media communication through enabling audio messaging through new platforms. Traditional media houses are shifting to production of online content and customer subscription revenue subscription models (Newman, 2022). There is also a shift in communication of health research and mass media plays an important role in communicating health research and services to patients, and in shaping public perceptions and decisions about health (Bekkum & Shona, The challenges of communicating research evidence in practice: perspectives from UK health visitors and practice nurses, 2013)

Electronic media is a component of mass media in a broader sense. It uses electronic and electromechanical energy to enable the audience to access information. The new digital channels (electronic) used to convey information to broader segments of the population are part of the information technology evolution that has affected every part of human life. The newer channels have potential not only to reach broader segments at sustainable costs but also enables

targeted communication and hence becoming vital for Universal Health care delivery (Shabbir, et al., 2015).

The role of health information in achieving Universal Health Coverage and Sustainable Development Goals remain central. Universal access to health information is a human right and is essential to achieving universal health coverage (UHC) and the other health-related targets of the sustainable development goals (SDGs) (Pakenham-Walsh, Royston G, Pakenham-Walsh N, & Zielinski C, 2020). The rise of pandemics over the last half of the 20th century and the beginning of the 21stg century, a case in point being COVID-19 pandemic, has further demonstrated the importance of access to relevant and trustworthy health information to enable people to make decisions that protect their health and well-being (WHO, 2020)

Electronic media is a critical communication method that has been used by several organizations for different purposes including effective implementation of public health programs and achievement of overall health system objectives. The emergence of social media and other digital media channels has revolutionized the speed and the legitimacy of health information. This has transformed and influenced healthcare-seeking behaviour and hence healthcare outcomes through internet confirmation of the local information (Doran, David, & Marie-clare, 2012). The transformation and influence of healthcare seeking behavior remains,

Through mass media, messages reach the public (consumers) in different forms; These include health news or media campaigns (advertising), and recently as social media and other electronic platforms (e.g., Text messaging, smart phone-based applications, computer-based websites and blogs) (Frieden R. , 2014). In most cases, health news has a primary intention of increasing awareness about public health matters or mobilizing support from members of the society and leaders (Frieden R. , 2014). On the other hand, media campaigns have been used by different health sector players both as an approach to health promotion e.g., change of diet, promoting activity, reduction of tobacco use behaviours or even marketing of healthcare products. In whatever form the messages are delivered, electronic media communication through different channels has potential to raise awareness, shape knowledge, attitudes, and drive behavioral change in a wide range of health topics (Melanie, Loken, & Robert , 2010)

African rural communities have had access to information through electronic channels, especially radio and television for a long time, mostly established by the colonial governments between the 1930s and 1990s (Esipisu & Kariithi, 2011). In Uganda, various mass media channels have been used to deliver health related messages to different target groups mainly as a demand creation tool for government health programs or branding in private healthcare (Basu, 2009). These public health programs focus on mass dissemination of preventive and behavior change communication to a large audience of both rural and urban population. There has been growing recommendation for use of a strategic mix of multimedia to effectively communication behavioral change and health utilization behavior (Okaka, 2008)

1.1.1. Electronic Media in Uganda

Mass media by its definition refers to any form of communication that targets a wider and non-discriminate audience. Traditionally this refers to print media like newspapers, posters, stickers and billboards. Electronic media, in most cases referred to as digital media, is a type of media where information is transmitted through digital devices, rather than print (Xie-Connell, 2015). It takes the form of both the traditional broadcast media such as television, radio and the new platforms such as internet, social platforms, digital audios (podcasts), and smartphone applications (Czaplicki, 2023). In contemporary times, internet and information technology has enabled new and more efficient forms of communication like social media platforms, internet sites and Short Message Services (SMS) (Czaplicki, 2023)

By 2020, Uganda had a diverse media landscape consisting of printed (newspapers and magazines, a growing broadcast media sector), Television, radio, online and converged platforms (Ford Foundation , 2023) Like other developing countries Uganda's internet-based media has been growing rapidly due to global information technological transformation especially the mobile phone industry. "The News Media" Organizations (NMOs) in Uganda have developed due to the privatization policies nearly 3 decades ago and now provide a wide range of channels that are accessed by a magnitude of the Ugandan population . These policies made investment in media very attractive and hence a high influx of investors in this space including those media houses that are completely internet based (Media Ventures East Africa, 2021). The development of the media sector supported by attractive policies have made electronic media now widely accessed even in the rural population. Thus, by October 2023, the

country had 120 licensed radio stations, 20 Television stations multiple internet-based media houses, 15 print newspaper companies (Media council of Uganda, 2023)

It is evident that Uganda's media sector has evolved over time and there is observed penetration and dominance of the new electronic and digital media channels like internet sites, social media, and other smartphone platforms even to the rural level. In digital broadcasted space, social media takes the biggest proportion with 2.05 million out of the 11.77 million internet users, and 24.6% internet penetration by 2023 (Kemp, 2023). In terms of the traditional legacy media, radios continue to dominate the rural communication systems as compared to TV, and other internet-based channels mainly due to lack of access to electricity and internet connectivity (Okoth, 2021)

In the context of an increasing decline in print circulation, radio and television remain the most reliable sources of information for Ugandans in rural settings. The majority of Ugandan adults (87%) possess radio, 75% possess phones 34% had a television and about 13 percent have access to the internet (BBC, 2019). In terms of utilization of electronic media, 73% of the population receive information through radio at least in a week and 28% watch TV and 27% use internet platforms (Mayers & Harford, 2020).

1.1.2. Electronic media in rural context

Largely, the rural communities remain with multiple barrier to access and utilization of electronic media because of severe affordability and skills constraints where literacy levels, lower electronic device penetration, internet infrastructure are the main characteristics of the barriers (Jeffrey, 2010) Despite these challenges the growth of mobile technology has enabled millions of people in the rural settings to access information such as text messages, automated calls, internet news sites and social media platforms.

However, the coverage of mobile phone-based platforms, especially social media platforms remains largely an urban-based phenomenon and mostly concentrated among the youth.

Only 24.6% of Uganda's 45 million people have access to information through mobile phones and over 35 million people live in rural areas (Kemp, 2023). Hence in the Ugandan rural setting, electronic media consist of traditional broadcast channels like Television, radio, and the new digital media like text messages, internet pages and social media platforms.

Health information reaches the rural communities as messages generated by public health providers in the form of mass messages, radio and TV programs (WHO, 2023). However, residents of rural communities may face more difficulties in accessing electronic health information than residents in urban areas because of limited access to media and specialists (Xuewei, et al., 2018). These challenges may be structural, socio-economic and cultural and make it difficult for the rural population to receive, understand or act on the health information (Buchanan & Onyinye, 2024) Similarly, electronic media in a Ugandan rural setting is also characterized by infrastructural challenges and lower levels of literacy. These interrelated challenges lead to inconsistent access and information distortion posing a question of effectiveness of the health information received through these channels.

1.1.3. Health information flow, communication structure and its evolution in rural communities.

For a long time, the contribution of culture in shaping Healthcare communication remains relevant public health programing and implementation. Despite this fact, empirical evidence about information flows within lower community structures remains limited (Kreuter & MCclure, 2004). Whereas, there has been improvement in communication systems permeating the rural, in many settings or low resource contexts and local social networks have strong influence on the spread of information and its effectiveness (Brungeman, Turinawe, & Twemisisi, 2020). Hence in some communities, social networks primarily affect healthcare seeking behaviors by affecting the flow of information, instead of social influence (Behrman, 2007). “This is particularly the case in many low-resourced, rural communities, where access to accurate health information is problematic” due to information infrastructural challenges (Campbell & Cornish, 2012). Several studies have also demonstrated the role of leaders in shaping the functionality of health information flow systems.

The last two decades have been characterized by transformation of communication structures in the rural set up, being driven by technology especially mobile phone penetration, emerging social media usage, availability of internet, radio and TV. This has promoted democratization of access to information through different electronic media channels even in the rural communities. Whereas there has been increased mobile phone penetration and internet usage,

what still remains evident is that radios still remain the most commonly used channel to access information in the rural areas (Kenny , 2008).

Due to the dynamic nature of the rural communities in Uganda, the effective roles played by traditional social networks, electronic media or the interaction of both, to determine healthcare utilization at the facility remains unknown. However, “studies on social networks in rural areas have shown that people’s health remains socially interdependent and that health and health care transcends the individual”. At the core of this fact, is the way information flows and how effective it impacts and shapes the behavior of the community members (Musoke, 2001)

1.1.4. The Ugandan rural setting

In different contexts and to different people, the term “rural” means different things, such as agricultural activities, small towns, and areas with low population density (World Bank, 2020). Poorly developed social service infrastructure, traditional practices, under-provision of services and dominance of informal socio-economic structure characterize rural African settings (Shinichi, 2000). For the context of this study, a rural health facility is defined as a private or public facility located in semi- urban or rural areas but serves patients that reside in a rural setting. On the basis of these definitions, the rural population in Uganda was 73.84 % of the population in 2022 (National population council, 2022).

Whereas the commonest definition of rural considers the socio-economic developmental paradigm, the context of health programs and health policy considers literacy levels, availability of healthcare infrastructure, scale of health service delivery and the structure of health seeking behavior to define rural settings.

In Uganda 76% of the population (35 million) people were residing a rural setting by end of 2023 mainly engaged in subsistence production and small scale business (Suzuki & Aziz, 2021)

The Ugandan rural setting is characterized by lower education levels with a predominantly peasant population with limited resources that affect their social service utilization (Seera, 2014) . Like other rural settings in sub-Saharan Africa, the social cultural landscape of the rural settings in Uganda affect access to social services. These social cultural dynamics like gender inequality and traditional practices are bottlenecks for maternal and child health services (Adijwanou & LeGrand, 2014)

1.1.5. Rural healthcare systems

Rural access to health care remains a challenge in sub-Saharan Africa due to urban bias, social determinants of health, and transport related barriers. The system often lacks equity, leaving disproportionately less health center access for the poorest residents with the highest health care needs. Lack of health care equity in Sub-Saharan Africa has become of increasing concern as countries enter a period of simultaneous high infectious and non-communicable disease burdens, the second of which requires a robust primary care network due to a long continuum of care" (Dowhaniuk , 2021). Important to note is that, whereas rural Africans face these equity challenges, more than 60% of the population lives in rural areas and 80% of them face challenges in accessing effective healthcare. There is also evidence that the urban to local inequalities in maternal and infant mortality result from long standing neglect of the rural healthcare system (Amzat & Razum, 2017).

In Uganda, the rural health system can broadly be categorized into two major groups. The formal system also known as the "regulated" system and the informal or the unregulated systems. The formal system consists of lower government health centers ranging from community health workers to health center IV and a few formally registered private clinics, drug shops and community pharmacies (MOH, 2023). The informal system consists of a number of private clinics, unlicensed drug shops, traditional healers and traditional birth attendants.

The Ugandan healthcare system, the ranking of health facilities and their service portfolio differ from other East African countries especially Tanzania and Kenya. At the community level, the system starts with Village health teams who distribute medicines and volunteer to collect primary healthcare data. The highest level being National referral Hospitals (Azevedo, 2017).

According to (UDHS, 2016) in a rural healthcare system, about 37% of the population visit lower government facilities, 40% visit private for profit facilities, 12% visit private not for profit and 10% go to traditional practitioners. With this observation, private providers whether regulated or unregulated provide health services reaching a wide population in the rural areas, perhaps more than public facilities (Lule, et al., 2010). With nearly 40% utilization, the public healthcare system in rural settings focuses on provision of primary healthcare services and a narrow scope of curative services especially oriented towards maternal and child health

services, treatment of malaria, HIV and diarrhea diseases. A health center IV is the commonest highest-level facility in most Ugandan rural settings where more services beyond primary healthcare are available especially treatment of non-communicable disease and surgical procedures like cesarean section, herniorrhaphy and abdominal surgery (ThinkWell, 2020).

In Rural settings, private healthcare tends to be more aggressive in the provision of services, with the focus on a wider range of services including the provision of secondary and some tertiary services and they tend to provide health services that are individualized services for longer hours to their clients (Konde-Lule, et al., 2006).

Health care provided is licensed according to the scope of services provided. The registration status of the private facilities in rural Uganda includes drug shops, clinics, domiciliary, and private hospitals (Rutebemberwa, et al., 2016).

The health seeking behaviors are influenced by the availability of these systems and the existing relationship between facility owners or operators and the patients. Generally, in most communities in Uganda, the healthcare sought by the population is curative, where about 83% of patients seek care when they perceive ill health and are usually sick people brought into the health facility by themselves or their attendants. However preventive services are also offered at community facilities, at almost equal scale for private and public facilities (Okuonzi, et al., 2006). But preventive service utilization remains low and more dedicated towards immunization, antenatal care and screen of minor ailments partly because the public services remain underfunded and, in some times, higher user fees are needed PNFPs and private (XU, et al., 2006). For whichever healthcare need, the factors that influence the facility of choice are multifactorial, including awareness of the existence of the services needed by the patients.

1.2.Problem definition

Healthcare communication is an important aspect of promoting well-being and health behavioral change (Redmond, Baer, Clerk, Lipsitz, & Hicks, 2010). Well planned and effective communication promotes universal access to health care services both at community and facility level. The World Health Organization (WHO), has put effective communication and disease education as the top priority in achievement of Sustainable Development goals 3. And the communication strategy of WHO aims at protecting the health of individuals, communities and nations by providing information, advice and guidance in a way that is effective and sustainable (WHO, 2017). For larger audiences, the approach is usually the use of mass media

which is currently dominated by electronic channels both emerging ones like internet-based, mobile-based platforms and the traditional channels like TV and radio that have been digitized to some extent. The internet era, ushered liberalization of information and hence the availability of communication networks powered by the internet and technology has transformed the global media landscape. In the current economic, technological, media and information contexts, communication is increasingly becoming both global and local (Hemer and Tufte 2005). Hence one would say that the emergency of the new global media technology is a powerful force for public health transformation at a wider scale, but the developing countries remain with remarkable challenges in regards to communication (Ravendra & SubbaRoa, 2016).

The rapid growth of the internet triggered an information revolution of unprecedented magnitude both in rural and urban. Despite this, researchers continue to raise concerns about the use of the internet to disseminate health information or deliver health services because patients can easily miscomprehend the information (Shakeel, et al., 2017). The miscomprehension of the information is more when the audience has low literacy levels that characterize the rural settings. As result, the rural population may turn to colleagues for health information before the final decisions are done. This further distorts the health information and affects utilization of the health services (Phillipa & Isaac, 2017).

Universal health information access and is central to achievement of universal health care coverage since providing financial protection against healthcare expenses starts with preventing spread and impact of diseases. Effective communication is central to preventing spread and impact of diseases (Andrea , Karl , & Ulla-Karin, 2013)

Due to the transformation of the media industry resulting from the new telecommunication networks, the speed with which information moves and the control over the content shared has changed and has outpaced most of rural settings (Albarran, 2010). Therefore, the transformation of the mass media and communication industries into digitally enabled channels continue to pose both opportunities and risk in healthcare communication. For example, as an opportunity, social media (a new health communication channel) has demonstrated potential for disease tracking and surveillance, mass health communication, knowledge transfer, and learning among health workers and facilities. However, inaccurate content or poorly conceptualized or poorly understood information can lead to undesirable health behaviors and poor health outcomes among consumers. Hence there is a need to formulate clear information

if organizations opt to use digital channels (Hagg, Leanne, & Dahinten, 2018). Central to clear formulation of the information is the understanding of the information consumer audience.

Even with effective designed content and communication strategies, the effectiveness of a communication plan depends on the channel used to convey the content. Generally, there remain diverse factors that influence the utilization of different media channels to access this information information. For example, the utilization of media tends to change with age (Dimmick, McCain, & Bolton, 1979). The choice of media used also depends on the individual interests and attitudes. For example, adults may adopt television because it offers topics and conversation (Davis & Westbrook, 1999). On the other hand, young people have technology skills but some of them lack access to the digital devices and if access, they are likely to utilize it for entertainment rather than legitimate information sources (Beverly A, Ronald , & Katy , 2011) . Whereas these factors significantly determine how a media channel is preferred and hence chosen by the individual, communicators disseminating health messages has less regard to these factors. Instead, the popularity of digital media has resulted into a growing tendency among service providers and public health agents to utilize digital and electronic media to disseminate health communication and marketing information indiscriminately. But concerns about the accuracy and thus effectiveness of health information from mass media (especially electronic) among the rural population are also growing because (a) The information may not address context specific (cultural) barriers to behavior change, (b) inappropriateness of the channels to reach target audiences and (c) Narrow focus of the media messages in a face of multiple issues. In short, some mass media campaigns lack the public engagement to elicit significant effect (Suruchi, Corrinne, & Joanna, 2014)This further poses a question on the effectiveness of electronic media in addressing the demand component of healthcare utilization especially in a rural setting.

The evolving epidemiological transition from infectious to non-communicable diseases, further increases the need for the general population (including rural) to continuously utilize hospital/facility-based health services that range from routine screening tests to therapeutic interventions. In the evolving landscape of the health care services, primarily due to this paradigmatic shift from communicable to non communicable (NCDs), effective communication is essential to delivering any objective of the healthcare intervention (Meena, Meera, & Chivukula, 2023) .This will require sustained and contextually designed demand creation strategies than include use of effective health communication channels and tactics.

Therefore, future research should investigate the relative effectiveness of various media platforms for different users, other potential uses, and pursue a broader geographical focus (Hagg, Leanne, and Dahinten, 2018) to uncover the best approaches to harness the opportunities this transformation has brought in terms of demand creation.

Creating demand for health services remains unique and the effectiveness of the efforts requires that the information be structured based on the target audience and then be shared through the appropriate channels at the right time. “It is a fact that, access to the health messages depend on the accessibility, affordability, acceptability, and appropriateness of the communication sources, channels, and content media; therefore, without such access, media communication is regarded as speaking into space because target audiences may not receive the message that health communicators intended to deliver to the target audiences” (Ghio, et al., 2021). It is therefore important to establish electronic media channels that are accessible, affordable, and appropriate for different demographic segments of the population. Furthermore, to develop effective health communication campaigns and marketing approaches for the rural population, it is important to understand how electronic media usage has evolved and how its access and utilization is related to health services uptake in a rural setting. This study will generate empirical evidence on this topic by conducting a quantitative and qualitative analysis of the potential influence of electronic media on utilization of facility-based Health services health among Uganda’s rural population. Therefore, results of this study will not only yield empirical evidence to guide contextually suitable strategies that intend to create demand for facility-based health services among the rural population, but the study results will also establish the effectiveness of electronic media among different demographic groups in a rural setting.

1.3.Research objectives

This study seeks to establish the effectiveness of electronic media on utilization of health services among adults in a Ugandan rural setting

1.3.1. Specific objectives

a) Establish the electronic media channels used by different demographic segments of the rural population to access health information.
b) Determine the role of electronic media on overall utilization of facility- based Health services in a rural setting.
c) Establish the effectiveness of different electronic media on utilization of facility-based

health services among different demographic segments of the rural population.

1.3.2. Research questions.

The study will address the following question.

What are the different electronic media channels used by different socio- demographic segments to access health information in rural settings?
How effective is electronic media on utilization of facility- based health services in a rural setting? Does the effectiveness of electronic media on driving the utilization of facility-based services differ among different demographic segments of the rural population?

1.4. Scope of the study

The study was conducted on adult individuals aged between 18-69 years of age attending OPD department and in patients at Doctors' Case Medical centers in Rukungiri and Bushenyi. Primary data was collected from participants seeking health services at the two medical facilities for a period of 30 days.

The two facilities that were selected are part of a private formal health system, registered and licensed by the ministry of health and the Uganda medical council. The facilities are owned by doctors Case Medicals ltd, a private limited liability company that operates in southwestern Uganda. The facilities are located in two different municipalities and serve a wide range of clients with different socio-demographic characteristics. As a health education initiative, the two facilities have been engaged in radio and television programs and using the health management information systems through SMS messages to disseminate health information to the general population. The facilities also have presence on the internet and social media, and a website where different healthcare messages have been shared with the public.

The two health facilities are; Doctors case medicals Rukungiri and Doctors case medicals Ishaka. Established in 2016, doctors case medicals Rukungiri operates six departments namely; Outpatient department, In-patient department, Dental department, maternity and Antenatal, Laboratory and Radiology. The out-patient department currently registers between 1,500 to 1,700 adult patients monthly. The In- patient department registers between 250 to 400 monthly

admissions. Doctors case medicals Ishaka was established in august 2022 and is found in Bushenyi district. It operates six departments that is; Outpatient department, Inpatient department, Dental department, maternity and Antenatal, Laboratory and diagnostics, and Radiology.

The patients who seek services from these facilities present with both Communicable and non-communicable diseases on a daily basis and patients vary in age ranging from 0 years to 98 years. About 75% of the patients pay cash for the services received while 24% have private insurance cover, and 1% receive sponsorships form their relatives and friends. The average age of the patients attending OPD at Doctors case medical centers is 33 years, and averagely 60% being female. Majority of the patients bring themselves for care, sometimes accompanied by an attendant. However, for the elderly and children, they are usually escorted by their children and parents respectively. The patients also vary both in socio-economic status, education status and presenting complaints.

The facilities that were included in the study have been running health education programs on various electronic media channels. These include routine SMS to clients, radio talk shows, announcements, TV shows and other internet-based programs. Doctors case medicals Rukungiri has been running a health education program on radio Rukungiri called “Buza omushaho” and occasional TV programs on the Mbarara Based TV west. The facility in Ishaka participates in a weekly program and runs a client feedback program that frequently sends SMS to the clients that have ever visited the facility. In addition, monthly special service comps are always communicated through electronic mass media exclusively. Other facilities in the study area are also involved in production and dissemination of health information aimed at creating demand for their services.

1.4.1. Geographical coverage

In this study Doctors Case Medicals-Ishaka found in Bushenyi district services patients from the Ankole sub-region. Ankole subregion is located in southwestern Uganda and comprises of 12 districts of buhweju, Bushenyi, Ibanda, Isingiro, Kazo, Kiruhura, Mbarara, Mitooma, Ntungamo, Rwampara, Rubirizi, and Sheema. The facility that was selected serves patients from Six of the twelve districts, that is, Bushenyi Sheema Rubirizi Ntungamo, Buhweju and Mitooma. The twelve districts of Ankole are home to 3.6 million people (UNHPC, 2024) with the districts in the catchment area of the selected facility contributing 1.7 million people (UNHPC, 2024).

Doctors Case Medicals- Rukungiri represents Kigezi sub-region, a region comprising six districts of Rukungiri, Rukiga, Kabale, Kanungu, Kisoro and Rubanda with are home to 1.5 million people (UNHPC, 2024). The selected facility services patients from three of the six districts, that is, Rukungiri, Rukiga and Kanungu districts, with a combined population of 700,000 people. Generally, the two targeted facilities serve patients who reside in semi-urban and rural areas of Nine districts. Though the districts have variation in household incomes, and about 89% of the population in these districts live in rural areas and have to frequently travel to access services to semi-urban and trading centres (UNHPC, 2024).

1.4.2. Significance/justification

This study focuses on the effectiveness of electronic media on utilization of hospital- based services in a context of a rural setting. While advancements in technology have increased access to information among the population in the rural settings, the barriers that render the information's effectiveness persist in the rural. These include low literacy level, socio-cultural influences on health decision making and poverty.

There is increased reliance on electronic channels for dissemination of health information in Uganda. During COVID-19, radio, TV and digital platforms were used as main channels used to disseminate health information to the general public (Cristin, Storer, Arinaitwe, Kamurari, & Adriko, 2021). There is little knowledge on the extent to which the new forms of electronic media are being used by different segments of the rural population (Arsenijevic & Andevski, 2015) quality and other outcomes. Therefore, knowledge about the effectiveness of the electronic health information on health decision making especially where and whether to go for care is crucial to guide any healthcare demand creation efforts (Sabatini & Hong, 2013). By achieving its objectives, healthcare managers have been guided on how they can effectively and efficiently create demand for facility-based healthcare services.

In addition, the healthcare industry in developing countries has its own challenges; the hospital administrators need to increase their operations efficiency and effectiveness in healthcare delivery by strengthening the information component of public health care delivery (Ouma & Herselman, 2008). This requires that the health service providers have a clear understanding of the effective channels to communicate to their audience. Both private and public health

organizations have been guided by evidence generated by this work to achieve effective and efficient product and service communication among specific segments of rural population with efficiency.

1.5.Chapter summary

Chapter one focused on the definition of key subject terms, setting of the context of electronic media in a rural setting and defining the study objectives. Research objectives and hypotheses have been stated. The Chapter also explored the study justification, definition of the research problem and described the study area.

The next chapter focuses on the empirical and theoretical review and also evaluates the work done by different scholars on the study subject to highlight the existing gaps in literature on use of electronic media in a rural setting. The theoretic framework of the study was also formulated to demonstrate the interaction of the study variables and how they interact to determine dependent variables of health service utilization.

2. CHAPTER TWO: LITERATURE REVIEW

2.0.Introduction

This chapter explores the theoretical concepts that formed a basis for this study. The theories explored are related to health seeking behaviors and communication media with special emphasis on the work already done by different scholars about the factors that influence the utilization of health services. This study considered the health belief model (HBM) and the Theory of planned behavior (TPB) as the theories on which this study is based. The empirical review of the literature explored the key studies that have been done by different scholars on the influence and effectiveness of electronic media on healthcare service utilization and health promotion.

In the study of behavior change, there are four theories mainly considered by scholars, that is; The theory of planned behavior (TPB), the AIDS Risk reduction model (ARRM), the Health Brief Model (HBM) and Stage of Change Model. The HBM and TPB were specifically chosen before they have been studied in varied contexts and a variety of health behavior change studies.

2.1.**Theoretical foundation**.

The study considered the Health Belief Model (HBM) and Theory of Planned Behavior (TPB) as the theoretical basis of its design. “The health belief model” (HBM) and Theory of Planned Behavior (TPB) are the widely used theoretical frameworks used in the study of health behavior by a number of social scientists.

2.1.1. The health belief Model

The HBM is a behaviour change model that is applied by researchers to explain health related behaviour, including predicting the uptake of health services. Developed in the 1950’s by the social psychologists at the U.S public health services, the model is widely used in health behaviour research. To illustrate people’s health precautionary measures, researchers usually base their frameworks on health belief theory (Yuen, Chua, & Wang, 2023). “HBM, with its six determinants consisting of; perceived threat, cues to action, self-efficacy, perceived benefits, and perceived barriers, provides a comprehensive framework to clearly show the

factors that influence perceived value and thereby impacting users' health behavior" (Champion, Skinner, glanz, Rimer, & Viswanath, 2008).

The theory postulates that behaviour is determined by the importance the individual attaches to specific goals and how he or she perceives his likelihood of attaining that goal. If the intention is to avoid a health problem, the individual must first feel that he is vulnerable to the health problem with potential harm to his or her health. In addition, the individual must expect to benefit from reducing the vulnerability and that he or she must have no barriers to overcoming the problem (Rosenstock, Strecher, & Becker, 1988).

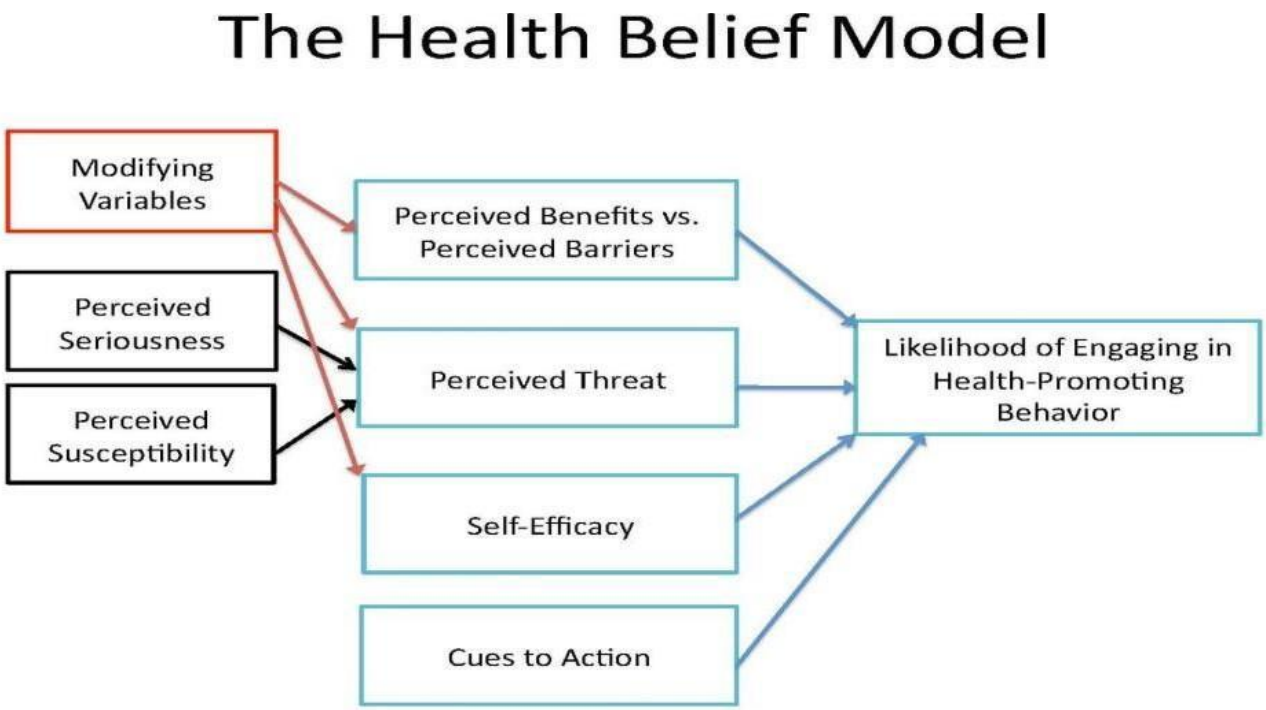
Perceived value to an action refers to the perceived satisfaction and it is obtained by comparing the cost (i.e., perceived barriers) and benefits (i.e., perceived benefits) of taking action to use a service (Lu, Yan, & Chen, 2022). In this study, health information messages that lean on emphasizing benefits of health living can lead to high utilization of facility-based services by reducing the perceived barriers to seeking

Perceived threat is the comparison of the impact and the effects of living with a disease of a health challenge (Hsieh & Tsai, 2013), an example would be the fear of developing advanced cancer if screening efforts are not taken. Through health education messages, electronic mass media may clarify the potential complications that may result from living with an illness and hence impacting the individual's utilization.

This study defines the cues as the actions that trigger behavior related to health seeking which in most cases is related to the extent the individuals' influencers (e.g., family, relative and friends) believe in health seeking behavior. This is based on the social psychology paradigm that postulates that the individuals' social decisions are partly shaped by the social circle's presence around him or her (Fiske, 2018)

Self-efficacy refers to the person's ability to defeat barriers and to perform the action, in this case. utilizing a healthcare service. "self-efficacy also implies an individual's desire to be competent so as to achieve success in a given environment" (Ryan & Deci, 2017). Regarding health service utilization, electronic media can establish conditions that encourage autonomy and enable them to visit facilities where services are offered.

Figure 2.1: The health Brief Model



"The health belief" framework

People's engagement (or lack of it) in health enhancing behaviors, as suggested by the health brief theory, is determined by their perceived utility of the action, their ability to defeat the available barriers and the available cues to trigger action towards a health promoting behavior. Therefore, the HBM model has the capacity to theorize the factors that facilitate utilization of Facility-based services as a health promotion behavior aimed at restoring illness or preventing some diseases. Electronic media through availing health information can emphasize the benefits, reduce barriers, increase susceptibility awareness and clarify on the implications of inaction and hence promote utilization of facility-based services.

2.1.2. Planned Behavior Theory

Azjen (1985) theorized this concept in the 80's. As an expansion "of the Theory of Reasoned Action" its goal is to model and understand the typical way humans' stage and process information to act (Hill, Fishbein & Ajzen, 1977). This theory assumes that the individual will make decisions rationally based on the information at hand. Ajzen (2020) still postulated that, an individual's behavior depends on the intention to perform the behavior and in the end, the intention is based on attitude, subjective norm, and perceived behavioral control concerning the behavior. This theory is now widely applied in healthcare to establish the patient's intention to seek help especially during the COVID-19 pandemic (Aldalaykeh, Mohamed, & Jehad, 2021).

The TPB postulates that "attitude, subjective norms, and perceived behavioral control predict intention, and intention along with perceived behavioral control predicts actual behavior" (Peters & Templin, 2010). "Attitude is conceptualized as a multidimensional construct consisting of cognition, affect, and conation" (Ajzen, 1988). The cognitive competence leverages on a person's knowledge about the point of view on a specific attitude object (healthcare utilization). Subjective norm is the individual's view on his or her ideal behavior to adopt a particular action. Normally the Subjective norm is shaped by the individual's cultural beliefs and largely determined by his or her motivation to comply. How normative the beliefs are determines the likelihood to approve or disapprove of a behavior by important others, and individuals motivation to comply is the perceived importance of having approval from important others. Therefore, overcoming the socially held barriers is crucial in enhancing uptake of desirable health care services (Tusubira, et al., 2021).

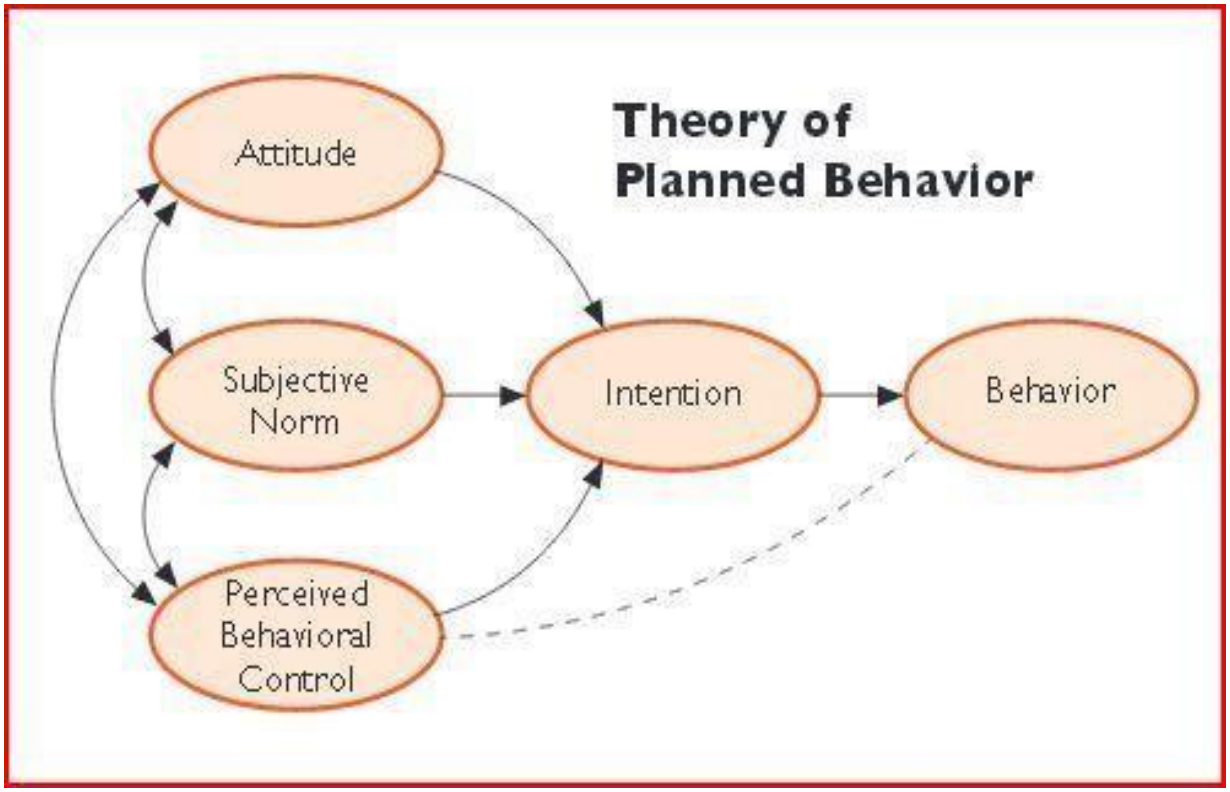
This study considers electronic media communication to have potential to influence the knowledge of an individual and thus improve on the awareness of his or her expected behavior (healthcare seeking) from important others. Perceived behavior control is about the individual's perceived easiness or difficulty engaging in a specific behavior.

By empowering the individual with knowledge of an available service, electronic mass media breaks barriers by promoting belief in self capacity to access these services and living health. Information aimed at empowering the patients who have "poor control over their self-care

behaviours" can improve behaviours of these patients. (Pourmand, et al., 2020) The behaviour in this study is the utilization of facility-based services.

Therefore, communication variables such as information clarity, channel accessibility and language are theoretically positively related planned behavior variables of attitude, social norm and perceived behavioral control (Snehasish & Shirley S.)

Figure 2.2: Theory of planned Behaviour



Assumptions and limitations of TPB model

The theory assumes that individuals act rationally, in line with the model's three core elements of attitudes, behaviour control and the subjective norms. These factors are not explicitly considered during decision-making, but may form the background for the decision-making process. Therefore, based on this assumption, hospital-based health care service utilization may have other influences beyond the effectiveness of electronic mass media the individual is exposed to.

Table 2.1 The health brief Model application

Concept	Definition	Application
Perceived susceptibility	The individual understanding of getting the disease	The electronic health information from electronic media defines who is susceptible by highlighting risk, and heighten perceived susceptibility.
Perceived severity	The understanding of the extent of seriousness and potential complications from an illness	Electronic media messages clarify on the unpleasant outcomes, e.g medical, financial and social consequences
"Perceived benefits"	The confidence in the recommend behaviour to reduced risk of or complications from the condition	Being clear on positive outcomes of the action taken.
Perceived barriers	Perceived material or mental costs of the recommended behavior or action.	Electronic media identifies the barriers, reduces them by clarifying the incentives, support and reassurance especially available free services
Cues of action	The individuals' strategies to be ready.	Electronic Media defines how to act and acts as a constant stimulant to act.
Self-Efficacy	Individual's ability and means to take action	Electronic media provide guidance on how to access services

The theory is based on three key assumptions

a) An individual has to recognize that the unpleasant condition (ill health or risk) is avoidable.
b) He or she expects positive outcome of the recommended action if he or she is to take that action (relief of ill health or risk)
c) The individual has the capacity to take the action (using a facility-based service)

Table 2.2: The Application of TPB

Concept	**Interpretation**	**Application to this study**
Attitude	Behavioural beliefs give a promotive or inhibitive attitude towards a behaviour and guide positive or negative action.	Electronic health information that addresses unfavourable beliefs, create a positive attitude of living healthy and hence utilization of facility-based health services in specific groups.
Subjective Norm	Beliefs result in perceived social (or peer) pressure or subjective norm	By providing information, electronic media breaks group specific barriers to self-care and healthcare utilization.
Perceived behavioural control	A person's responsibility and limitations to take on a behaviour. The interactions between perceived barriers and benefits.	Effective health information reduces barriers and emphasizes benefits.
Intentions	The interaction between the three core elements above shapes the individual's intentions to action.	Electronic media modifies the power of the interacting factors to shape intentions.

2.2. Empirical review

This section highlighted the results from literature that is related to the objectives of this study. The section systematically reviews the studies that have been done by other scholars on the role of media in healthcare, the established electronic medial channels in health care communication, and studies on the relationship between media usage and health service utilization. The section ends by giving a summary of the studies reviewed and the existing gaps identified.

2.2.1. The use of media in healthcare.

Different studies have been done on the role of electronic media in influencing the utilization of different healthcare care services among different social groups both in community and Hospital settings. These studies have identified factors such as education level, socio-economic status, access to mass media campaigns, health insurance coverage, availability of the services and information about the services as the main determinants of how media becomes effective.

Empirical evidence has already shown that mass media can be used to promote positive changes in health behavior across a large population (Malanie, Loken, & Hornik RC, 2014). Where as (Malanie, Loken, & Hornik RC, 2014) came to this conclusion the emergency of electronic media channels continues to attract attention of scholars on its involvement in health care because the efficacy of the new electronic media channels mostly in their effects on health and safety behaviors remain not well studied (Hieftje, Edelman, & Camenga, 2013)

The emerging trends in communication technology have attracted a global attention and recognition of potential electronic media has in transforming different fabrics of society including public health delivery. For example, (Adebayo, 2016), in his study to establish the role of social media in communication in Africa, concluded that the current improvement in digital technology has enabled the use of media to solve complex health problems. He further recommends that application of “theory of change model, creative integration of multimedia platforms and meaningful participation of all actors” to generate a new development narrative, are some of the needed strategies to harness the new technology capabilities.

Media has also been used in health emergency situations to disseminate reliable information to the general population and to healthcare workers. For example, a study of various published

articles on health communication used during the COVID 19 pandemic, concluded that electronic media and media generally, played a vital role "in raising social awareness, increasing exposure to truthful information, promoting healthy habits, and improving psychological well-being" (Mheidly & Fares, 2020). The study also concluded that reliable information was important in coordinating the design and coordination of health information during COVID-19 emergency response. Hence Media is a necessary and powerful tool in sharing wellness education and usually plays a fundamental role in emergency response to various disease outbreaks including pandemics by serving as a channel of communication between different players like governments, health care institutions and the general public (Peterson M, et al., 2018). Peterson and colleagues also argue that "media channels become windows through which the public looks for accurate information, scientific sound facts, government decisions, and reactions of the general public". This adds on the importance of the media on guiding public opinions and decision making on health care.

2.2.2. Electronic media channels in healthcare communication

In 2016, (JAYA, et al., 2021) performed a cross sectional study in Odisha, a state in eastern India to establish access to media. In this mixed method study, they found that the main channels used were television (TV), radio and newspaper and that numerous health care programs are broadcasted on regional TV channels, but the leading radio channels broadcasted most of health information and programs daily. Television was the leading media channel to provide knowledge about illness, its symptomatology and prevention at (63.6%), and radio at (36.6%), newspapers provided about 21.6% , while health service providers (17.7%). But other media channels such as printed posters, pamphlets or even folk dance provided about 5.5%.
The same study found that still information on disease management was provided by TV at 61.2%, printed poster/leaflets at 39.2%, and newspaper at 19.7%. The other important finding was that only 8% of the study population had received a health- related message through a mobile phone during a period of one year. Nearly 36% respondents in the study got information from paintings on the walls, also called "health-wall, which are used to promote health awareness through wall paintings". On the utilization of electronic channels, 11% of the study population was accessing the internet for health information. Part of the study conclusion was that only 8% of the study population has received a health-related SMS making health information delivery through phone SMS not an active model.

In Kenya, a study of channels used to communicate hypertension related illness in low resource settings were studied in Nairobi County. In the study, a new dimension of interpersonal communication was established. The study further found that the use of media campaigns with "community based supportive activities" were effective interventions. In trying to differentiate the influence of specific media channels, the author found that no study respondent went for hypertension check-up through mobilization efforts through traditional channels such as Television, radio, Newspapers, SMS, Road shows, Billboards, Posters and Banners. However, the internet had a 2%-point influence on the utilization of hypertension services. While the paper focuses on hypertension screening and treatment services, it also recommended more studies to establish the effectiveness of media campaigns on screening for NCDs screening (kitulu, 2016). In the same context "Accessibility and utilization of health information in Vihiga" county in Kenya was studied (Odini, 2013). Contradicting results to the other studies that show progress in the growth of electronic media were obtained and her findings were that rural women did not use ICTs in accessing health information because there is need to improve ICT infrastructure and empower women to benefit from the new ICT in order to enable in making proper decision on their health.

2.2.3. Determinants of health service utilization

In a rural context, health service utilization is complex and is affected by several factors beyond information. But availability of health information plays a crucial role in utilization of health services. For example, in 2013, a qualitative study done in Australia established the ecological factors that influence health care utilization among cardiac patients from event to about 12 months after the attack. Several barriers to utilization were found at primary level care and "hospital systems level". Some barriers identified were inadequate communication, organizational barriers and racial issues. At personal levels, the factors included language, awareness of the illness and past experiences (Artuso, Cargo, Alex, & Mark, 2013)The study concluded that, improving healthcare utilization requires strategies that are designed with the aim at improving multi-level communication and a way to weaken the systemic barriers that affect the health system. Prior to this study, Monic Lawrence and colleagues, had studied efforts to achieve positive outcomes for remote aboriginal cardiac patients and found that cognitive control, financial barriers, communication and educational barriers affected the utilization of services at hospitals by remote patients (Lawrance, Dodd, Mohor, Dunn, &

Crespigny, 2009). In both studies, the scholars highlighted the role of communication in the utilization of health services

The study of 2014-2017 demographic and health data in four Asian countries of Pakistan, India, Bangladesh, and Nepal, established that maternal healthcare utilization was significantly associated with exposure to media after sociodemographic factors are controlled for husband, mother and household (K & J, 2020) . The same study concluded that exposure to mass media was directly associated with utilization of facility based antenatal, delivery, and postpartum services, and that through mass media, there was an opportunity to engage mothers in rural areas and drive the utilization of modern maternal. Related to this study, Rutuja Saraf and colleagues studied the "role of mass media in health development in a systematic review". They concluded that media communications on health care were a feasible and beneficial approach. The study also concluded that awareness and knowledge about common diseases such as HIV, cardiovascular disease can be cultivated through employment of media channels including the modern networks (Rutuja & Balamurugan, 2018). Although the scholars pointed out the need to study the role of modern networks, this review did not clearly demonstrate the effectiveness of mass media on the rural population especially, electronic media.

A study that reviewed data from demographic and health survey (DHS) of 28 sub– Saharan African between 2010 and 2020, using data from 199,146 women who had ever had a pregnancy, maternal health service utilization was strongly related to mass media exposure, and that radio and television utilization was strongly related to ANC visitations. Furthermore, the mother's access to media led to facility-based birth attendance and post-natal Care utilization (Gyan, et al., 2022). Through quantitative analysis, the study also established that various factors such as mothers age at pregnancy, level of education, partner presence, religious affiliations and employment status among others were significant determinants of hospital based postnatal services.

Similarly, Dilaram & Vshnu, in their study on 205 maternal parents to infants uber one year, found that most mothers had access to health information from electronic media, with radio pointed out in 60% of the mothers, and TV being used by 443.41%. The access and exposure to media was associated with increased ANC attendance. (Acharya, Vishnu, Mandira, & Stella, 2015). This same study also found that media was very impactful on utilization of various Antenatal care parameters like frequency of antenatal visits, adherence to nutritional

supplementation, physical exercises, Tetanus Toxin immunization, rest and sleep. "Determinants of health seeking behavior in a Nairobi slum" were studied in 2013. It was established that in addition to patient's age, user fees, distance from home to facility, education status and size of the household, the information about health services available about the facility and the service it officers were related with increased service utilization (Muriithi, 2013)

A qualitative study done between 2007 and 2008 in three villages in easter Uganda found that barrier to healthcare utilization was dominated by health literacy among other factors like the health seeking process, health services delivery; and the ownership of livelihood assets, income source and transport ownership (Wamala, Sandra, & Andrew, 2009).

Factors "associated with utilization of health facilities for child birth among 15 to 49- year-old women in Uganda" were studied using data in the UHDS of 2016. The study analyzed this secondary data to concluded that access to mass media was a major factor that promoted health facility utilization, with other promoting factors such as low age, higher education quantiles, resource availability and residence in urban or semi-urban, being a resident of Northern Uganda, having ANC attendance, religion and distance to the nearby health facility (Sserwanja & Mukunya, 2021). The study findings agreed with (Bbaale et al, 2011) who also found exposure to mass media as a factor that influences utilization of facility health services.

2.2.4. Effectiveness of mass media in healthcare utilization

Literature is beginning to amass evidence that targeted, "well-executed health mass media campaigns can have small-to-moderate effects not only on health knowledge, beliefs, and attitudes, but on behaviors as well, which can translate into major public health impact given the wide reach of mass media. Such impact can only be achieved, however, if principles of effective campaign design are carefully followed" (Noar, 2007)

In order to be effective, media communications must be carefully designed and executed. In the U. S, eight studies systematically reviewed on the effectiveness of media communications to reduce "alcohol-impaired driving (AID)" and related crushes purposely done to "Guide to Community Preventive Services *(*Community Guide)". This study concluded that the reduction in alcohol-related crashes enabled by media communication campaigns was thirteen percent.

The study also noted that, “the mass media campaigns reviewed were generally carefully planned, well executed, attained adequate audience exposure, and were implemented in conjunction with other ongoing prevention activities, such as high visibility enforcement” (Elder, et al., 2004). This quantitative study did not establish the role of electronic media campaigns as part of mass media.

In Kenya, a study to establish the effectiveness of media on utilization of cervical cancer screening services, it was found that, 62.6% of the reported that the messages received were not clear 51.3% said the messages were not relevant (Nyambane, 2014)In the same study, 62.5% respondents found that the messages received caused fear. Notwithstanding, the study also found that 70.4% of the participants found media messages educational, but with no corresponding action to utilize the screening services at health facilities. Radio messages and TV broadcasts did not play a key role in creating demand for screening services since only 20% of respondents received information from these two legacy electronic media channels. To shed more light, nearly 74% of the respondents received health information from channels outside radio and TV. The other unique conclusion of the study was that “despite the fact that more than 90% of the respondents reported owning a radio and/or a television”, there was no relationship between utilization of screening services and access to these channels.

In Uganda 450 males boarded onto the FP mobile messages program, 426 (95%) successfully received the messages as mobile health content (M-TIP). The message was intended to modify behavior and hence utilization rate of family planning. This study noted that there was 18.1% improvement in communication among couples and that the married engaged in conversations more about family planning (Kamulegeya, et al., 2021). Thus, even though the study did not classify the participant by socio-demographic characteristics, it demonstrated the effectiveness of an electronic media message on addressing the demand side of hospital-based services.
Studying the factors for effective health services utilization in rural Uganda, (Musoki, 2010), found that utilization of health services at private providers was 30.5% determined by access to information. Though this systematic review study did not specify the sources of the information utilized by the rural population.

2.2.5. The research gap from literature.

From literature review, there were obvious research gaps noted. Many scholars have researched and written on media and healthcare service uptake and behaviour change. Also, a key observation is a number of studies that have not considered the rural context where other social determinants of health play a role in shaping the overall population health. For example, Artuso et al, studying the determinants of utilization of health care services among Aboriginal rural patients in Australia, concluded that communication barrier was a key determinant of the utilization of cardiac services. The study did not only fail to specify the effective channels used by participants to receive health information but also did not explain the reasons for the barrier in communication. In 2018, Rutuja saraf and colleagues conducted a study to establish how media influenced the uptake of health service, and found that knowledge and awareness can be enhanced by communicating through media. They emphasized that promotion of good health and patient empowerment in patients with chronic and non-Chronic illness could be done through media communications. Study did not establish whether its finding was consistent even in the rural setting and whether the awareness about the health problems resulted in healthcare utilization of facility-based services. The study further did not establish the specific media channels studied, especially the role of the emerging electronic media.

While studying the utilization of facility-based childbirth services in Uganda, Bbaale and colleagues found that access and exposure to media lead to increased facility-based deliveries. Their findings were consistent with Sserwanja et al, who used secondary data in UHDS 2016, to study middle aged women (15 to 49 years) and establish factors that determined utilization of child and maternal healthcare services based at the facilities. These studies did not establish the effectiveness of the broader yet new electronic media health communication, especially the emerging power of social media and mobile-based media on this outcome.

While (Musoki, 2010) studied the factors that determined the uptake of health facility services in rural Uganda and found that 30.5% of the health services utilization at private hospitals was determined by access to health information, he did not establish how the study participants received the health information.

Table 2.3: Gaps in empirical review

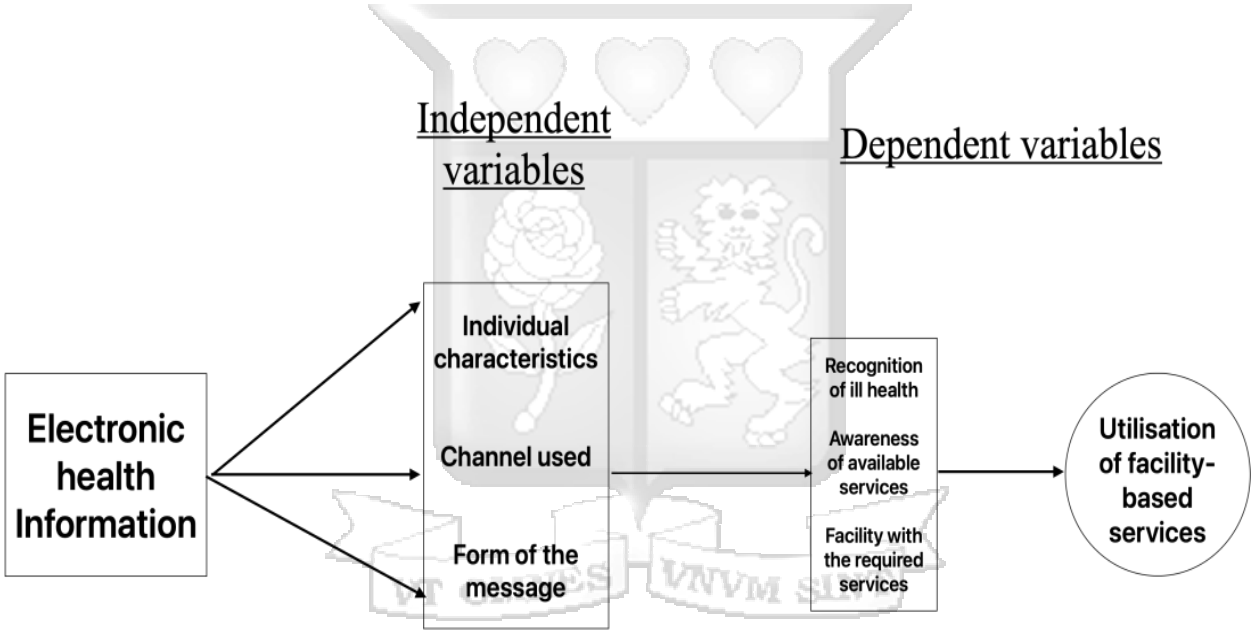
Author	Title	Findings	Gaps
Wakefield, P. M., Prof. Barbara, L., & prof. Robert C,	Using Mass media to change health behaviour	Concluded media campaigns have the ability to enhance positive changes or prevent undesirable health behaviours in a bigger population.	The role of electronic mass media was not established. The study also concentrated on behaviour change rather than utilization health services
Gyan R, Abdul-Aziz Seidu, Opuku B, Abdul Cadri, Boadu J, Elvis J, Assefa N, Yaya F	"Frequency of mass media exposure and maternal healthcare service utilization in sub-Saharan Africa":	Media access and utilization had a strong positive predictive relationship.	Did not explicitly demonstrate the impact on the rural population. The study also concentrated on maternal healthcare services rather than general health services at the facility
Rhoydah Nyambane	"Effect of Electronic Media Sources on Cervical Cancer Awareness Among Women in Kenya: Case Study of Reproductive Health Clinics at the Kenyatta National Hospital, Nairobi County, Kenya"	Some messages received were not clear not relevant and caused fear	The study exclusively focused on cervical cancer screening messages and did not consider the rural context. There was also generalisation of the media channel and did not study the electronic media

Rutuja Saraf and J Bamutungan	The role of mass media on healthcare development: A review article	The study concluded that knowledge and awareness about various health problem like HIV, TB, Cancer and others can be enhanced through use of media communication campaigns.	Did not establish the effectiveness of the media on utilization. Did not also specify the media channels effective at enhancing the knowledge. It did not also establish the establish if the enhancement was different among demographic categories
Quraish, Sserwanja, David Mukunya, Milton w. Musaba, Joseph Kawuki and Freddy Eric Kitutu	"Factors associated with health facility utilization during childbirth among 15 to 49-year-old women in Uganda: evidence From the Uganda demographic health survey 2016"	Strong association between health facility utilization multiple factors such as low maternal age, education levels, income statusy (wealth index), current urban residence, and living in Northern Uganda	The study cited mass media as one of the actors that influenced utilization of hospital-based childbirth. The scholars did not determine the extent to which mass media can influence the utilization.
Stella Artuso, Margaret cargo, Alex Brown and Mark Daniel	"Factors influencing health care utilization among aboriginal cardiac patients in central Australia: a qualitative study"	The study found that cognitive control, financial barriers, communication and educational barriers affected the utilization of services at hospitals by remote patients.	Whereas the Study found that communication was key, it did not specify how the participants received the health information. And where information influenced utilization at the same level among demographics categories

Mosoki James	"Factors that determine the effective utilization of health services in Uganda".	The study found that 30.5% of health service utilization at private providers was determined by access to health information	Did not establish the channels that the participants used to access health information.

2.3.The Conceptual framework

Figure 2.3: Conceptual framework: Influence of electronic media on utilization of health services



2.3.1. Variable definition

The outcome of the framework is the utilization of health services which is the dependent variable. Empirical evidence has shown that, utilization of health services is related with the person's ability to recognize ill-health or being aware that a health service he or she needs or can benefit from is available and found at a specific facility. This awareness is influenced by the type of health information received, the individual characters like age, gender or education levels and how accessible the information is to the patient or the caretaker.

a) Individual characteristics

A participant's social class, education status, literacy levels, age and gender may determine how the electronic health information is received and interpreted, and hence the influence the information will have on their willingness to take action.

b) Media channel

This is defined as any of the electronic media channels used to access health information. These include; Radio, Television, social media, other internet sites and Mobile phone SMS and calls. The information received from a specific electronic channel will contribute to how effective the health information becomes on influencing the participant's action.

c) The message received

The form of message that the participant received may include, text, video, audio message or static pictures. The type of message may be an education program, service promotion, government campaigns. These are passed through any of the electronic media channels. This may influence the effectiveness of the information and determine the utilization of hospital-based services.

d) Recognition of ill health

An individual being able to recognize that the dependent's, or his/her health status is not in a normal state as a result of health information accessed through electronic media.

d) Awareness of available health service

An individual or a caregiver becoming aware that a certain healthcare service of potential benefit is available at the hospital.

e) Utilization of health service

An individual or a caretaker visiting a health facility to receive care as a result of being aware of an illness and its perceived risk, and being aware of the service he or she needs and its location.

Table 2.4: Operationalisation of variables

Variable name	**Variable type**	**Measure**	**analysis**
Individual demographics	Independent variable	Nominal	Descriptive analysis
Electronic media channel used by different demographic segments	Independent variable	Nominal	Description analysis
The form and type of the message received	Independent variable	Nominal	Descriptive analysis

Recognition of ill health or risk individual risk of disease	dependent variable	Ordinal	Ordinal logistic regression
Awareness of available services	dependent variable	Ordinal	Ordinal regression
Utilization of health services	Independent variable	Ordinal	Ordinal Logistic regression

2.4.Chapter summary

The chapter explored the theoretical basis of the study, evaluated the empirical work done by various scholars and conceptualized the interactions of the study variable. The chapter also summarized available research gaps identified in the empirical review.

The next chapter focused on the study design, the methodology that was applied in collection, analysis and interpretation of the data leading to the achievement of the objectives.

3. CHAPTER THREE: METHODOLOGY

3.0. Chapter introduction:

This chapter describes the methods that were used in the collection, analysis and interpretation of data pertinent to answering the study objectives. It is divided into research design, population and sampling design, data collection method and data analysis.

3.1. Research design

Research design refers to the overall structure or plan of the research This study was designed as a cross sectional descriptive study. Descriptive surveys are carried out in order to describe populations, to study associations between variables and establish trends. The information is collected from a sample of the population of interest and descriptive measures are calculated. The unit of analysis is usually the individual but it can be an organization if organizations were sample units in multi-level studies. Since descriptive studies occur in their natural settings, random sampling is easier to carry out and allows statistical inferences to be made in relation to the broader population and so increasing the external validity of the study. Hence in this study a descriptive research design was adopted.

3.2. Population and sampling design

The population in this study consisted of patients visiting two private medical centers in southwestern Uganda's subregions of Ankole and Kigezi, all considered to be predominantly rural settings. The facilities selected are located in a low-income rural area serving the populations with diverse social demographic characteristics. The respondents of the study were adult patients and caretakers aged between 18 years to 69 years seeking health services at the facilities. This is because decision making among children and adults more than 69 years old is believed to be influenced by the third party.

3.2.1. Sampling technique

Sampling is a process used in statistical analysis in which a predetermined number of observations will be taken from a larger population (Neetij & Bikash , 2015). In this study, purposive sample was applied to choose the two facilities under this study. Although none

probabilistic technique, purposive sampling is useful especially when randomization is impossible like when the population is very large. t can be useful when the researcher has limited resources, time and workforce (Ilker, Sulaiman, & Rukayya , 2015). In this study, southwestern Uganda has many private medical facilities and all engaged in health promotion. A representative sample would be very large and become difficult to study due to limitation of material and time resources. Hence sample of two health facilities were obtained, one in Ankole subregion and another in Kigezi sub region. Doctors case medicals Rukungiri was chosen to represent Kigezi subregion and Doctors case medicals Ishaka was chosen to represent Ankole subregion. Despite the subregions dominated by rural, they have socially and culturally distinctive populations (LLOYD, 1961), with the Ankole subregion dominated by cattle keepers and kigezi dominated by crop farmers (UNBS, 2024). The social norms of the population in the two subregions differed given their historical routes and economic activities of the societies (Edel, 2018)

Table 3.1: The comparison between the study centres

COMPARATIVE PARAMETER	**DOCTORS CASE MEDICALS RUKUNGIRI**	**DOCTORS CASE MEDICALS ISHAKA**
Subregion	Kigezi	Ankole
Population	Chiga	Banyankole
Main economic activity	Crop farming	Animal farming
Volume	High volume private center	Low volume private center
Electronic media communication	TV, radio, social media and phone SMS	TV, radio, social media and phone SMS
Main Area of specialization	General medicine and maternity	Surgery, radiology and laboratory diagnostics.

Simple random sampling was then carried out among participants attending outpatient and inpatient services. Random sampling Simple random sampling is a widely utilized sampling method in quantitative studies with survey instruments. It ensures unbiased, representative, and equal probability of the population (Shagofah, Omid, & Jawad , 2022). While sampling, incidentally none of the 331 participants picked declined to participate in the study, but only 304 were able to complete the questionnaire to the end. This was due to the fact that the research

attendants were well trained on how to seek consent, simplicity of the tools and the fact that participants were selected at the most convenient time (exit time for OPs and ward for Ips). Those that did not complete the questionnaire were participants who were picked from the OPs, and had reasons for rushing home after the service.

3.2.2. Sample size for quantitative data

With a population of 2,400 that seek health services from the two facilities, assuming a 95 degree of confidence, a margin of error of 8% and minimum of 50% response rate, a sample size of 331 respondents from the two facilities were interviewed for quantitative data. The sample size was proportionately divided amongst the two subpopulations of Inpatient and Outpatients' strata.

Proportionate sampling formula was used; nh = (Nh/N) *n nh = Sample size from a stratum **Nh**= Population of the stratum, **N** = Size of the entire population under study, **n** = Required size of the entire sample.

Sample size calculation

Fischer's formula was used to obtain the study sample size. This formula is given as follows:

$N = [Z^2 P (1-P)^2]_d 2$

Sample size = [1.96^2x0.5 x (1-0.05) ^2]/[(0.05)^2]

Sample size = 384

However, since the population is less than 10,000, the study adopted the following formula

$$nf = \frac{n}{1+(n/N)}$$

Where; **nf** is the desired sample size when the population is less than 10,000 **n** is the desired sample size when the population is more than 10,000 N is the estimate of the population size. The estimated total number of outpatient and In-patients at the facility in one month is 2,400. Hence the value on N is 2,400

N.f = 384/(1+384/2400)

N.f = 331 participants

Table 3.2: Sample size calculation

Stratum	In-Patient	Out-Patient
Population size	115	2,285
Composition	5%	95%
Proportionate sample of 331	16	315

3.2.3. Sample size for qualitative data

Qualitative data was collected through four focused group discussions with each having eight participants selected randomly in-patient and outpatient departments The total of 32 participants were interviewed during the four focused group discussions.

3.3. Data collection methods for quantitative data

Primary data was obtained from adult patients or their adult caregivers attending the selected facilities using a survey method. The quantitative data collection instrument was a questionnaire (appendix 3) containing only closed ended questions, administered through a face-to-face interview by a trained research assistant. The outpatient participants were selected and interviewed as they exited the facility after the service

3.3.1. Data collection methods for qualitative data

Qualitative data was collected through focused group discussion with selected participants from in-patient and outpatient departments using guiding open-ended questions focused on the three themes originating from the preliminary quantitative data analysis (appendix4). Focused group discussion were conducted by two trained research assistants in a private selected place one research assistant acted as a repertoire recording responses from participants in verbatim and at the same time using a mobile voice recorder to capture the conversation

3.4. Research procedure

The questionnaire was pilot tested by administering it to a limited number of 10 respondents and the necessary revisions made. Purposive sampling of the health facilities was done to

include one in kigezi subregion and Ankole subregion that provide facility-based in-patient and outpatient services and have been involved in consistent health education programs. The study also ensured these facilities are part of the formal regulated private health system. Data collection started with collection of quantitative data at both facilities. Preliminary analysis of the quantitative data identified themes and questions to guide the focus group discussions. In both approaches, informed consent for (ICF) as administered and consent obtained from all sampled respondents, sample in of ICF in (appendix 2 and 2.1). Once interviews start, the assistants ensure 100% completion rates. The principal investigator directly supervised research assistants and their collected data at the respective facilities where they are both residents. For the quantitative data, this study achieved 91.8% (304) response rate of the 331 participants sampled. These (304) participants completed the questionnaire to the end. For the qualitative data collection, 100% (32) of the selected participants compeleted the interview to the end. According to Mugenda and Mugenda (2003), 50% response rate is adequate, 60% good, while 70% and above is rated very good. Hence the study has a very good response rate for both quantitative and qualitative data.

3.5. Data analysis

Data was collected, entered, cleaned, organised and then analysed using Statistical Package for Social Scientist (SPSS V.26). Descriptive statistics were obtained through processing data into percentages, tables and charts. The choices of electronic media channels among different demographic categories were obtained through cross tabulations and presented as a percentage within that demographic characteristic.

Since the independent variables were categorical and the dependent variables had ordinal measures, Ordinal logistic regression was applied to measure the nature and strength of the relationship between independent and dependent variables.

The regression model therefore was constructed as below

$$y = \alpha + \beta 1X1 + \mathcal{E}$$

where y is the dependent variable, α is the constant (Y intercept), β is the coefficient of the variable $X1$ and then $\mathcal{E}$ is the error term.

The regression coefficients were used to measure the actual effects of specific independent variables on dependent variables. T-statistics were used in determining the significance of in dependent variables in influencing dependent variables.

Qualitative data was analyzed using a thematic approach. After data collected from FGDs, respondents were coded from "R1" to "R32" audio records were transcribed into text. Multiple excerpts were coded to represent the themes obtained from the quantitative analysis

3.6. Research quality assurance

Systematic transcription and analysis of the questionnaire was done to ensure validity and reliability of the data collected. As the questionnaires were returned to the office, routine checks were done to ensure missing data and errors were corrected timely. Each questionnaire was coded to ensure it can be traced during the whole process of data analysis Coding and data entry were done by a different research assistant.

3.7. Ethical issues in research

Since the study was leading to award of a master's degree of Strathmore university, and involved human subjects, the study sought approval of Strathmore University Ethics Review Committee to ensure that all ethical considerations had been met. The approval from SUIRB is attached (appendix 5). Since the study participants were Ugandans, and upon advice from Uganda National Council of Science and Technology (UNCST), ethical approval was also sought from a Ugandan based REC at Uganda Virus Research Institute (UVRI), The approval of Uganda Virus Research institute Institutional Review Board (UVRI-IRB) is attached (appendix 6) The research license was later issued by the UNCST upon satisfaction the requirement of UVRI-IRB (appendix 7)

3.8. Chapter summary

Chapter three has explored the study design, research philosophy, study scope, sampling technique and sample size, research procedure, methodology, data processing and analysis, research ethics procedure that were used in this study. The chapter has also outlined a validity and research quality assurance approach that were adopted.

The next chapter explored the findings obtained from the analysis of the data that was collected, and presents these findings in the chronological order to answer the research questions stated in chapter one.

4. CHAPTER FOUR: ANALYSIS AND FINDINGS

4.0. Chapter introduction

The findings of this research about the effectiveness of electronic media on the utilization of health services in a rural setting are presented in this chapter. Results have been presented and interpreted in order of the three main objectives of the study. The data used to arrive at the findings was gathered from the tools designed in line with the objectives of the study. The analysis of the quantitative data was done using SPSS V26, while qualitative data was analysed using a thematic approach aimed at answering some of the thematic questions that arose from the quantitative data analysis.

This chapter has been organized under five subsections. The first two subsections and aimed at setting the background characteristics of the participants. They present the response rate and the demographic categories of the participants. The last three subsections present the information aimed at answering research questions which were; to determine the different electronic media channels preferred by different socio- demographic segments to access health information in rural a setting; determine the overall effectiveness of different electronic media channels on utilization of health services in a rural setting and; to determine the overall influence of electronic media on different demographic segment in as far as driving the utilization of health services is concerned.

4.1. Response rate

The response rate is the number of respondents who completed the interview process divided by the number of the people who make up the sample group. The research study targeted adult patients and their caretakers seeking health care services at the two private medical centers in southwestern Uganda. From this population, a sample of 331 were randomly sampled to provide quantitative data regarding the use of electronic media channels and the influence of the received information on utilization of health services. Four focused group discussions were later conducted with each consisting of eight randomly selected participants. For each facility two focused group discussions were conducted, one with participants from Inpatient and other from outpatients The questionnaire return rates and FGD participation are indicated in table 4.1 below.

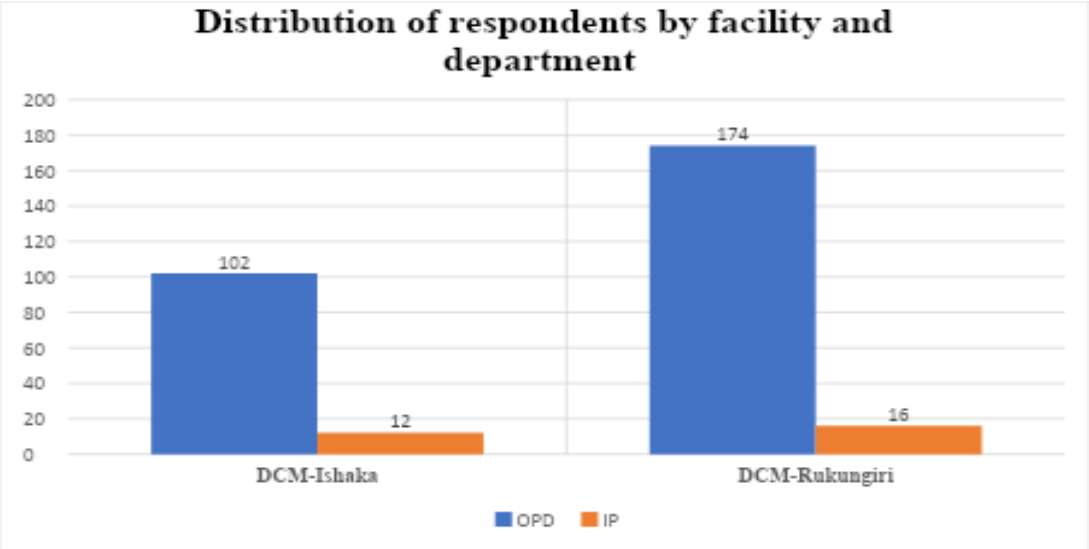
Table 4.1: Response rate among IP and OP respondents

Category	Frequency	Target	Percentage
OP respondents	276	315	87.6%
IP respondents	28	16	175%
Sample size	304	331	91.8%
FGDs	32	32	100%

The results in Table 4.1, show that 304 out of the 331-sampled respondents were able to complete the quantitative questionnaire fully to the end. The overall response rate achieved wass 91.84% Total of 32 participants were sampled to participate in four focused group discussions, and 100% (32) participated in the interview to the end. Overall, the response rate was good because out patient participants were selected at the time when they had already received services, while in patients were found on ward before discharge.

The study was also done at the two selected sites, that is Doctors case medicals Ishaka (DCM-Ishaka) and Doctors case medicals Rukungiri (DCM-Rukungiri), with participants from either Inpatient or Outpatient departments. The distribution of participants per facility and department are presented in figure 4.1.

Figure 4.1: Distribution of respondents by the facility and departments



The research team interviewed a total of 304 respondents, where, 90.8% (276) were patients or attendants seeking outpatient services and 9.2% (28) were receiving facility based In-patient services. This was in line with the proportionate sampling to ensure the participants represented the volume of patients in the two departments. In general, 37.5% (114) respondents were interviewed at Doctors Case Medicals in Ishaka, and 62.5% (190) were interviewed at Doctors Case Medicals in Rukungiri. These findings represent the facility patient traffic during the period of data collection.

4.2. Demographic characteristics of respondents

This section presents the findings obtained from the questionnaire concerning their socio-demographic characteristics. The analysis and subsequently the results relied on the information from the respondents to the best of their knowledge and responses. In this section of the respondent's demographic profile, results are presented in terms of gender, age (years), level of education and occupation.

In terms of gender, the majority of the respondents were females. Table 4.2 show the gender distribution of the respondents

Table 4.2: Gender of respondents

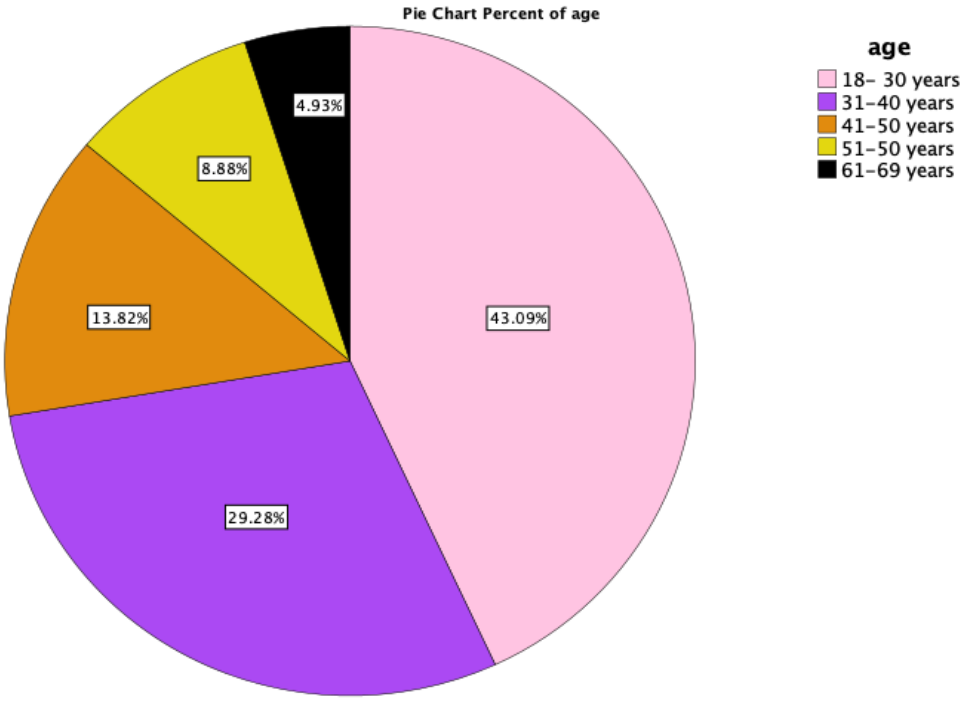
Gender					
		Frequency	**Percent (%)**	**Valid Percent**	**Cumulative Percent**
Valid	Male	104	34.2	34.2	34.2
	Female	200	65.8	65.8	100.0
	Total	**304**	100.0	100.0	

According to the results shown in table 4.2, 65.8% of the respondents were females while 34.2% were male respondents. The findings imply that the views in these findings are the opinion of both genders as far as the effectiveness of electronic media on utilization of health services in rural settings is concerned.

The study also investigated the age of respondents in broader age bands of 18-30 years, 31-40 years, 41-50 years, 51-60 years and 61-69 years.

Figure 4.3 shows the age band distribution of the respondents of this study.

Figure 4.2: Respondents' composition by age.



The aim was to establish the age distributions of the respondents with a hypothesis that subsequently, the age of a person determines the electronic media channel preferred and the influence of the information on healthcare utilization differs by age category of the respondents. Figure 4.3, shows that the majority of the respondents (40%), were aged between 18-30 years, followed by the aged band of 31-40 years at 29.2% of the respondents. 13.82% were aged between 41-50 years, 8.88% were between ages of 51-60 and only 4.92% were aged between 61-69 years. The majority of the participants being aged 40 years and below reflects the age demographic pyramid of Uganda, where more than 70% of the population is less than 35 years

The study also investigated the education level of respondents. The results revealed that the biggest percentage of respondents, 63.8% have secondary school education and less (did not receive tertiary education). This percentage includes the 5.6% who never went to school, 34.2% who only stopped at primary level and 24% who stopped at secondary level. The study found that 24% have attained diploma or certificate while only 12.2% have degree education

Table 4.3 shows the percentage of respondents according to the highest level of education attained

Table 4.3: The highest education level attained by respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	None	17	5.6	5.6	5.6
	Primary	104	34.2	34.2	39.8
	Secondary	73	24.0	24.0	63.8
	certificate or diploma	73	24.0	24.0	87.8
	degree and more	37	12.2	12.2	100.0
	Total	**304**	**100.0**	**100.0**	

These findings represent the level of education in most of the rural communities in Uganda, where the majority of the population does not have tertiary education. Therefore, the opinion concerning the effectiveness of electronic media on utilization of health services truly demonstrates the perspectives of the rural population.

In terms of occupation as a demographic characteristic, the study found that the majority of the respondents were peasant farmers. This was followed by professionals and business.

Table 4.4. shows the percentage distribution of respondents by occupation category

Table 4.4:Respondents' occupation

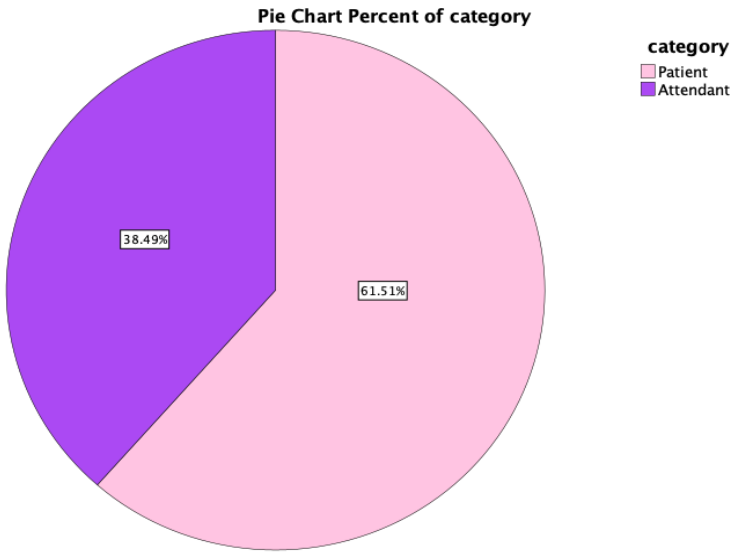
		Frequency	Percent (%)	Valid Percent	Cumulative Percent
Valid	Peasant	127	41.8	41.8	41.8
	commercial Farmer	16	5.3	5.3	47.0
	professional	105	34.5	34.5	81.6
	Business	43	14.1	14.1	95.7
	Student	13	4.3	4.3	100.0
	Total	**304**	**100.0**	**100.0**	

Majority of the respondents were found to be farmers at 46.1% (peasants, 41.8% and commercial, 5.3%) followed by employed professionals at 34.5%. The rest, 14.1% were involved in business activities while 4.3% were students. The results also reveal the occupation

landscape of the rural population where the majority are farmers with small pockets of professionals and business communities.

The participants were either patients or attendants of patients seeking care at the facility. The attendants were interviewed only where the patient was either critically ill or was less than 18 years of age. Figure 4.4 shows the distribution of the two respondents' categories by service point.

Figure 4.3: The Proportion of attendants and patients



The study found that the majority of the participants interviewed were patients contributing 61.51% while the rest, 38.49% were attendants of miners or the critically ill. This finding means that the opinion of patients and attendants on the effectiveness of electronic media on utilization of health service are all represented.

4.3. Electronic media channels used by respondents.

In order to establish access and use of electronic media and subsequently determine the channels that are preferred for health information, the study investigated the available electronic media channels accessible by the respondents. Subsequently the respondents were asked to list the channels they use daily for health information.

First the study sought to establish the electronic media channels that respondents accessed

Table 4.5 shows the percentage of participants who access different electronic media channels in the rural setting.

Table 4.5: The electronic media channels accessed by respondents

		Responses		Percent of Cases
		N	Percent	
Media channel at home	Radio	212	25.3%	70.4%
	TV	153	18.2%	50.8%
	Social Media	152	18.1%	50.5%
	Other Internet site	121	14.4%	40.2%
	Phone SMS and calls	201	24.0%	66.8%
Total		839	100.0%	278.7%
a. Dichotomy group tabulated at value 1.				

The study established that the two leading channels accessed by participants were radio at 70.4% and phone SMS and calls at 66.8%. Television fell in the third position at 50.8%, social media at 50.5% became the fourth most accessible electronic media channel. while the least available was other internet sites at 40.2%. The study also revealed that other than the common electronic media channels stated, other channels were mentioned like interpersonal communication as a media channel that provides information. The findings represent the media landscape in the rural area with slow adoption of mobile phone based digital technologies Through focused group discussions the study also found that there is increased interconnectedness of the electronic media channels and that, TV and radio are increasingly accessed through social media and internet sites. Respondents accessed TV through You Tube and social media sites while others confirmed having to access radio programs through internet websites of different radio stations. The study also found that whereas physical radio and TV devices are still present in homes the TVand radio were now accessible through mobile phones that connect to the internet. This was the preferred access especially among the working class and the young population since it was cheaper and also allowed wider access even when away from home. As one of the participants of the FGD put it;

"I have a radio, and a smartphone, but I also use my phone to watch interesting programs on TV. I don't have a TV because of monthly expenses and power. It will consumer my solar battery for nothing "[R7]

4.3.1. The electronic media channel preferred for health information.

The respondents were interviewed to find out the electronic media channel used and preferred for health information access. From the responses, 42.1% prefer radio while 25.3% prefer TV with social media sites in the third position at 21.1%. 7.6% use other internet sites and 3.9% prefer use of SMS and phone calls. The observations reveal that traditional electronic media channels of TV and Radio still dominate the rural settings as the preferred electronic media channels.

The study results also found that whereas mobile phone calls and SMS are widely accessible at 66.3%, they are the least preferred by the rural population for access to health information. Results from focused group discussions revealed the issues of clarity and trust of the source associated with Phone calls and SMSs. A participant said,

"Messages come to your phone every day, labelled codes like 888, you cannot know who has sent it. At least for TV and internet you can see the person and you measure the truth from his face" [R17].

Table 4.6 Shows the percentage of participants and the electronic media channels preferred to access health information.

Table 4.6: Electronic media channels preferred for health information

		Frequency	Percent	Valid Percent
Valid	Radio	128	**42.1**	42.1
	TV	77	**25.3**	25.3
	Social media	64	**21.1**	21.1
	Other Internet	23	**7.6**	7.6
	Phone calls and SMS	12	**3.9**	3.9
	Total	**304**	**100.0**	**100.0**

4.3.2. Electronic media channels used by different gender categories

The study investigated whether there is gender preference to the specific electronic media channels used for health information. With other demographic factors controlled, radio [36.5% males and 45.5% females], remains the dominant electronic media channel preferred for health information among both males and females. The least preferred was found to be phone calls

and SMS [4.8% male and 3.5% females]. The study also revealed that more males (27.3%) were more likely to use social media than females at 17.5%, while more females, 45%, were more likely to use radio than males at 36.5%. The male gender argued that they were more mobile and preferred channels that can be accessed through mobile phones.

"*For us men we move the whole day, so if I need some information, it's better I use my phone to get news. My phone even has a radio and I can get any information on you tube or even watch news on NTV and TV west*" *[R8].*

This could account for the observed preference of social media among males than females

Table 4.7 show the percentage of males and females who prefer different electronic media channels.

Table 4.7: preferred channel for Health information by gender

			Radio	TV	Social media	Other Internet	Phone calls and SMS
	Male	Count	38	25	29	7	5
		% within Gender	**36.5%**	**24.0%**	**27.9%**	**6.7%**	**4.8%**
		% within channel	29.7%	32.5%	45.3%	30.4%	41.7%
		% of Total	12.5%	8.2%	9.5%	2.3%	1.6%
	Female	Count	90	52	35	16	7
		% within Gender	**45.0%**	**26.0%**	**17.5%**	**8.0%**	**3.5%**
		% within channel	70.3%	67.5%	54.7%	69.6%	58.3%
		% of Total	29.6%	17.1%	11.5%	5.3%	2.3%
Total		Count	128	77	64	23	12
		% within Gender	42.1%	25.3%	21.1%	7.6%	3.9%
		% within channel	100.0%	100.0%	100.0%	100.0%	100.0%

4.3.3. Electronic media channels preferred by each age category.

The study investigated whether there was a preference to a specific electronic media channel among a different category of the age bands as far as health information is concerned. Generally, radio and TV dominate all age groups of the study participants, but the highest usage of radio was observed among the age group of 51-60 years of age at 55.6%. TV was highest

among 41-50 years [38.1%], social media and other internet sites were preferred by respondents aged between 31-40 years [30% social media, 11.2% other internet sites] and mobile phone SMS and calls were more used by respondents aged between 51-60 year at 7.4%.
From the results of the study, it was observed that the older age bands preferred radio and TV rather than social media and internet because the older age bands had low education levels and it was more difficult for them to understand text information than an audio and video message.

"*English is difficult. Radios and TV save you the burden of reading very difficult lengthy information. You sit, listen or watch and that is it.*
"[R16].

Table 4.7 shows the percentage of respondents who chose different electronic media channels according to age bands.

Table 4.8: Channel for health information and age among different age groups

			Radio	TV	Social media	Other Internet	Phone calls and SMS
age	18- 30 years	Count	57	31	28	8	7
		% within age	**43.5%**	**23.7%**	**21.4%**	**6.1%**	**5.3%**
		% within channel	44.5%	40.3%	43.8%	34.8%	58.3%
		% of Total	18.8%	10.2%	9.2%	2.6%	2.3%
	31-40 years	Count	33	18	27	10	1
		% within age	**37.1%**	**20.2%**	**30.3%**	**11.2%**	**1.1%**
		% within channel	25.8%	23.4%	42.2%	43.5%	8.3%
		% of Total	10.9%	5.9%	8.9%	3.3%	0.3%
	41-50 years	Count	16	16	6	3	1
		% within age	**38.1%**	**38.1%**	**14.3%**	**7.1%**	**2.4%**
		% within channel	12.5%	20.8%	9.4%	13.0%	8.3%
		% of Total	5.3%	5.3%	2.0%	1.0%	0.3%
	51-50 years	Count	15	7	2	1	2
		% within age	**55.6%**	**25.9%**	**7.4%**	**3.7%**	**7.4%**
		% within channel	11.7%	9.1%	3.1%	4.3%	16.7%
		% of Total	4.9%	2.3%	0.7%	0.3%	0.7%
	61-69 years	Count	7	5	1	1	1
		% within age	**46.7%**	**33.3%**	**6.7%**	**6.7%**	**6.7%**
		% within channel	5.5%	6.5%	1.6%	4.3%	8.3%
		% of Total	2.3%	1.6%	0.3%	0.3%	0.3%
Total		Count	128	77	64	23	12
		% within age	**42.1%**	**25.3%**	**21.1%**	**7.6%**	**3.9%**
		% within channel	100.0%	100.0%	100.0%	100.0%	100.0%

4.3.4. Electronic media channels used for health information by education level attained.

Considering the education levels, the study investigated the choice of electronic media channel preferred by respondents in different education level classes. The study found that the legacy electronic media channels of radio and television dominated the education levels below tertiary education (secondary and below), while the new mobile or computer-based channels dominated the tertiary level education and above. Respondents within the higher education classes were more likely to choose social media and other internet sites as their preferred channels for health information than radio and TV. From the observations, we can therefore say that increase in education levels reduces the use of the legacy electronic media channels, that is radio and television. Phone calls and SMS dominated the primary and secondary demographic segment.

The highest utilization of radio as an electronic media channel is observed within the respondents who have no education at 76.5% This percentage reduced as the level of education increased to 0% among those who have degree education and above. The utilization of TV is the highest among the respondents who had a degree and above at 29%. This percentage reduces as the education level of the respondent reduces to only 17% among the respondents who had no education at all. It was found that the educated respondents were more technologically literate and were able to access TV through internet platforms like YouTube and websites while the less educated had both challenges of navigating the internet to access TV but acquiring and maintaining a TV subscription at home. As one participant of the FGD put it,

"*TV is difficult to maintain because you have to pay every month and it even consumes your little solar battery, and I know I can get all I want through my radio" R16*

Social media as a preferred electronic media channel dominates the highest education level at 51.5% among the degree holders and above, and as the education levels reduce to only 5.6% among those with no education at all. Other internet sites were found to have the highest score among the respondents with certificate or diploma level at 19% percent with 0% among those who had no education at all. The study observed the highest-level education attained influences the choice of the electronic media channels more than any other demographic characteristics

of the respondents. The participants argued that, because of mobile technology, (smart phone) all media channels are in one device, the phone.

"*It is easier to catch up with any program on the radio or TV while on the move or at workplace. Information from very serious TV stations like NBS, can be found on social media and YouTube, why would I then sit home to wait for news. I have TV at home but it is for children" R23*

Table 4.9 shows the percentage of each channel use among different education level segments of the respondents

Table 4.9: channel preferred for health information by Education level

			Radio	TV	Social media	Other Internet sites	Phone calls and SMS
Education	None	Count	13	3	1	0	0
		% within Education	**76.5%**	**17.6%**	**5.9%**	**0.0%**	**0.0%**
		% within channel	10.2%	3.9%	1.6%	0.0%	0.0%
	Primary	Count	69	23	5	3	4
		% within Education	**66.3%**	**22.1%**	**4.8%**	**2.9%**	**3.8%**
		% within channel	53.9%	29.9%	7.8%	13.0%	33.3%
	Secondary	Count	38	19	10	1	5
		% within Education	**52.1%**	**26.0%**	**13.7%**	**1.4%**	**6.8%**
		% within channel	29.7%	24.7%	15.6%	4.3%	41.7%
	certificate or diploma	Count	8	21	29	14	1
		% within Education	**11.0%**	**28.8%**	**39.7%**	**19.2%**	**1.4%**
		% within channel	6.3%	27.3%	45.3%	60.9%	8.3%
	degree and more	Count	0	11	19	5	2
		% within Education	**0.0%**	**29.7%**	**51.4%**	**13.5%**	**5.4%**
		% within channel	0.0%	14.3%	29.7%	21.7%	16.7%
Total		Count	128	77	64	23	12
		% within Education	**42.1%**	**25.3%**	**21.1%**	**7.6%**	**3.9%**
		% within channel	100.0%	100.0%	100.0%	100.0%	100.0%
		% of Total	**42.1%**	**25.3%**	**21.1%**	**7.6%**	**3.9%**

Generally, radio and television were observed to dominate as electronic media channels of choice among the research participants. Through qualitative analysis of data from FGDs, we observed the following results.

a) Clarity of the information, since most local TV and radio stations broadcast information in local languages
b) The channels are trusted since, radio and TV are likely to only allow credible people to share information
c) There is increased availability of the two channels through the digital platforms. News and talk shows on radio and TV are tracked on social media and the internet.
d) These channels also allow engagement and participation. A participant can ask a question and get clarification. Confirmed from the FGD,

"We prefer channels where you can ask questions and get a reply. Most channels don't allow you to ask questions for clarity"[R5].

e) They provide audio-visual information that is clearer to understand among people who cannot read and write. Like one participant, a 60-year-old female in patient stated;

"Radios and TV save you the burden of reading very difficult lengthy information. You sit listen or watch and that is it"[R1]

4.3.5. Electronic media channels preferred by occupation categories

The study also investigated whether there was a relationship between education levels and the choice of the electronic media channel preferred for health information. The peasant population was more likely to prefer radio and TV (Radio=72.4%, TV=17.3%). The respondents involved in commercial farming also preferred radio and TV (Radio=68.8%, TV=18.8%) but to a lesser extent than peasants. Among the professional respondents, the study found higher preference for internet sites [38.1%] and social media [34.4%]. Respondents who were business people chose TV [34.9%] and radio [27.9%]. For students, the majority preferred social media [69.2%] to access their health information. Among the professionals and students, the high choice of internet and social media was attributed to the clarity of the information these channels give them. Social media was also considered the gateway to other channels including Artificial intelligence.

"In addition to having access to all media channel through my phone, I think I can easily google and get a better understanding of a health problem. Google give you more details and

now we even have Artificial intelligence but also remember social media is now a gateway to all other media channels" [R7]

Table 4.9 shows the electronic media channels as preferred by different occupation categories.

Table 4.10: Health channel by different occupation groups

			Radio	TV	Social media	Other Internet	Phone calls and SMS
	Peasant	Count	92	22	3	5	5
		% within work	**72.4%**	**17.3%**	**2.4%**	**3.9%**	**3.9%**
		% within channel	71.9%	28.6%	4.7%	21.7%	41.7%
	commercial farmer	Count	11	3	1	1	0
		% within work	**68.8%**	**18.8%**	**6.3%**	**6.3%**	**0.0%**
		% within channel	8.6%	3.9%	1.6%	4.3%	0.0%
	professional	Count	11	36	40	16	2
		% within work	**10.5%**	**34.3%**	**38.1%**	**15.2%**	**1.9%**
		% within channel	8.6%	46.8%	62.5%	69.6%	16.7%
	Business	Count	12	15	11	0	5
		% within work	**27.9%**	**34.9%**	**25.6%**	**0.0%**	**11.6%**
		% within channel	9.4%	19.5%	17.2%	0.0%	41.7%
	Student	Count	2	1	9	1	0
		% within work	**15.4%**	**7.7%**	**69.2%**	**7.7%**	**0.0%**
		% within channel	1.6%	1.3%	14.1%	4.3%	0.0%
Total		Count	128	77	64	23	12
		% within work	42.1%	25.3%	21.1%	7.6%	3.9%
		% within channel	100.0%	100.0%	100.0%	100.0%	100.0%
		% of Total	42.1%	25.3%	21.1%	7.6%	3.9%

4.4. The effectiveness of electronic media on utilization of health services

The study investigated the overall influence of health information received through electronic media and the utilization of health services based at the hospitals. Respondents were interviewed to give their opinions of whether the information received influenced how they used services. Respondents were also asked to give their opinion on the extent to which the current visit was influenced by the previously received health information from electronic media.

4.4.1. Overall influence of electronic media on health care utilization

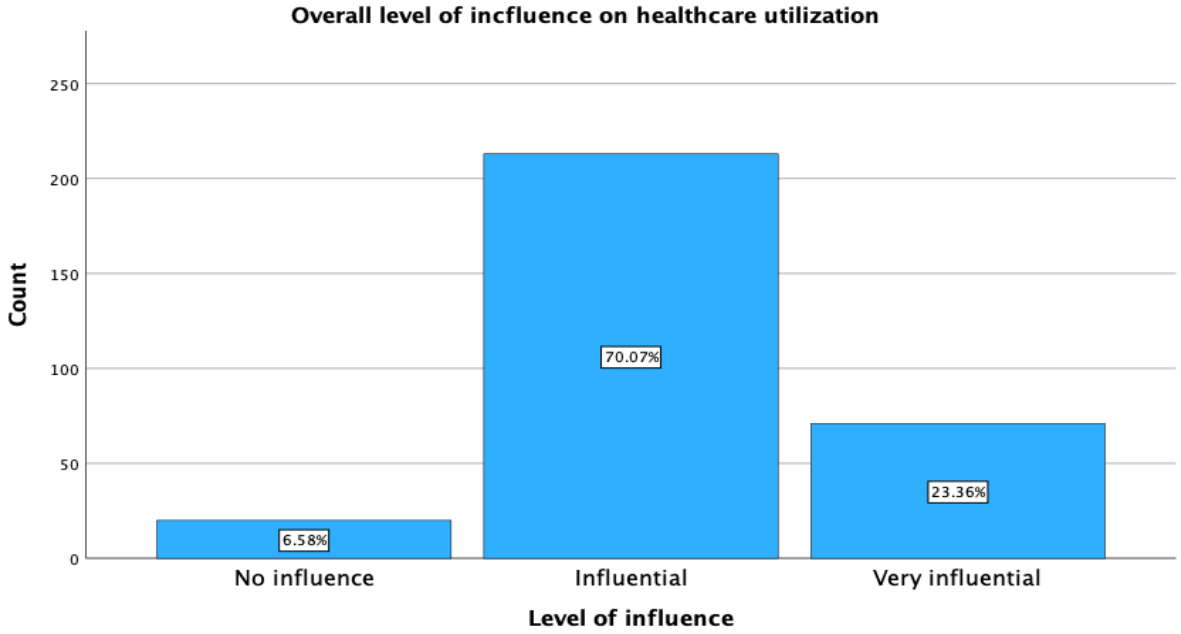
The respondents were interviewed to give their opinion of how the previous health information received through electronic media channels had influenced the way they utilize healthcare services. The study found generally, 70.07% of the respondents agreed that the information was either influential and 23.36% said the information was "very influential" on the way they utilized health care. Only 6.58% of the respondents said the information received in the past had not been not influential. Participants also demonstrated that overall, because of electronic media, health information is now much available. One of the participants of the FGD, a 30-year-old in patient said

"It is easy to know what is wrong with you or what can go wrong any time. with new digital channels, you are constantly aware of what could be wrong with your health. Many providers, some of them very credible hospitals provide constant information through social media and internet sites"[R2].

This explained the high percentage (93.4%) of respondents that agree or strongly agree that electronic media has influenced the way they utilize healthcare

Figure 4.5 show the overall response on how influential electronic media has been on utilization of health services.

Figure 4.4: Overall influence of electronic media on healthcare utilization

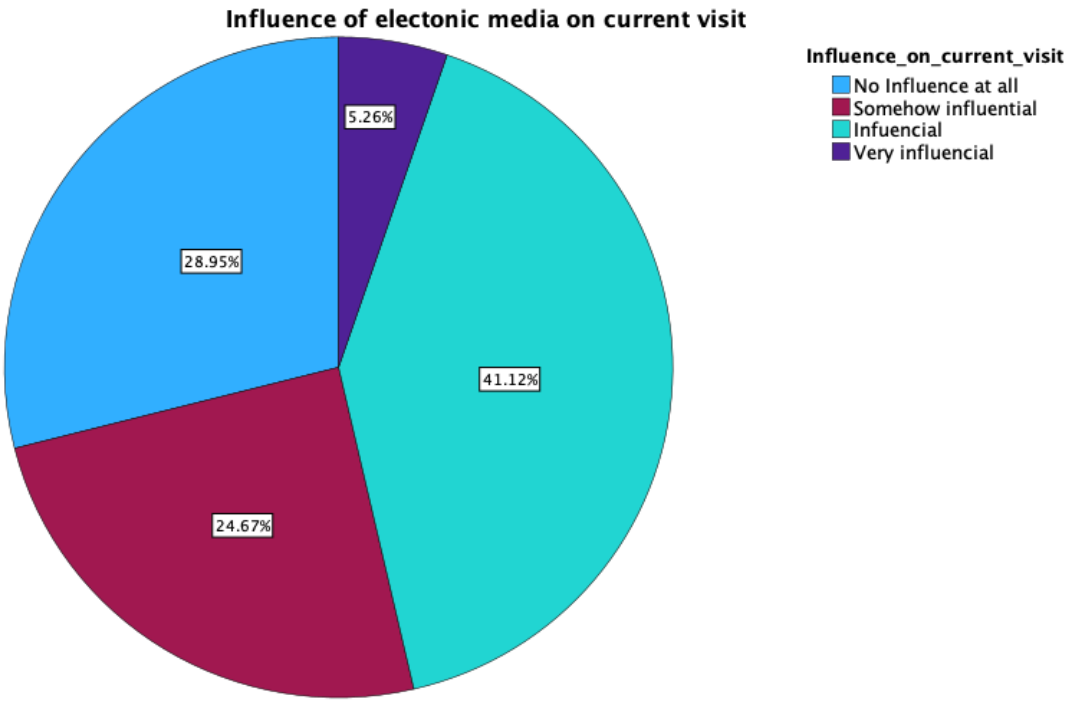


4.4.2. Influence of electronic media on the current visit.

The study also found that generally 41.2% of the respondents agreed that the previous information was influential while 5.26% said the information was very influential on the current visit. On the current visit, the study also found that 28.95% of the respondents said the current visit was not influenced at all by the previous health information received through electronic media channels. As compared to the general influence of health care service utilization (93.43%), there were less individuals who believed the electronic media received in the past had influence of the current visit (65.79%). This is because the study revealed other constraining factors that shape the final decision to visit the health facility. These included; a) Availability of money, b) Confirmation through interpersonal communication, c) Knowledge and consent of the sponsor, d) Distance of the service and knowledge of the costs.

"The distance of the facility is important. Even if I know the service I need, sometimes it is located so far that going for the services may cost more money than the treatment itsself. Therefore, the service has to be special or being temporally offered" [R3]

Figure 4.5: The influence of electronic media on current visit



4.4.3. Influence on the knowledge of service availability and and illness

Furthermore 59.2% agreed that they have ever come to know their illnesses through the health information received through electronic media channels, but only 3.3% strongly agreed to this fact. The analysis also revealed that 30.9% of the respondents said they disagreed with the fact that they have ever come to know their illness through the health information through electronic media channels, and 6.6% strongly disagreed to this fact.

Table 4.10 shows the summary frequency and percentage of the responses.

Table 4.11: Understanding of a personal illness from electronic media

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	20	**6.6**	6.6	6.6
	Disagree	94	**30.9**	30.9	37.5
	Agree	180	**59.2**	59.2	96.7
	Strongly agree	10	**3.3**	3.3	100.0
	Total	**304**	**100.0**	**100.0**	

To establish whether some electronic media channels were associated with increased likelihood of becoming aware of a personal illness, ordinal logistic regression analysis found a fitting relationship and with the highest odd on TV (OR=4.309, P=0.012) and social media (OR=4.263, P=0.037)

Table 4.12: Effectiveness of channels on understanding a personal illness

	Estimate	OR	Sig.	95% Confidence Interval	
RADIO	0.933	2.542	1	0.103	-0.188
TV	1.506	4.509	0.012	0.336	2.676
Social Media	1.206	3.340	0.045	0.028	2.385
Internet sites	1.45	4.263	0.037	0.084	2.816
Phone SMS and Calls	0	1.000	.	.	.

N=304, R^2=0.031, P=0.03

Generally, the study found that there are higher odds of understanding someone's illness if they chose TV and internet sites as the electronic health information channel of choice. The observations in qualitative data analysis also revealed that some channels allowed time for the individual to understand while other channels provided limited information. Radio specifically was cited to be providing very little time for the individual to understand since the programs last for only 30 minutes. Subsequently, individuals have to "google" on the internet to understand better.

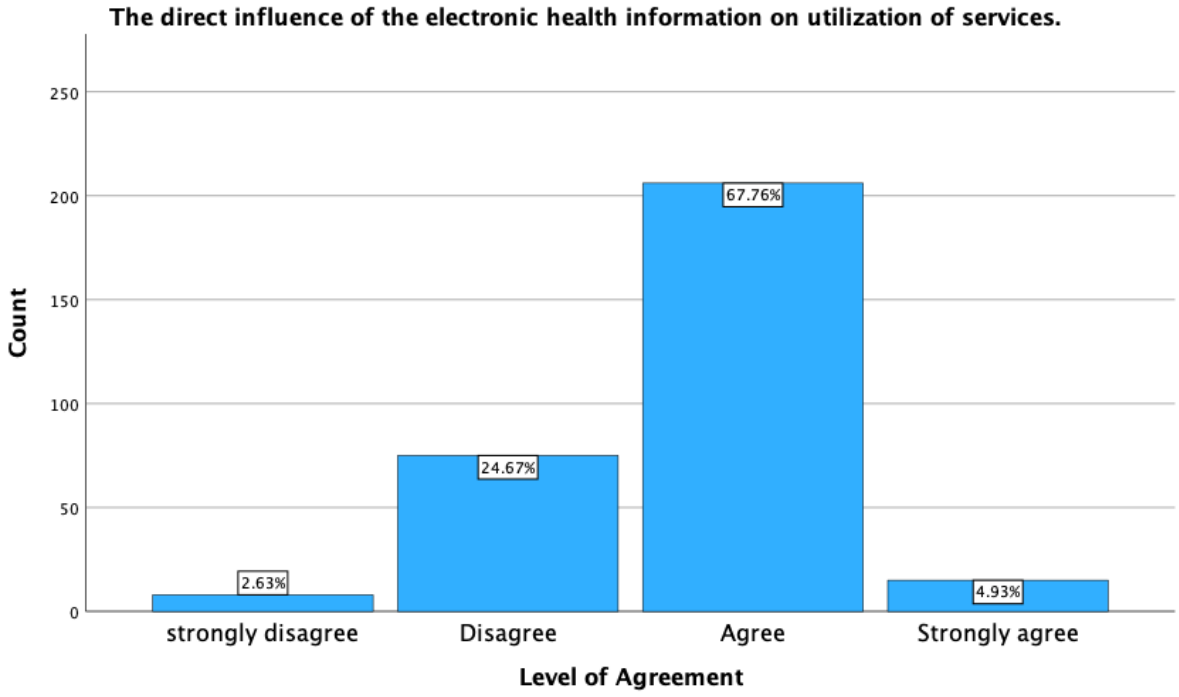
"For you to understand the health issue, you need time. But the problem with TV programs and radios are for 30 minutes and before you understand, the program has ended. That is why the internet is better, you can read different sources and understand. So some times, when I get information from radio or TV, i go and google to understand better"[R2]

4.4.4. Ever went to the hospital due to information received.

The respondents were also asked to agree or disagree with the fact that, after receiving health information from an electronic channel, they went to the hospital for a service they needed. The information revealed that 67.7% agreed to this fact, while only 4.93% strongly agreed. On contrally, 24.67% disagreed while 2.63% strongly disagreed.

Figure 4.7 shows the distribution of responses.

Figure 4.6: Responses on if ever visited a hospital after information



By applying logistic regression analysis to establish the nature of the relationship that exists between the electronic media channel of choice and the likelihood of having ever visited the hospital as a result of information received, the study did not find a significant fitting model (P=0.33, R^2=0.018). This implies that there are other factors that influence the likelihood of visiting a health facility rather than the electronic media channel of choice.

At a personal level, the study found that health information from the electronic media is only one of the factors that affect the decision making. Other factors constrain the decision on utilization. For example, there was a need to first confirm from someone else about the truth of the information received despite which channel is used. This revealed trust issues as far as direct utilization was concerned Like a 29-year-old female SACCO accountant stated.

"However good the information is, I always have to confirm from someone who understands to avoid being conned. Especially if it is a new service provider that you have never visited"[R8].

Hence no specific channel had a statistically significant impact on direct service utilization. The other finding was that among the demographic categories where electronic media was effective, participants argued that they were not usually sick and hence the information helped them to understand the illness of their dependent and take them to for the services.

"I don't usually get sick, but the media has helped me to help people around me to get the care they need" [R8].

4.4.5. Ever take some to the hospital following the information.

When respondents were asked to agree or disagree with the facts that they have ever had to take someone to the hospital following the information received through an electronic media channel, 58.6% agreed to this assertion while only 4.9% strongly agreed. Contrally, 32.6% disagreed while 2.9% disagreed with the facts.
Table 4.12 shows the percentages and frequencies of responses.

Table 4.13: Responses on if ever taken someone to the facility after receiving information

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly Disagree	12	3.9	3.9	3.9
	Disagree	99	32.6	32.6	36.5
	Agree	178	58.6	58.6	95.1
	Strongly agree	15	4.9	4.9	100.0
	Total	**304**	**100.0**	**100.0**	

Using Ordinal Logistic regression, the study investigated the strength of the relationship between the preferred electronic media channel and the likelihood of having to ever take some to the hospital. There are high Odds of the respondents agreeing to have ever taken someone to the hospital following the information received, among those who use social media (OR=9.433, CI: 0.991:3496, P<0.001) and those who use TV (OR=8.207, CI:0.876:3.334,

P<0.001), but generally only 7.7% of the change in the likelihood of taking someone to the hospital is explained by the channel used.

Table 4.13 shows the output of Media channels and their influence of having to take someone to the hospital

Table 4.14: Channel effectiveness on influencing service utilization by taking someone

Media channel Vs Ever taken someone for a service					
CHANNEL	**Estimate**	**OR**	**Sig.**	**95% C.I**	
RADIO	1.333	3.792	1	0.027	0.155
TV	2.105	8.207	<.001	0.876	3.334
SOCIAL MEDIA	2.243	9.422	<.001	0.991	3.496
Internet sites	1.867	6.469	0.009	0.462	3.272
Phone calls and SMS	0	1.000	.	.	.

n = 304 **R^2 = 0.077** **P <0.001**

At an individual level, the study also found that trust was important in influencing the direct utilization of health services. Electronic channels that specified the source information were more trusted than those that were not clear about the source. TV was among the trusted channels because you can see the person teaching, but also by the time someone comes to TV, they have credibility as service providers.

"You see, I have many ways of getting information. But radio and TV somehow allow only professionals, rather than the social media and other channels. For TV, you even see the physical presentation of the person telling you and you can Judge. So, it is about the trust put in the person on the radio or TV rather than how easy you can access the channel" [R20]

Social media and internet pages were also found to provide enough time for the person to understand the symptoms of the illness and how to seek care. On contrally, TV and radio programs were found to provide short time for someone to understand. This explained the high Odd observed for social media and internet pages.

For you to understand the health issue, you need time. But the problem with TV programs and radios are for 30 minutes and before you understand, the program has ended. That is why

internet is better, you can read different sources and understand. So sometimes, when I get information from radio or TV, I go and google to understand better [R2].

4.5. The effectiveness of electronic media on utilization of the health services among different demographic categories.

The study investigated the relationship between the individual demographic characteristics of Age, gender, education level and occupation, and the likelihood of visiting the hospital for a personal service or taking a dependant. Data was analysed to establish the nature of the relationship between the demographic characteristics (as independent variables) and the likelihood of utilizing health services. Two direct outcomes (dependent variables) were considered.

a) Going to the health facility for a personal service after receiving information from an electronic media channel.
b) Taking a someone (dependent or colleagues) to the health facility after getting information from electronic media

The hypothesis to be tested was that individual characteristics of a person have an impact on the decision making about utilization of a specific service after receiving the health information. We considered the two dependent variables as the most direct indicators of health services utilization. The individual characteristics; age category, education level attained, gender and respondent's occupation, acting as independent variables to influence health facility visit, ordinal logic regression was performed to establish the nature of the relationships.

4.5.1. Demographic characteristics and the likelihood of visiting the health facility for a personal service

The research study revealed a statistically significant relationship (P=0.005, R^2=0.081) between being a male and having ever visited the health facility for personal service after information from electronic media. Hence there are increased odds of health services utilization with male gender that females (OR=1.76, CI: 0.214:1.277, P=0.06).

The final decision about the utilization of health services was found to be influenced by the knowledge of the sponsor, who pays the bills. The observation therefore confirms that since in the rural setting, men are decision makers and controllers of resources, they are likely to seek a service after receiving information. On the other hand, women (females' respondents)

depended on the decision of the sponsor, sometimes the husband or a relative with money. And sometimes, an individual understands the service they need and the location, but the final decision is made by the person who has the money.

"Availability of money. Sometimes you know what you need but someone who gives you money, declines. This is even more likely when the service is expensive or concerns sexual and reproductive health services" [R12]

Table 4.15 shows the regression output for gender and the likelihood of visiting the health facility.

Table 4.15: The Effectiveness of the electronic media among gender categories

	Gender Vs Ever gone to health facility					
		Estimate	OR	Sig.	95% CI	
					Lower Bound	Upper Bound
Threshold	Strongly Disagree	-3.411		<.001	-4.125	-2.697
	Disagree	-0.757		<.001	-1.050	-.465
	Agree	3.269		<.001	2.691	3.846
Location	Male	0.745	1.76	0.006	.214	1.277
	Female	0	1	.	.	.

N=304, P=0.005, R^2=0.081

The rest of the demographic characteristics (age, education and occupation) acting as independent variables did not demonstrate statistically significant impact on the likelihood to visit the facility for a personal health service after receiving health information through an electronic media channel.

Table 4.16: Relationship of age and education on facility visit after health information

	Estimate	Sig.	95% Confidence Interval	
18-30 years		1	0.355	-1.769
31-40 years	-0.434	0.486	-1.655	0.787
41-50 years	-0.108	0.872	-1.426	1.209
51-60 years	-0.971	0.165	-2.342	0.401
61-69 years	0[a]	.	.	.
None	-1.325	0.063	-2.723	0.073
Primary	-0.804	0.165	-1.939	0.33
secondary	-0.976	0.086	-2.091	0.14
cert./diploma	-0.309	0.499	-1.204	0.587
Degree	0[a]	.	.	.
Peasant	0.458	0.52	-0.938	1.854
Commercial farmer	0.848	0.331	-0.862	2.557
Professional	0.236	0.708	-1.003	1.476
Business	1.514	0.045	0.03	2.998
Student	0[a]	.	.	.

R^2=0.065, P=0.167, n=304

4.5.2. The demographic characteristics and the likelihood of taking someone one for to the facility for a service

Data was analysed to establish the nature of the relationship between the demographic characteristics (as independent variables) and the likelihood of taking someone to the health facility after receiving information through electronic media channels. Statistically significant relationships were established only between two independent variables, that is, occupation and education levels.

Table 4.16 shows a regression output of respondent's occupation and the likelihood of taking someone to the hospital after the information.

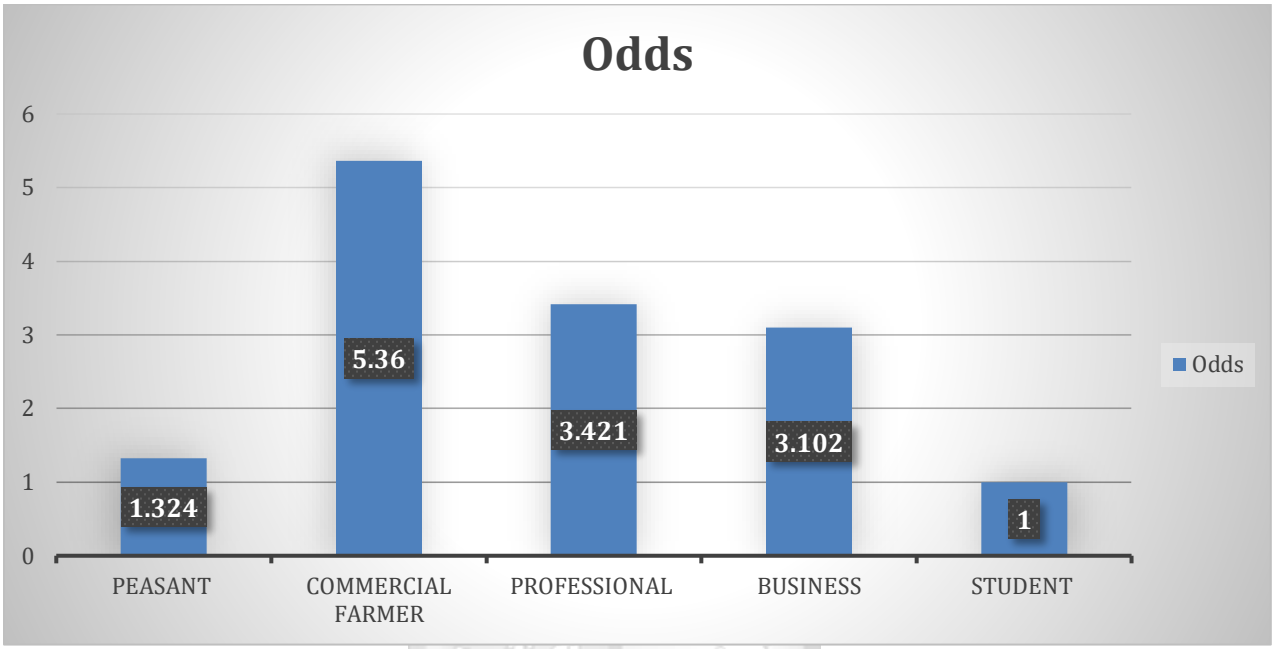
Table 4.17: Effectiveness of electronic media on taking someone to the facility

Occupation and taking someone to hospital					
	Estimate	OR	Sig.	95% Confidence Interval	
Peasant	0.281	1.324	1	0.616	-0.816
Commercial farmer	1.679	5.360	0.029	0.174	3.185
Professional	1.23	3.421	0.032	0.106	2.354
Business	1.132	3.102	0.069	-0.086	2.349
Student	0	1.000	.	.	.

R^2=0.07, P<0.001, n=304.

Figure 4.8 show the graphical presentation of odd of taking someone to the health facility among occupation categories

Figure 4.7: The odds of taking someone to the facility among occupation categories



The regression output table above show that, the odds of taking someone to the health facility are highest if the respondent is a commercial farmer (OR=5.350, CI=0.174:3.185, P=0.029) or a professional (OR=3.421, CI:0.106:2.354, P=0.032). The odd were lowest among peasant farmers (OR=1.324, CI; 0.616:-0.816, p=1)

Another statistically significant relationship was found between the education level and the likelihood of taking someone to the hospital (P=0.011, R^2=0.049).

Table 4.17 shows the nature and the strength of the relationship between the respondent's education level and the likelihood of taking someone to the hospital after receiving health information from an electronic media channel.

Table 4.18: Effectiveness of electronic media among respondents by education level

Education level and taking someone to the facility					
	Estimate	OR	Sig.	95% Confidence Interval	
No education	-1.996	0.136	1	<.001	-3.162
primary	-0.751	0.472	0.061	-1.537	0.034
secondary level	-0.709	0.492	0.092	-1.532	0.115
Certificate and diploma	-0.399	0.671	0.345	-1.227	0.429
degree	0	1.000	.	.	.

Table 4.18 shows that even among the highly educated, there are still lower odds of taking someone to the facility, but the effect is even weaker among lower education levels.

For age, higher odds were found among respondents aged between 31-40 years and 41-50 years.

Table 4.19: Age, gender and the likelihood of taking someone to the hospital due to electronic media

		Estimate	OR	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Threshold	Strongly disagree	-2.566		<.001	-3.693	-1.438
	disagree	.118		.819	-.895	1.131
	Agree	3.713		<.001	2.570	4.856
Location	18-30 years	.280	1.3	.597	-.759	1.320
	31-40 years	.882	2.4	.108	-.193	1.957
	41-50 years	1.054	2.9	.079	-.121	2.228
	51-60 years	.355	1.4	.571	-.875	1.585
	61-69 years	0[a]	1.0	.	.	.
	Male	.393	1.5	.110	-.089	.876
	Female	0[a]	1.0	.	.	.

R2=0.042, P=0.051, n=304

Table shows that respondents in the age group of 41-50 years were more likely to take someone to the health facility (OR=2.9, CI:-0.121:2:228, P=0.079). Though not statistically significant the odds reduce as the age reduces below 41 and as age increases above 50 years.

Generally, the analysis showed that the odds of taking someone to the health facility were more significant for education level, occupation, age than gender.

Focused group discussions found that even when the respondent received and believed the health information, the decisions for utilization were made by the "sponsor", that is, the person that pays the bills and transportation.

"Availability of money is important. Sometimes you know what you need but someone to give you money, declines or is not ready. In most case, this is your husband or a friend with money" [R12]

The bill sponsors are working class relatives, children of elderly respondents or well-wishers This explains the observations of the odds in the professionals, male gender and age bands of 31 years to 50 years. Ideally these are the working-class members who have income levels to make them sponsors. The respondents who took someone to the hospital were middle aged working class, who occasionally learn illnesses of their old parents and dependants and then help to connect them to the services available.

"It has helped because, for us who have old parents, you can connect the complaints and what is being taught in the media and take the person to the facility. In other words we learn of the illness of our dependent before they even know and then we advise them to go to the facility or take them directly for example for me I learnt prostate cancer screening through media and since then my father has taken tests twice" R 20

5. CHAPTER FIVE: DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.0. Introduction

This chapter presents the summary of the findings, the conclusions drawn and recommendations. The presentation in each subsection is arranged chronologically in line with the study objectives The objectives of the study were to determine the electronic media channels used by different demographic segments in a rural setting to access health information, establish the effectiveness of different electronic media channels on utilization of health services and to establish the effective of health information from electronic media on utilization of health services among different demographic categories in the rural setting

5.1. Discussions

The study established the demographics of the respondents as a way of setting background for the independent variables.

5.1.1. Gender demographics

The study found that the gender distribution was 65.8% female and 34.2% males. This indicates that generally females' gender is more likely to utilize facility-based health services than males. This has been a common finding in other studies like (Bertakis, Klea, Azari, Rahman, & Helms, 2000) and (Annette & Walter, 2009)

5.1.2. Age demographics

The study found that the majority of the respondents were aged between 18-30 years at 40.09% of the respondents. The least of the respondents were aged between 61-69 years at only 4.93%. Looking at the groups, the age bands from 18-40 years contributed 69.37% of the respondent. This is a reflection of Uganda's age demographic pyramid, where 70% of the population is less than 35 years of age.

5.1.3. Education level demographics

Owing to the fact that this was a study in a rural setting, the study revealed that the majority (63.8%) of the respondents had no tertiary education and that a small only 12.2% had degree

education and above. This describes the typical education level of the rural settings where more than 50% of the population do not attain tertiary education (Nabugoomu, 2019) due to high school dropout rates (Kakuba, Nakinga, & Glaz, 2025)

5.1.4. Occupation demographics

Due to the study setting, the research revealed that 41.8% of the respondents were peasant farmers. This corresponds to the lower education levels that determine where someone is employed. The uneducated are likely to practice subsistence farming and other informal livelihood activities (Mukwaya , Bamutaze, Mugarura, & Todd, 2012).

5.1.5. Electronic media channels accessible and used by respondents

The study established that the two leading channels owned by participants were radio at 70% and phone calls and messages at 66.3%. Television and social media are used by 50.5% and 50.2% respectively. The least accessible channels of the ones studied were found to be other internet sites and other channels at 39.9% 8.9% respectively. The finding reveals that the legacy electronic media channels accessible but with raising influence of modern internet-based channels This finding is consistent with findings of a 2023 study of digital content access by smallholder farmers (D.P, T, Ssekito, NambogoF, & B, 2023) who found a higher mobile phone penetration and internet access among respondents, but with a very low utilization of social media The further found limited use of digital platforms like internet as social media to be limited by language and most of the study respondents preferred. Earlier, mobile telephone and radio had been found to be the most used tool of communication with an overall of 52.7% and 69.1% respectively and TV in the third position (Muyingo & Ali, 2020) The study concluded that there was a paradigm shift in the usage of radio and TV from traditional reception to new media reception through internet and digital channels. The findings of this study are in line with these previous findings.

For the choice of the electronic media for health information, this study revealed 42.1% preferred radio as the channel for accessing health information. This was followed by TV at 25.3%, and social media at 21.1% the least preferred was phone calls and SMS at 3.9%. A study of the media channels used by pregnant mothers to access health information in Uganda

found radio and TV as the leading channels used to access health information at 77% and 29% for radio and TV respectively, (Quraish, Mutisya, & Musaba, 2016).

From the analysis of this study, there is relatively higher use of social media than previously reported studies (Namasinga & Orgeret, 2020). Social media is now used to access other authentic sites like digital TV channels, health facility social media accounts hence its increased adoption for a wide range of information (Muyingo & Ali, 2020). Whereas radio and TV were chosen as media channels of choice, their access is increasing through smart mobile phones rather than the traditional physical devices. The mobile phone by enabling access to social media and internet, provide access to other channels (Namukasa, et al., 2017)

Investigating channel preference among the demographic groups, Males were more likely to use social media (27.9%%) than females (15.5%). Males have a decision over resources and are more likely to access internet enabled devices than females. In theory, self-adequacy plays a key role in determining adoption of a health behavior. Males having decision over resources have more self-adequacy than females.

Higher education levels also increased the preference to social media and internet pages than lower education. Higher education is more literate and could easily understand information but they are also busier and more engaged hence no time to sit and listen to radio or watch TV. Therefore, higher education levels (certificate, diploma and degree) preferred social media and the internet than lower education levels. For example, 51.4% of the respondents with a degree chose social media as their channel of choice, while 39.7% of certificate or diploma respondents preferred social media. This was found to be related mainly to the ability to read and understand the English text in contrast to those with less education. In 2016, Quraish, Mutisya and Musaba had found inability to read and understand text as the barrier that limited rural pregnant mothers' use of the newspapers or text messages and hence preferred radio and Television while the higher education levels preferred more digital based channels that allow access everywhere they are.

5.1.6. Effectiveness of electronic media of utilization of health services

The study found electronic media was generally effective at positively influencing the way people in the rural setting utilized healthcare services. Up to 93.3% of the respondents confirmed that the information received through electronic media channels has positively

shaped their decisions on how they seek health. The availability of information empowers people to know what is going wrong with their health or what can go wrong at any point. This observation is in line with the theory of Health Brief Model. Information from electronic media clarifies of the disease susceptibility and perceived threats contributing to the decision to implement a health behavior, in this case, Healthcare utilization.

In addition, while studying the influence of mass media on initiation of ANC, Serwanja, Mutisya and Musaba (2022) found that access to mass media was associated with early initiation of ANC. The Odds were higher if the respondents were exposed to Television and radio as media channels. Their findings are consistent with the findings of this study.

5.1.6.1. Effectiveness of different electronic media channels

Whereas TV and radio were popularly used, social media and TV (ORs, 9.4 and 8.2 respectively) were the most effective channels at driving direct utilizations of health services. Social media channels were used to follow health programs on digital TV and other credible health facility social media pages. Previously (Sembatya & Fred, 2020), had found that electronic media, especially social media, was more effective at driving promotion of healthcare organization by acting as a complementary channel but also as a channel where traditional broadcast media can be accessed. They further found that social media was effective because; i) It was a more interactive health learning platform (iii) enabled user engagement through discussion (iv) provided an opportunity to target a specific population. The focused group discussions of this study also found that electronic media channels that provided interaction were the most preferred and were trusted.

5.1.7. Effectiveness of electronic media among different demographic groups.

5.1.7.1. Effectiveness among Gender categories

Electronic media had a more direct impact on males than females when it comes to utilization of health services. There were more chances of visiting the facility for a service after receiving information among males than females. The males are decision makers and own resources while females sometimes need permission first. Studying community perceptions of the determinant of health service utilization (Bakeera, Wamala, , & Sandro , 2009) found that the ownership of livelihood assets belonged to the family head who was mainly the male gender

and that this significantly affected the utilization of health services among family members. These findings of this study agree with the narrative.

5.1.7.2. Effectiveness among occupation demographic categories

Electronic media was more effective amongst commercial farmers and professionals than peasants and students. The study found that these were the occupation categories who make decisions both for themselves and for their dependents The lowest effectiveness was among peasants when using students as the reference category. Commercial farmers, professionals and business people were more likely to take someone to the health facility following the information received through electronic media than peasant farmers because the decisions of peasants are constrained by financial capability. The study finding points to gainful employment of an individual as the main determinant utilization of health services after information has been received. The results are in line with the findings of Bakeera, Wamala and Sandro (2009) who concluded that in addition to transport ownership and health literacy, income source and wealthy category of the "least poor" were the main determinants of healthcare utilization among pregnant mothers they studied.

5.1.7.3. Effectiveness among education level categories.

Higher education categories were more likely to utilize a health service than lower demographic categories. With the lowest chances being among the respondents with no education. Findings were the same for (Saifuddin & Andreea , 2010). This reveals that the capacity to pay being the main determinant of utilization. Studying the factors that affect health facility use during child birth among women in Uganda, Quraish, Mutisya and Musaba (2016) mother with tertiary education and who belonged to the richest wealth quintile were more likely to utilized facility maternal and child health services than women of lower education or those that belong to the lower income quintile.

5.1.7.4. The effectiveness among age categories

Electronic media was more effective among the age groups of 31-50 years. There were highest chances of visiting the hospital due to information received through electronic media were highest among 41-50 years followed by 31-40 years. The chances were lowest among 18-30 years old. The study did not establish a statistically significant relationship between specific

age categories and the likelihood of utilizing health services. In Ugandan context, even among the older people, utilization of health services is more related to their ability to earn wages (Wandera, Kwagala, & Ntonzi , 2015)

5.2. conclusions

This section outlines the conclusions made from the results of this study. The conclusion are made on each of the objectives of the study

5.2.1. Electronic media channels accessed by population in the rural setting

Radio and mobile phone SMS are the most widely accessed electronic media channels in the rural setting. There is a significant increase in access and use of social media and internet sites for accessing information in the rural settings when compared to previous studies. To access health information radio and TV have the highest adoption across all the studied demographic categories, but these channels are increasingly being accessed through social media and digital platforms.

Education level has the most influence on the choice of the channel adopted for health information than any other demographic category considered in this study. There is higher preference to social media and internet sites as the channels for health information among people who have a tertiary education and above

5.2.2. Overall Effectiveness of electronic media on utilizations of health services.

Generally, electronic media has positively influenced the way people in the rural setting utilize health services. The availability of information has empowered the rural population to know what can go wrong with their health and to know what to do when things go wrong. However, there are other factors that influence the final decisions to utilize health services, especially facility-based service. The main factors found were;

a) Availability of the money
b) The decision of the payer (sponsor)
c) Trust in the information received
d) Clarity of the information

Overall, TV and social media are the most effective electronic media channels at driving direct utilization of health services in the rural setting. Whereas radio and phone SMS were the most accessible, they were the least effective at driving utilization of health services.

5.2.3. Impact of demographic characteristics on the effectiveness of electronic media as a determinant of service utilization

Occupation and gender were the main determinants of the electronic media effectiveness. Even in the rural setting, being in gainful employment (commercial farmer, a professional or business) is associated with higher chances of utilizing health services as a result of electronic media exposure.

The effectiveness of electronic media was found to be higher among male gender than female. Whereas males have the autonomy to seek care after receiving health information, females are likely to seek permission first and hence affect their responsiveness.

Though education level was a lesser determinant of direct health service utilization as a result of electronic media, people with tertiary education are more likely to utilize health services than those who have secondary, primary and no education.

5.3. Study limitations

The sampled population was already exposed to the health promotion and education efforts of the facilities under study. This therefore limited the ability to determine the influence of electronic media on utilization of health services in a neutral institution All the patient's sample were attending private medical centres, which may provide biased results The convenient sampling applied while selecting the study facilities poses a risk of bias in the results since the number of facilities selected are not representative of all the private facilities.

5.4. Recommendations

From the results, the study recommends that to effectively drive utilization of health services using electronic media, healthcare providers and policy makers should target the educated, those in gainful employment (professionals, commercial farmers, business) and males, since they are not only responsive to health information, but also decision makers for their family members, relatives and dependants. To optimize effectiveness, those sharing information

should address trust issues by clarifying the source information and the legitimacy of that source. In the rural setting, the effectiveness of electronic media can be improved if the issues of language barrier are addressed by translating the information into simple and understandable local dialects and preferably make it audio or video rather than text.

5.5. Suggestions for further research

A comparative study focused on respondent in public and private facilities to compare the results and provide evidence of similarities or differences between the two populations would enable better understanding of the relationship between electronic media health service utilization in rural settings

Since the study focused on age, gender, occupation, education levels and electronic media channels used, a study that examines the relationship between electronic media and other social, economic and political determinants of health as the independent variables is recommended.

REFERENCES

Sembatya, & Fred, K. (2020). *Use of Facebook among Health Promoting Organisations in Uganda.* Kampala: Health News Media research.

Quraish, S., Mutisya, L. M., & Musaba, M. (2016). *Exposure to different types of mass media and timing of antenatal care initiation.* BMC women health.

Bakeera, S. K., Wamala, , S., & Sandro , G. (2009). *Community perceptions and factors influencing utilization of health services in Uganda.* International Journal for Equity in health.

D.P, M., T, L. J., Ssekito, B., NambogoF, & B, N. (2023). *Smallholder Farmer Access to ICTs and Digital Content: Experiences from Uganda.* African Journey of development.

Muyingo, R. I., & Ali, K. (2020). *Practices of Broadcast Media Usage in The Age of New Media: Evidence From Uganda.* Intermedia international E-Journal.

Namasinga , F., & Orgeret, K. (2020). *Social media in Uganda: revitalising news journalism?* Sage Journals .

Muyingo , R., & Ali, K. (2020). *Practices of Broadcast Media Usage in The Age of New Media: Evidence From Uganda.* Kampala.

Namukasa, J., Nabaggala, M. S., Kiragga, A., Owarwo, C. N., Seera, M., & Nakiginji, W. (2017). *High mobile phone ownership but low internet access and use among young adults attending an urban HIV clinic in Uganda.* An International Interdisciplinary Journal for Research, Policy and Care.

Wandera, s., Kwagala, B., & Ntonzi , J. (2015). *Determinants of access to healthcare by older persons in Uganda: a cross-sectional study.* International journal for equity in health.

Bertakis, Klea, D., Azari, Rahman, J., & Helms, L. J. (2000). *Gender Differences in the Utilization of Health Care Services.* Journal of family practice.

Annette , A. G., & Walter, D. L. (2009). *Gender differences in health and health care utilisation in various ethnic groups in the Netherlands: a cross-sectional study.* BMC public health.

Nabugoomu, J. (2019). *School Dropout in Rural Uganda: Stakeholder Perceptions on Contributing Factors and Solutions.* Education Journal.

Kakuba, C., Nakinga, O., & Glaz, V. (2025). *Who leaves school prematurely in Uganda: Do predictors vary by place of residence?* International Journal of Educational Development.

Mukwaya , P., Bamutaze, Y., Mugarura, S., & Todd, B. (2012). *Rural-urban transformation in Uganda .* Journal of African development.

Albarran, A. B. (2010). *Media concetration and digital Media challenges .* University of Texas.

Newman, N. (2022). *Journalism, media, and technology trends and predictions 2022.* Reters institute for the study of Journalism.

Bekkum, J. E., & Shona, H. (2013). *The challenges of communicating research evidence in practice: perspectives from UK health visitors and practice nurses.* BMC Nursing .

Doran, E., David, H. A., & Marie-clare, B. (2012). *A Prompt to the Web: The Media and Health Information Seeking Behaviour.* PLOS.

Melanie, W. A., Loken, B., & Robert , H. C. (2010). *Use of mass media campaigns to change health behaviour.* Journal of African Health sciences.

Frieden, R. (2014). *How internet Platform intermediaries operate .* Pacific telecommunication council.

Esipisu, I., & Kariithi, N. (2011). *New Media Development in Africa.* Global Media Journal.

Basu, A. (2009). *The Role of Branding In public Health Campaigns* . Journal of communication Management.

Okaka, W. (2008). *Effective Health communication campaigns for community empowerment for health in uganda* . National Meeting (Conference) at Hotel Africana, Kampala.

Xie-Connell, C. (2015, June 10). *what is electonic media*. From Skillsmaker: https://www.skillmaker.education/what-is-electronic-media/#:~:text=Electronic%20media%20definition%20%E2%80%93%20Electronic%20media%20is,television%20the%20radio%2C%20or%20the%20wide%20internet.

Czaplicki, J. (2023). The Evolution and Impact of Electronic Media: A Comprehen- sive Analysis. *Journal of Mass communication and Journalism*, 1.

Ford Foundation . (2023). *The state of media in uganda* . African center for media execellence .

Media council of Uganda. (2023). *Licensed Media Companies in uganda.* Media council of uganda.

Kemp, S. (2023, Februray 14). *Digital 2023: Uganda*. From DATAREPORTAL: https://datareportal.com/reports/digital-2023-uganda

Okoth, D. O. (2021, June). dapting to survive: Radio and digital media in Eastern Africa. *Konrad Adenaur Stiftung*, pp. 2-22.

BBC. (2019). *Uganda-Media Landscape report.* BBC MEDIA ACTION.

Jeffrey, J. (2010). Mechanisms of access to the Internet in rural areas of developing countries. *ELSEVIER*, 370-376.

Xuewei, C., Heather , O., Jennifer , H. L., Waters, E. A., Schofield, E. M., Yuelin, L., & Kiviniemi, M. T. (2018). Differences in Rural and Urban Health Information Access and Use. *The Journal of Rural Health*, 405-417.

Buchanan, S., & Onyinye, C. O. (2024). Exploring health literacy in developing economies: Perspectives and practices of health communication professionals in rural Nigeria. *Health Literacy and Communication Open*.

Seera, S. (2014). Deterninants of participation in livelihood diversification among Peasant farmers in rural uganda. *Makerere University repository*.

Suzuki, E. C., & Aziz, A. (2021, February). *he demographic boom: An explainer on Uganda's population trends*. From World Bank blogs: https://blogs.worldbank.org/en/africacan/demographic-boom-explainer-ugandas-population-trends#:~:text=This%20growth%20in%20population%20will%20also%20be,urban%20centers%20and%2051%20in%20rural%20areas.

Adijwanou, V., & LeGrand, T. (2014). Gender inequality and the use of maternal healthcare services in rural sub-Saharan Africa. *ELSEVIER*, 67-78.

Suruchi, S., Corrinne, S. R., & Joanna, S. (2014). Health Communication Campaigns in Developing Countries. *Journal of Creative Communication*.

Nyambane, R. (2014). Effect of Electronic Media Sources on Cervical Cancer Awareness Among Women in Kenya: Case Study of Reproductive Health Clinics at the Kenyatta National Hospital, Nairobi County, Kenya. *Dialectical Perspectives on Media, Health, and Culture in Modern Africa (pp.39-58)* , 39-58.

Artuso, S., Cargo, M., Alex, B., & Mark, D. (2013). Factors influencing health care utilisation among Aboriginal cardiac patients in central Australia: a qualitative study. *BMC Health Services research*.

Ajzen. (1988). *Attitudes personality and behavior.* Chicago: Dorsey Press.

Adebayo, F. (2016). Engaging Social Media for Health Communication in Africa: Approaches, Results and Lessons. *Journal of Mass Communication & Journalism*.

Sabatini, D., & Hong, L. (2013). The impact of consumer health information on the demand for health services. *ELSEVIER*, 1-11.

Musoki, J. (2010). Factors that determin Effective utilization of health services in uganda . *university of dar el salaama repository* .

Prof. Melanie A. Wakefield, Barbara , L., & Robert , C. H. (2014). use of mass media campaigns to change health behaviour. *PMC* , 3-5.

Debarchana. (2006). Effect of mother's Exposure to electronic Mass Media on knowledge and use of prenatal care services: A comparative analysis of Indian States. *The professional Geographer*, 279.

Bbaale. (2011). Factors influencing the utilization of antenatal carre content in uganda. *Pub med*, 1.

Campbell, & Cornish. (2012). How can community health programmes build enabling environments for transformative communication? Experiences from India and South Africa. *NIH*, 2.

Brungeman, Turinawe, & Twemisisi. (2020). Social networks for health communication in rural Uganda. *GLOBAL PUBLIC HEALTH*, 3.

Kreuter, & MCclure. (2004). The Role of Culture in Health Communication. *Annual reviews of public Health*, 2.

WHO. (2023, May Friday). *monitoring health for the SDGs, sustainable development goals.* WHO. From WHO: https://www.who.int/data/gho/data/themes/world-health-statistics

Tibenderana, Kellander, Akpogheneta, Strachan, Kirkwood, B., Meek, & Benton. (2013). Mobile Health (mHealth) Approaches and Lessons for Increased Performance and Retention of Community Health Workers in Low- and Middle-Income Countries: A Review. *Journal of medical internet research*.

Rutuja, & Balamurugan. (2018). The Role of Mass Media in Health Care Development. *Journal of Advanced Research in Journalism & Mass Communication*, 4.

Lawrance , M., Dodd, Z., Mohor, S., Dunn, S., & Crespigny, d. C. (2009). *Improving the patient Journey to achive positive outcomes for remote aboriginal cardiac patients* . Cooperative research center for Aboriginal health.

Peterson M, Thamas J, Walker , E., Julia, K., cowley, M., Kosari, S., . . . Naunton, M. (2018). Medicines Misinformation by the Media. *Clinical Pharmacology & Therapeutics*, 1059-1061.

Fiske. (2018). *Social Beings: Core Motives in Social Psychology.* John Wiley & sons.

Hagg, E., Leanne, M. C., & Dahinten, V. S. (2018). The emerging use of social media for health-related purposes in low and middle-income countries: A scoping review. *International Journal of medical infromation*, 92-105.

Mohd, Z., & Ram, B. R. (2017). Socioeconomic Determinants of the Utilization of Antenatal Care and Child Vaccination in India. *Asia Pacific Journal of Public Health*, 649-659.

Frieden, T. R. (2014). Six Components Necessary for Effective Public Health Program Implementation. *American Journal of Public Health*, 20.

Godlee, F. (2004). can we achieve health information for all by 2025. *Pub MED*, 295-300.

Initiative, G. M. (2004). *The media and HIV/AIDS.* Geneva: UNAIDS.

pazzanese, C. (2021, february 9). *How covid 19 emperiences will reshape the workplace* . From Harvad Gazette: https://news.harvard.edu/gazette/story/2021/02/how-covid-experiences-will-reshape-the-workplace/

Aldalaykeh, M., Mohamed , M. A.-H., & Jehad , R. (2021). COVID-19 Help-seeking Behaviors: Application of the theory of planned behavior. *Pub Med*, 15-22.

wamala, S. P., Sandrp, G., & Andrew, S. (2009). Perceptions and Factors influencing the Utilization of health care in uganda . *International Journal for Equity in Healthcare*, 1.

Acharya, D., Vishnu , K., Mandira , A., & Stella, G. (2015). Impact of mass media on the utilization of antenatal care services among women of rural community in Napal. *Springer Link*, 2-5.

Gyan, R., Abdul-Aziz , S., Bright , O., Abdul Cadri, James, B., John , E. H., . . . Sanni Yaya. (2022). Association between frequency of mass media exposure and maternal health care services utilization among women in sub-sahara Africa: implications of tailored health communication and education. *PLOS ONE* .

Bekkum, J. E., & Shona, H. (2013). Primary Care Nurses' experience of how the mass media influence frontline healthcare in the UK. *BMC Family plactice*, 2-3.

Grilli, R., Ramsay, C., & Minozzi, s. (2002). Mass media interventions: effects on health services utilisation. *Pubmed*.

Hosanovna, N. (2019). Models of Financing and organization of healthcare systeme - International experience . *International Journal of management science and Business administration* , 7-12.

MARQUEZ, P. V. (2012, November 14th). *Can improved health conditions contribute to long-term economic growth?* From World bank blogs: https://blogs.worldbank.org/health/can-improved-health-conditions-contribute-to-long-term-economic-growth

Musoke, N. (2001). HEALTH INFORMATION ACCESS AND USE IN RURAL UGANDA: AN INTERACTION-VALUE MODEL. *Ph D thesis*.

K, F., & J, L. (2020). Mass media exposure and maternal healthcare utilization in South Asia. *Elsevier*.

Mheidly, N., & Fares, J. (2020). Leveraging media and health communication strategies to overcome the COVID-19 infodemic. *Springer Link*, 410-420.

Elder, W., Shults , R. A., Sleet , D., Nichols , J. L., Thompson , s., & Rajab MS. (2004). Effectiveness of mass media campaigns for reducing drinking and driving and alcohol-involved crashes: A systematic review. *Science direct* , 57-65.

Dowhaniuk , N. (2021). Exploring country-wide equitable government health care facility access in Uganda. *BMC*.

Amzat , J., & Razum, O. (2017). Rurak health in Africa. *Spinger link*.

Azevedo, M. J. (2017). The State of Health System(s) in Africa: Challenges and Opportunities. *PMC PubMed central*.

Lule, J. K., Gitta, S. N., Lindfors, A., Okuonzi, S., Onama, V. O., & Forsberg, C. B. (2010). Private and public health care in rural areas of Uganda. *BMC International Health and Human Rights* .

Rutebemberwa, E., Buregyeya, E., Lal, S., Clerk , S. E., Hansen, K. S., Magnussen, P., . . . Mbonye, A. K. (2016). Assessing the potential of rural and urban private facilities in implementing child health interventions in Mukono district, central Uganda–a cross sectional study. *BMC*.

Konde-Lule, J., Okuanzi, S., Mukanga, D., Matsiko, c., Onama, V., & Gitta, S. N. (2006). THE POTENTIAL OF THE PRIVATE SECTOR TO IMPROVE HEALTH OUTCOMES IN UGANDA. *Makerere Univeristy*.

Okuonzi, S., Matsiko, c., Mukanga, D., Gitta, S. N., Konde-Lule, J., & Onama, V. (2006). THE POTENTIAL OF THE PRIVATE SECTOR TO IMPROVE HEALTH OUTCOMES IN UGANDA. *Makerere Insitute of public health*.

Champion, V., Skinner , C., glanz, K., Rimer , B., & Viswanath, K. (2008). In *Health behavior and health education* (pp. 45-65).

Lu, B., Yan, L., & Chen, Z. (2022). Perceived values, platform attachment and repurchase intention in on-demand service platforms: a cognition-affection-conation perspective. *Journal of retailing consumer services* , 67.

Hsieh, H., & Tsai, C. (2013). An empirical study to explore the adoption of telehealth: health belief model perspective. *Journal of Engineering Science and Technology Review*, 6(2).

S.T., F. (2018). *Social Beings: Core Motives in Social Psychology.* John Wiley & Sons.

Ryan, R., & Deci, E. (2017). *Self-determination Theory: Basic Psychological Needs in Motivation, Development, and Wellness.* Guilford publicatons.

Rosenstock, I. M., Strecher, V. J., & Becker, M. H. (1988). Social learning theory and the Health Belief Model. *Pub Med*, 175-183.

Yuen, K. F., Chua, J. Y., & Wang, X. (2023). The determinants of users' intention to adopt telehealth: Health belief, perceived value and self-determination perspectives. *Journal of retailing and consumer services*.

Peters , R. M., & Templin, T. N. (2010). Theory of Planned Behavior, Self-Care Motivation, and Blood Pressure Self-Care. *PMC PubMed central*, 172-186.

Pourmand, g., Doshmangir, L., Ahmadi, A., Noori, m., Rezaeifar, A., Mashhadi, R., . . . Gordeev, V. (2020). An application of the theory of planned behavior to self-care in patients with hypertension. *BMC Public health*.

Tusubira, A. K., Nalwadda, C. K., Akiteng, A. R., Hsieh, E., Ngaruiya, C., Rabin, T. L., . . . Armstrong-Hough, M. (2021). Social Support for Self-Care: Patient Strategies for Managing Diabetes and Hypertension in Rural Uganda. *PMC PubMed central*, 87(1):86.

Sood, S., Shefner-Rogers, C., & Skinner , J. (2014). Health Communication Campaigns in Developing Countries. *Journal of creative communications*.

Redmond, N., Baer, H. J., Clerk, C. R., Lipsitz, S., & Hicks, L. (2010). Sources of health information related to preventive health behaviors in a national study . *American Journal of preventive medicine*.

Ghio, D., Lewes-wickwar, S., Tang, M., Epton, T., Howlett, N., Jenkinson, E., & Westbrook, J. (2021). What influences people's responses to public health messages for managing risks and preventing infectious diseases? A rapid systematic review of the evidence and recommendations. *BMJ Opwn*.

Aliyi , B., Dassie, Y., Deressa, A., Debella, A., Birhanu, A., Gamachu, M., . . . Mussa, I. (2023). Demand of and Access to Health Messages Through Mass Media in the Rural Community of Eastern Ethiopia: A Mixed Method Study. *Risk managment and Healthcare policy*, 1859-1874.

Sami, A. (2016). Integrating Quantitative and Qualitative Data in Mixed Methods Research—Challenges and Benefits. *Journal of Education and Learning* .

Tariq, S., & Woodman, J. (2013). Using Mixed methods in health research . *Journal of the Royal Society of Medicine* , 4-6.

Kenny , C. (2008). Information and Communication Technologies for Direct Poverty Alleviation: Costs and Benefits. *Deevelopment Policy Review*, 141-157.

Shinichi, T. (2000). *African Studies and Rural Development.* Chibs: Institute of Development Economics .

Ouma, S., & Herselman, M. (2008). E-health In rural Areas: Case of developing Countries . *International Journal of Humanities and Social Sciences*.

Cristin, A., Storer, E., Arinaitwe, M., Kamurari, S., & Adriko, M. (2021). COVID-19 information dissemination in Uganda: Perspectives from sub-national health workers. *BMC Health Services Research*, 1061.

Ravendra , K., & SubbaRoa, M. (2016). *Health communication in the changing media landscape.* Springer International publishing.

Hagg, E., Dahinten, S., & leanne , M. (2018). and future research should investigate the relative effectiveness of various platforms for different users, other potential uses, and

pursue a broader geographical focus. *International Journal of medical information*, 92-105.
Dimmick, J., McCain, T., & Bolton, W. (1979). Media Use and the life span. *American Behavior scientist* , 7-31.
Davis, R., & Westbrook, G. (1999). Television in the lives of the elderly: Attitudes and opinions . . *Journal of Broadcasting and Electronic media*, 209-214.
Beverly A, B.-B., Ronald , C., & Katy , E. (2011). Influences on TV Viewing and Online User-shared Video Use: Demographics, Generations, Contextual Age, Media Use, Motivations, and Audience Activity. *Journal of Broad casting and electronic media*, 471-493.
Meena, H., Meera, P., & Chivukula, U. (2023). *Health Psychology. Contributioj to the indian Health system.* New York: Routledge.
Hieftje, K., Edelman, J., & Camenga , D. (2013). Electronic Media–Based Health Interventions Promoting Behavior Change in Youth. *JAMA pediatric*.
JAYA, S. K., Subrata, K. P., Meely, P., SWAIN, S., Rajeshwari, S., Pranab, M., & Sanghamitra, P. (2021). Reach, accessibility and acceptance of different communication channels for health promotion: a community-based analysis in Odisha, India. *Journal of preventive medicine and hygiene*, 62.
Odini, S. (2013). Accessibility and Utilization of health information by rural women in Vihiga County, Kenya . *International Journal of science and Research* .
Kamulegeya, L., Bwanika , J., Banonya, H., Atuhaire, J., Musinguzi, D., Nakatte, V., . . . Harvath, K. (2021). Feasibility and acceptability of a digitally supported channel of behavioral messaging on modern contraception, a pilot cross-section study in Uganda. *JMIR Formative reaserch*.
Arsenijevic, J., & Andevski, M. (2015). Media Literacy within the context of socio-demographic Characteristics. *Procedia Technology*, 1142-1151.
Shakeel, S., Shagufta , N., Najia, R., Wajiha, I., Ahmed, H. F., Mehwish, R., & Shazia, J. (2017). *Utilization and impact of electronic and print media on the patients health status Physicians perspectives* . Journal Pharmacy and BioAllied Sciences .
Aebischer , S., Martinez, E., du Mortier, S., Ross, R., Pahud, M., Urbaniak, V., . . . Hagon, O. (n.d.).
Neetij , R., & Bikash , T. (2015). The Study of purposive samplig method. 10-11.
Ilker, E., Sulaiman, A. M., & Rukayya , S. A. (2015). Comparison of Convenience Sampling and Purposive Sampling. *American Journal of Theoretical and Applied Statistics*.
LLOYD, F. A. (1961). Ideology and Culture in Uganda Nationalism. *American Anthropologist Association* .
UNBS. (2024). 2024 Uganda National Housing and population sensus.
Edel, M. M. (2018). *The Chiga of Western Uganda.* London: Routledge.
Shagofah, N., Omid, T., & Jawad , G. (2022). Simple random sampling. *International Journal of Education and Language studies* .
Shabbir, S.-A., Min-Huei, H., Usman, I., Jeremiah, S., Chih-Wei, H., & Phung , A. N. (2015). Utilizing Health Information Technology to Support Universal Healthcare Delivery: Experience of a National Healthcare System. *Journal of Telmedicine and e-Health*.
Pakenham-Walsh, Royston G, Pakenham-Walsh N, & Zielinski C. (2020). Universal access to essential health information: accelerating progress towards universal health coverage and other SDG health targets. *BMJ Glob Health*.
Managing the COVID-19 infodemic: Promoting healthy behaviours and mitigating the harm from misinformation and disinformation. (2020, September 27). From WHO: https://www.who.int/news-room/detail/23-09-2020-managing-the-covid-19-

infodemic-promoting-healthy-behaviours-and-mitigating-the-harm-from-misinformation-and-disinformation

WHO. (2020). *Managing the COVID-19 infodemic: Promoting healthy behaviours and mitigating the harm from misinformation and disinformation.* WHO.

WHO. (2020). *Managing the COVID-19 infodemic: Promoting healthy behaviours and mitigating the harm from misinformation and disinformation.* WHO.

Phillipa, P. S., & Isaac, A.-A. (2017). *Challenges Confronting Rural Dwellers in Accessing Health Information in Ghana: Shai Osudoku District in Perspective* . MDPI.

WHO. (2017). *WHO communication strategy.* WHO.

Andrea , W., Karl , E., & Ulla-Karin, N. (2013). Enhancing the Role of Health Communication in the Prevention of Infectious Diseases. *Journal of Helath communication*.

Snehasish , B., & Shirley S. , H. (2019). Applying the theory of planned behavior: Examining how communication, attitudes, social norms, and perceived behavioral control relate to healthy lifestyle intention in Singapore. *International Journal of Healthcare Management*.

Saifuddin , A., & Andreea , C. A. (2010). Economic Status, Education and Empowerment: Implications for Maternal Health Service Utilization in Developing Countries. *PLOS*.

DEMOGRAPHICS OF QUOTED RESPONDENTS

RESPONDENT	AGE	GENDER	OCCUPATION	HIGHEST LEVEL OF EDUCATION
R1	41	FEMALE	BUSINESS	DIPLOMA
R2	29	MALE	STUDENT	DEGREE
R3	48	MALE	PEASANT	NONE
R5	36	FEMALE	BUSINESS	DIPLOMA
R7	33	FEMALE	TEACHER	DEGREE
R8	30	MALE	BUSINESS	DIPLOMA
R12	32	FEMALE	BUSINESS	SECONDARY
R16	50	MALE	PEASANT	PRIMARY
R17	32	MALE	BUSINESS	DIPLOMA
R20	39	FEMALE	ACCOUNTANT	DEGREE
R23	28	MALE	BANKING	DEGREE

APPENDIX A. INTRODUCTORY LETTER TO THE STUDY

INFORMATION FOR PARTICIPANTS AND STUDY CONSENT (ENGLISH)

Study Title: The Effectiveness of Electronic Media on Utilization of Health Services in a Rural Setting.

Study background: This study aims to investigate the role electronic media plays on utilization of health services in a rural setting of southwestern Uganda. Electronic media which include radio, television, mobile phone, websites e.tc has been recently target by many health service providers and other health sector players to influence the utilization of health services and health promoting good health. The rural setting continues to face social-economic barriers like lower literacy levels, access to digital infrastructure and other. These may hinder the effectiveness of the health information passed through electronic media. This study intends to establish the electronic media channels used by the rural population and the effectiveness of this information at influencing the utilization of health services in a private setting.

Section 1: Information sheet of the Principal Investigator

1.1 Investigator: Dr. Dickson Niwasasira

1.2 Institutional affiliation: STRATHMORE UNIVERSITY BUSINESS SCHOOL

Section II: General information

2.1. Why is the study being conducted?
The vital conclusions from this study will help different providers to create and deliver health information effectively through the modern media channels, and also to create awareness for facility-based health services especially in the rural areas.

2.2: Must I take part in this study?
Taking part as a participant in the study is completely voluntary. You are free not to participate and you can even withdraw from the study at any time without you having to giving any reasons.

2.3: Which persons qualify to participate in the study?
Any person aged 18 to 69 years seeking a health service at either Doctors Case Medicals Ishaka or Doctors case medicals Rukungiri.

2.4: Who does not qualify to take part in the study?
Patients and attendants who have declined to give consent. Patients who are severely sick or those who have mental health diagnosis.

2.5: What is my role when I accept to take part in the study?
You will be asked to sign a consent form after fully understanding the goals behind the study. Our research assistant will then take you through a questionnaire that explores your experience on the use of electronic media on utilization of facility-based healthcare services.

2.6: Do I expect any risk or danger when taking part in the study?

We have designed the study to protect your information and we shall observe high level confidentiality. No part of the information will be used without your consent.

2.7: How do I benefit by taking part in the study?

The results of the study will help to improve demand creation and effective public awareness on facility-based health services. This will benefit you and other community members in future.

2.8: Is there any implication when I decline to participate?

Participation remains voluntary and no implication for declining to participate.

2.9: How will the information from this study be disseminated?

The results of this study will be disseminated to the management teams of the facilities involved in the study. Printed copies will also be available at the facilities and the district health departments in Rukungiri and Bushenyi.

2.10: Review on Oversight

The development of this research protocol has been under review and oversight of both Research ethics committee of Uganda virus research institute (REC-UVRI) and Uganda National council of science and technology (UNST).

2.11: If I have other concerns, who can I contact?

1. You are free to contact Dr. Dickson Niwasasira, at Doctor's case medicals by e-mail me at (niwasasirad@doctorscase.org), or through mobile (+256779277290). Alternatively, the research supervisor, DR. Joseph Onyango jonyango@strathmore.edu , +254 (0)720 879706 at the Strathmore Business School, Nairobi, can be contacted.
2. The Secretary–Strathmore University Institutional Ethics Review Board, P. O. BOX 59857, 00200, Nairobi, email ethicsreview@strathmore.edu Tel number: +254 703 034418.
3. You can also contact the Chairperson Research Ethic committee of Uganda Virus Research Institute (REC-UVRI) on 0716321962, Plot 51-59, Nakiwogo Road, Entebbe P.O. Box 49, Entebbe- Uganda Tel: +256414321962

SECTION III: Consent

3.1 Participants declaration

I, _____, understand the study and all that is involved. I hereby voluntarily consent to participate and I have the right to withdraw along the study period.

Research participant Signature: _____Date: _____

Or Thumb print _____ Date _____

Impartial Witness

Name_____Sign_____Date_____

_____

3.2 Researchers' declaration

I, _____ (Name of person taking consent) declare that I have followed the right procedure to inform the participant and I have given enough information on the study to the best of my knowledge. I have also given the participant an opportunity to ask questions of his or her concern and have answered them to the best of my knowledge.

Investigators names _____signature……. Date …….

APPENDIX B1: CONSENT FORM FOR FGD

INFORMATION FOR PARTICIPANTS AND STUDY CONSENT (ENGLISH) FOR A FOCUSED GROUP DISCUSSION

Study Title: The Effectiveness of Electronic Media on Utilization of Health Services in a Rural Setting.

Study background: This study aims to investigate the role electronic media plays on utilization of health services in a rural setting of southwestern Uganda. Electronic media which include radio, television, mobile phone, websites e.tc has been recently targeted by many health service providers and other health sector players to influence the utilization of health services and promote good health. The rural setting continues to face social-economic barriers like lower literacy levels, access to digital infrastructure and other. These may hinder the effectiveness of the health information passed through electronic media. This study intends to establish the electronic media channels used by the rural population and the effectiveness of this information at influencing the utilization of health services in a private setting.

SECTION 1: INFORMATION SHEET OF THE PRINCIPAL INVESTIGATOR

1.1 Investigator: Dr. Dickson Niwasasira

1.2 Institutional affiliation: STRATHMORE UNIVERSITY BUSINESS SCHOOL

Section II: General information

2.2. Why is the study being conducted?

The vital conclusions from this study will help different providers to create and deliver health information effectively through the modern media channels, and also to create awareness for facility-based health services especially in the rural areas.

2.3: Must I take part in this study?

Taking part as a participant in the study is completely voluntary. You are free not to participate and you can even withdraw from the study at any time without you having to give any reasons.

2.4: Which persons qualify to participate in the study?

Any person aged 18 to 65 years seeking a health service at either Doctors Case Medicals Ishaka or Doctors case medicals Rukungiri.

2.5: Who does not qualify to take part in the study?

Patients and attendants who have declined to give consent. Patients who are severely sick or those who have mental health diagnosis.

2.6: What is my role when I accept to take part in the study?

You will be asked to sign a consent form after fully understanding the goals behind the study. Our research assistant will initiate the discussion with you and 5-7 others to understand your thoughts on the use of electronic media and utilization of health services.

2.7: Do I expect any risk or danger when taking part in the study?

We have designed the study to protect your information and we shall observe high-level confidentiality, except that during open discussions, your fellow participants may come to know your experiences. This too has been taken care of because every participant will be requested to protect each other's privacy during and after the discussion. To enhance your privacy, during the discussion, you may also choose that your voice not be recorded and this will be granted. During the study, you may also lose time on some of your planned activities but this has been taken care of through a compensation of 10,000/=.

2.8: How do I benefit by taking part in the study?

The results of the study will help to improve demand creation and effective public awareness on facility-based health services. This will benefit you and other community members in future.

2.9: Is there any implication when I decline to participate?

Participation remains voluntary and no implication for declining to participate.

2.10: How will the information from this study be disseminated?

The results of this study will be disseminated to the management teams of the facilities involved in the study. Printed copies will also be available at the facilities and the district health departments in Rukungiri and Bushenyi.

2.11: Review and oversight of the research

This research has been reviewed by, and is under the oversight of both Research ethics committee of Uganda Virus research institute (REC-UVRI) and Uganda National council of science and technology (UNCST).

2.12: If I have other concerns, who can I contact?

You are free to contact Dr. Dickson Niwasasira, at Doctor's case medicals by email me at (niwasasirad@doctorscase.org), or through mobile (+256779277290). Alternatively, the research supervisor, DR. Joseph Onyango jonyango@strathmore.edu , +254 (0)720 879706 at the Strathmore Business School, Nairobi, can be contacted.

The Secretary–Strathmore University Institutional Ethics Review Board, P. O. BOX 59857, 00200, Nairobi, email ethicsreview@strathmore.edu Tel number: +254 703 034418.

The Chairperson Research Ethics committee REC-UVRI, Plot 51-59, Nakiwogo Road, Entebbe P.O. Box 49, Entebbe- Uganda Tel: 0716321962.

SECTION III: Consent

3.1 Participants declaration

I, _____, understand the study and all that is involved. I hereby voluntarily consent to participate and I have the right to withdraw along the study period.

Research participant Signature: _____Date: _____

Or Thumb print _____ Date _____

Impartial witness (for illiterate participants)

Name_____Signature_____Date_____

3.2. Consent for recording:

I, _____, understand the study will involve the recording of responses I give. I hereby voluntarily consent to participate and to be **recorded** as part of capturing my opinion.

Research participant: Signature: _____. Date: _____

Or Thumb print _____ Date _____

Impartial witness (for illiterate participants)

Name_____Signature_____Date_____

3.2 Researchers' declaration

I, _____ (Name of person taking consent) declare that I have followed the right procedure to inform the participant and I have given enough information on the study to the best of my knowledge. I have also given the participant an opportunity to ask questions of his or her concern and have answered them to the best of my knowledge.

Investigators names _____signature……... Date …….

APPENDIX B2: CONSENT FORM FOR FGD -RUNYANKOLE-RUKIGA

EBYOKUMANYA AHA KUKYONDAOZA OKU, NOKWIKIIRIZA OKUKWETABA OMUKIGANIRO

OMUTWE GW'OKUKYONDOZA: Egyero eyi Obyoma byamahurire birikubasa kwongeza okukozera obuhereza bwebyamagara omubantu obarikura omubyaro.

Enamba yowayetabba omukukyondoza…….

Ekiicweka kyokubanza: Ebirikukwata Aha muntu oyebembeire okukyodoza oku.

1.1 Omukyondozi: Dr. Dickson Niwasasira

1.2 Ekiitongore: Strathmore University Business School

Ekicweka kyaakabiri: Okumanya aha kukyondoza oku

2.1 Okukyondoza oku nikwenda kubba nikurondereza okw'engyero yobutumwa oburikurabira omubyoma ebyempurizingana burikubasa kuyamba abaantu okumanya kandi no kukozesa obuhereza obwebyamagara okukiira munonga omubantu abarikutura omubwaro. Abantu abarikutuura omubyaro, nibeshanga nebizibu byingi ebikwatiriine nokumanya eshonga no buhereza bwamagara ahiburikushagwa. Zimwe ahanshonga ninka o'kutagira ebyoma ebyomurembe ebirikubasa kubahisaho obutumwa obu. Nonkwetegereza obutwumwa obu tikwanguhi ahabwokushoborokyebwa okwahansi omubantu. Ebitungore ebirikuhereza obuhereza obu, nibugumizamu kukozesa ebyoma ebi, okuhisya ahabantu bomubwaro obutumwa nobukirabe ngu omuhanda ongu nikiine ebizibu ahamuntu yomukyaro. Okukyondoza oku, nikuza kuyamba ebitongore bwingi kumanya oku byokubasa kuhisya aha bantu bomubyaro obutumwa kandi bakabwetegyereza bakabasa nokukozesa obuhereza obyomumarwariro.

2.2. Ahabwaki okukyondoza oku kurikwetagwa?

Ebirarugye omukukyondoza oku nibyija kuyamba abamarwariro nagavumenti kumanya engyero eibbokubasa kuhitsya abantu ab'omubyaro obutumwa obukwasire ahamagara okusinga munonga okurabiira omubyoma ebyamahurire.

2.3. Nekigyemo okwetaba omukukyondoza oku?

Okwetaba omukukyondoza oku, nokwekundira kandi nobaasa kwanga ninga okome omumuhanda kandi hatabaho okweshobororaho ahabwaki wayanga. Kusharamu kwawe tikukabasa to hindura engyero eyoraherezibwemu obuhereza ahirwariro eri.

2.4. Nibaantuki abarikubasa kwetaba omu kukyondoza oku?

Burimuntu wena ahikiize emyaka 18 kuhisya 69 ya'obukuru kandi orabe ayizire kuronda obuhereza ahirwarire rya doctors case medicals nabasa kutaba omukukyondoza oku.

2.5 Nibaantuki abatarikwikiirizibwa kwetaba omukukyondoza oku?

Abantu abarayange kwetaba omukukyondoza oku, narishi abatarikubasa kugamba nari abatarikubasa kweshariramu, Nainga abatabukiire omutwe.

2.6 Kundikiirize kwetaba omukukyodoza oku, nimba ninza kukoraki?

Noyija kushabwa kusayininga akapapura aka, reero omukyondozi akubuuze ebibuuzo ebyoragarukyemu ahabyorikumanya aha butumwa obyebyamagara oburikurabira omubyoma ebyamahurire kandi nokworikukiira kubikozesa.

2.7. Haine akabi koona okundikubasa kuboona nikiiriza kwejumba omukukyondoza oku?

Okukyondoza oku kutebekanisibwe omugyero yo'kwenda kurinda ebyoratugambire. nkonka nobasa kushanga ebiwagamba byakwijusya ebeera ezorabiremu ahaza kikuretere obugwakubi. Obakyondoozi nibija kugyezaho kukoshomesa okuwakubasa kwerinda obugwakubi ok.

2.8. Obwire Byangye, nibwija kushashugwa?

Nitukimaya ngu tihine ekitwakukura kushashura obwire obyiratuhereze, nkoka nitwija kukubonera akasiimo ka 5,000 kwenda kukusiima**.**

2. 9. Nyowe ningobamuki omukwetaba omukukyondoza oku?

Ebirarugye omukukyondoza oku, nibyija kuyamba abamarwarire na govumenti okumanya emihanda eyokubasa kurabiramu kuhitysa bantu obutumwa obukwatirine namagara barikurabiira omubyoma ebyamahurire.

2.10. okwenda kurinda ebihama ahabindagambe kuri kuta?

Buri byoragarukemu byona, biza kurindwa nobwegyendesereza buhangao. Kandi amazina nebindi ebyokusa kutuma wamanya, bwona nitwija kubushereka. Ebipapura byona ebi, nibyija kuba bisibirine eshaha yona.

2.11 Ebiraruge omukukyondoza oku nibyija kujanjazibwa biita?

Ebirarugye omukukyondooza oku, nibyija tohebwa abamarwarire ogokukynedeza oku kukozirwemu, turikurabira omu nkiiko nabo. Kandi, ofiisi zabakuru bebyamagara omu disituriki bahebwe obutaabo burimu obirugiire omukukyondoza oku. Za magazine zensi yoona nazo nizija kushohoza abiraruge omukukyondoza oku.

2.11: okushujumwa no'kurebererwa kwo'kukyondoza oku:

Okukyondoza oku nikurebererwa akakiiko akareberera ebyokukyondoza aka Uganda virus research institute (REC-UVRI) kandi na Uganda national council of science and technology.

2.12. Noyenda kwemurugunya, nimbasa kuhikiirira nkahi?

Oyine obugabe kihikiirira oyebembeire okukyondoza oku Dr. Dickson Niwasasira aha doctors case medicals okurabiira ahamutimbagano niwasasirad@doctorscase.org ninga omuterere esiimu aha 0779277290. Narishi ohikiirire omushomesawe DR. Joseph Onyango jonyango@strathmore.edu , ninga omuteerere esimu aha +254720879706 hashangwa aha Strathmore business school, Nairobi kenya.

Kwonka nobaasa nokuhikirira akakiko akarikureberera obugabe bwabari kwejumba omukukyondoza aka Strathmore university institutional Ethics Review Board, P.O.BOX 59857, 000200, Nairobi ahamutimbagano ethicsreview@strathmore.edu nari batereere ahari +254703034418

Nobaasa nokuhikirira kyeyamani wa'kakiko akarikureberera obugabe bwari kwejumba omukukyondoza aka UVRI aha 0716321962. Kandi nibashangwa ahaPlot 51-59, Nakiwogo Road, Entebbe P.O. Box 49, Entebbe- Uganda Tel: +256414321962

Ekiicweka kyakashatu: Okwikiriiza:

3.1: Okwikiiriza kwomuntu oyokwetaba omukukyondoza

Nyowe. _____, (Eizina ryawe) ninyikiriza ngu ebibanshoborore nabikyenga ebikwasire ahakukyondoza oku, kandi ninkimanya ngu nimbasa kukomera omumuhanda ahundayendere.

Sayini_____ Ebiiro _____

Nainga,

Ekiinkumu _____ ebiiro _____

Omujurizi otarikugurwa

Eiziina_____ Sayiini_____ Ebiiro_____

3.2 Okwikiriza kwomukyondozi

Nyowe _____, (Eiziina ryawe) ninkimanya no omuntu ogu orikuza kwetaba omukukyonodoza namushobororera kandi yayetengyereza. Namuha nomugisha gwokubuiza ebibuzo byoona ebyayine ahakukyondoze oku.

Sayiini_____ ebiiro _____

APPENDIX C: QUANTITATIVE DATA QUESTIONNAIRE

THE EFFECTIVENESS OF ELECTRONIC MEDIA ON UTILIZATION OF HEALTH SERVICES IN A RURAL SETTING.

Principal investigator: Dr. Dickson Niwasasira, MBChB, MBA-HCM Student, Strathmore University business school, Nairobi Kenya.

Supervisor: Prof. Joseph Odhiambo Onyango, Associate prof. of Change management Strathmore University School

QUESTIONNAIRE

SECTION ONE: PARTICIPANTS LOCATION.

1.1. What category of services is the respondent attending?

☐ OPD. ☐ In-patient

SECTION TWO: DEMOGRAPHICS

2.1. Respondent category?

☐ Patient. ☐ Attendant.

2.2. Age

☐ 18–30-year ☐ 31-40 year ☐ 41-50 years. 51-60 year ☐

☐ 61-69 years

2.3. Gender of the respondent.

☐ Male ☐ Female

2.4 Level of education.

☐ None. ☐ Primary. ☐ Secondary. ☐ Diploma or certificate. ☐ ree and beyond.

2.1 Occupation.

☐ Peasant. ☐ Commercial farmer. ☐ Professional. ☐ Business person. Student ☐

SECTION THREE: ELECTRONIC MEDIA CHANNEL UTILIZATION

3.1. Type of electronic media channel available at home (tick all apply).

☐ Radio. ☐ TV. ☐ Social media. ☐ Internet site. ☐ Phone calls and SMS ☐ others

3.2. The channel utilized daily for general information (tick all that apply)

☐ Radio. ☐ TV. ☐ Social media. ☐ Internet site. ☐ Phone calls and SMS ☐ others

3.3 which specific channel do you use for health information specifically?

☐ Radio. ☐ TV. ☐ Social media. ☐ Internet site. ☐ Phone calls and SMS

3.4 Have you had any health information through any of the following media channels and how frequent

	1. **Never.**	2. **very Rarely.**	3. **Rarely.**	4. **Frequent.**	5 **Very frequently**
A) Radio.	1.	2.	3.	4.	5.
B) TV	1.	2.	3.	4.	5.
C) Internet.	1.	2.	3.	4.	5.
D) Social medial	1.	2.	3.	4.	5.
E) Phone messages and calls.	1.	2.	3.	4.	5.
F) Others .	1.	2.	3.	4.	5.

SECTION FOUR: INFORMATION TYPE, SOURCE AND CLARITY

4.1 The type of health information did you receive recently (3 months)?

☐ Text ☐ Phone call ☐ video message ☐ Picture or photo. ☐ audio message ☐ others

4.2 What was the information about?

☐ Service availability. ☐ Disease prevention ☐ Behavioral chang ☐ others

4.3 Where was the information coming from?

☐ MOH ☐ District department of health ☐ Government facility ☐ Private facility

4.4 In your view, was the information clearly understood?

☐ Not at all. ☐ Partly understood ☐ well understood

SECTION FIVE: THE IMPACT OF ELECTRONIC HEALTH INFORMATION ON HOSPITAL SERVICE UTILIZATION

5.1. To what extent has the information you received in the past influenced the way you take up the health care recommendation.

☐ No influence at all. ☐ Influential. ☐ Very influential

5.2. To what extent has the information you received recently or in the past influenced this visit to the hospital.

☐ No influence at all. ☐ Somehow influential. ☐ Influential ☐ Very influential

5.3 Have you had to advise a colleague, relative or a dependent on seeking a hospital-based service?

☐ Never ☐ Rarely ☐ Usually ☐ Many times

5.4. I have known some of my illness through a message from the media?

☐ Strongly Disagree. ☐ Disagree. ☐ Agree. ☐ strongly agree

5.5. Through electronic media, I have had to know about the existence of a health service I needed.

☐ Strongly Disagree. ☐ Disagree. ☐ Agree. ☐ strongly agree

5.6. I have ever gone to the hospital to get care following the information I received from an electronic media.

☐ Strongly Disagree. ☐ Disagree. ☐ Agree. ☐ strongly agree

5.7. I have ever advised someone to go to hospital for a service after the information I received from media

☐ Strongly Disagree. ☐ Disagree. ☐ Agree. ☐ Strongly agree

5.8. I have taken someone to the hospital for services after I have known through electronic mass media

☐ Strongly Disagree. ☐ Disagree. ☐ Agree. ☐ Strongly agree

APPENDIX D: FOCUSED GROUP DISCUSSION GUIDE

THE EFFECTIVENESS OF ELECTRONIC MASS MEDIA ON THE UTILIZATION OF HEALTH SERVICES IN A RURAL SETTING.

Record Group cohort ..... Facility……..Date:…….

Ensure the age, gender, occupation and education level of all participants is known and recorded

How do you generally get information?

Which concerns do you have about electronic media channels available now?

Tell us which channels you prefer for health information and the reasons why you prefer the channel.

Tell us your experience with the health information you have been receiving through electronic media channels?

How has this health information helped you concerning how you use health services generally

Are there any issues that may render this information not to useful?

what is your advice regarding the health information that is passed through electronic mass media?

Do you have any other information you would like us to know on this subject as researchers?

APPENDIX E: APPROVAL FROM SU-ISERC

Strathmore UNIVERSITY

7th May 2024

Dr Niwasasira Dickson,
dickson.niwasasira@strathmore.edu

Dear Dr Niwasasira,

RE: The Effectiveness of Electronic Media on Utilization of Health Services in a Rural Setting

This is to inform you that SU-ISERC has reviewed and **approved** your above **SU-masters** research proposal. Your application reference number is **SU-ISERC2185/24.** The approval period is from **7th May 2024 to 6th May 2025.**
This approval is subject to compliance with the following requirements:

i. Only approved documents including (informed consents, study instruments, MTA) will be used.
ii. All changes including (amendments, deviations, and violations) are submitted for review and approval by SU-ISERC.
iii. Death and life-threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to SU-ISERC within 72 hours of notification.
iv. Any changes anticipated or otherwise that may increase the risks or affected safety or welfare of study participants and others or affect the integrity of the research must be reported to SU-ISERC within 72 hours.
v. Clearance for the export of biological specimens must be obtained from relevant institutions.
vi. Submission of a request for renewal of approval at least 60 days prior to the expiry of the approval period. Attach a comprehensive progress report to support the renewal.
vii. Submission of an executive summary report within 90 days of completion of the study to SU-ISERC.

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

Yours sincerely,

Mr Ambrose Rachier,
Chairperson; SU-ISERC

APPENDIX F: APPROVAL FROM UGANDAN NATIONAL HEALTH RESEARCH ORGANIZATION AND UVRI

UNHRO
Uganda National Health Research Organisation

Uganda Virus Research Institute
Plot 51-59, Nakiwogo Road, Entebbe
P.O. Box 49, Entebbe-Uganda
Tel: +256 414 320 385 / 6
Fax: +256 414 320 483
Email: directoruvri@uvri.go.ug

REPUBLIC OF UGANDA

Our Ref: GC/127/1043
Your Ref:

February 17, 2025

To: Dr Dickson Niwasasira, Principal Investigator

Application Title**: "The Effectiveness of Electronic Media on Utilization of Health Services in a Rural Setting."**

Type: [✓] Initial Approval

The Uganda Virus Research Institute Research and Ethics Committee reviewed your proposal referenced above and granted approval for this study from February 17, 2025 to February 16, 2026.

As Principal Investigator of the research, you are responsible for fulfilling the following requirements of approval:

- All co-investigators must be kept informed of the status of the research.
- Changes, amendments, and addenda to the protocol or the consent form must be submitted to the REC for re-review and approval **prior** to the activation of the changes. The REC application number assigned to the research should be cited in any correspondence.
- Reports of unanticipated problems involving risks to participants or other must be submitted to the REC. New information that becomes available that could change the risk: benefit ratio must be submitted promptly for REC review.
- Only approved consent forms are to be used in the enrollment of participants. All consent forms signed by subjects and/or witnesses should be retained on file. The REC may conduct audits of all study records, and consent documentation may be part of such audits.
- Regulations require review of an approved study not less than once per 12-month period. **Therefore, a continuing review application must be submitted to the REC eight weeks prior to the above expiration date of** February 16, 2026 **in order to continue the study beyond the approved period.** Failure to submit a continuing review application in a timely fashion may result in suspension or termination of the study, at which point new participants may not be enrolled and currently enrolled participants must be taken off the study.

The following is the list of all documents approved in this application by UVRI REC

1. Administrative clearance from Doctor's Case Medicals Ltd
2. Protocol version 1.2 dated 20th January, 2025
3. Dissemination plan
4. Consent form Quantitative English and Runyankole version 1.2 dated 20th January, 2025
5. Consent form FGD English and Runyankole version 1.2 dated 20th January, 2025
6. Focus group interview guide version 1.0 dated 04th April 2024
7. Quantitative data questionnaire version 1.0 dated April 2024
8. Community engagement plan
9. GCP certificate of the investigator
10. Approval from the University of Strathmore Ethics committee
11. Updated CV for PI
12. Letter of Research Confirmation-Dickson Niwasasira

Yours Sincerely,

Dr. Tom Lutalo
Chair, UVRI REC
C.C File, UVRI REC

APPENDIX G: LETTER TO THE FACILITIES

your life, our passion

DOCTOR'S CASE MEDICALS LTD

Republic Road Rukungiri Town Email:info@doctorscase.org
Website: www.doctorscase.org Tel:
0393246478/0393224758

Date: 8th January 2025

To: Dr. Dickson Niwasasira, MBA-HCM student
Strathmore University Business school, Nairobi Kenya
And Principal investigator
+256-779277290/+254-706104470

Dear Dickson,

RE: Permission to conduct the research study **"The Effectiveness of Electronic Media on Utilization of Health Services in Rural Setting."** At Doctors Case Medicals, Ishaka and Rukungiri.

On behalf of management and the Board, am delighted to write to you in response to your request, to conduct the study mentioned above where the participants are our clients' seeking services in the two facilities of Ishaka and Rukungiri.

After careful consideration, we have decided to offer you the permission to conduct this study at the sites as requested.

Please keep the following as priories throughout the exercise:

a) Work closely with our staff on duty and management members to ensure recruitment of participants and data collection does not interfere with service delivery.
b) Conduct all activities Pertaining the research with maximum ethics, respecting the privacy of the participants and that of the company/facility.
c) Endeavor to share all your findings to the management of the facilities, the company and board of directors and or other related parties to improve on the communication using electronic platforms.

We wish you all the best

Yours truly,

.....

Dr. Asaph Byamugisha
Director of Medical services
Doctor's Case Medicals LTD
0779097074, bbasaph100@gmail.com

DOCTOR'S CASE MEDICALS LTD
RUKUNGIRI
08 JAN 2025
P.O. Box 104, Rukungiri

APPENDIX H: RESEARCH LICENSE

Uganda National Council for Science and Technology
(Established by Act of Parliament of the Republic of Uganda)

Our Ref: SS3705ES **8 April 2025**

DICKSON NIWASASIRA
Doctors Case Medicals LTD
Rukungiri

Re: Research Approval: **The Effectiveness of Electronic Media on Utilization of Health Services in a Rural Setting**

I am pleased to inform you that on **08/04/2025**, the Uganda National Council for Science and Technology (UNCST) approved the above referenced research project. The Approval of the research project is for the period of **08/04/2025** to **08/04/2026**.

Your research registration number with the UNCST is **SS3705ES**. Please, cite this number in all your future correspondences with UNCST in respect of the above research project. As the Principal Investigator of the research project, you are responsible for fulfilling the following requirements of approval:

1. Keeping all co-investigators informed of the status of the research.
2. Submitting all changes, amendments, and addenda to the research protocol or the consent form (where applicable) to the designated Research Ethics Committee (REC) or Lead Agency for re-review and approval **prior** to the activation of the changes. UNCST must be notified of the approved changes within five working days.
3. For clinical trials, all serious adverse events must be reported promptly to the designated local REC for review with copies to the National Drug Authority and a notification to the UNCST.
4. Unanticipated problems involving risks to research participants or other must be reported promptly to the UNCST. New information that becomes available which could change the risk/benefit ratio must be submitted promptly for UNCST notification after review by the REC.
5. Only approved study procedures are to be implemented. The UNCST may conduct impromptu audits of all study records.
6. An annual progress report and approval letter of continuation from the REC must be submitted electronically to UNCST. Failure to do so may result in termination of the research project.

Please note that this approval includes all study related tools submitted as part of the application as shown below:

No.	Document Title	Language	Version Number	Version Date
1	COMMUNITY ENGAGEMENT PLAN	ENGLISH	N/A	
2	study Consent form FGD- Runyankole	Runyankole	1.2	20 January 2025
3	Study consent form FGD-English	ENGLISH	1.2	20 January 2025
4	Study Consent form Quant- Runyankole	Runyankole	1.2	20 January 2025
5	Study consent form Quant-English	ENGLISH	1.2	20 January 2025
6	Focused group discussion guide	ENGLISH	1.0	04 April 2024
7	QUESTIONAIRE	ENGLISH	1.0	04 April 2024
8	Project Proposal	English	1.2	
9	Approval Letter	English		
10	Administrative Clearance	English		

Yours sincerely,

Hellen Opolot
For: Executive Secretary
UGANDA NATIONAL COUNCIL FOR SCIENCE AND TECHNOLOGY

APPENDIX I: BUDGET

Item	details	Units	Freq.	Unit cost (UGX)	Total cost
Research assistants					
	Training for Research assistants	2	3	20,000	120,000
	Transport	2	5	50,000	500,000
	Field refreshments	2	5	5,000	50,000
	Allowance	2	5	30,000	300,000
Stationery and printing					
	Test Questionaries	200	1	100	20,000
	Final questionaries and FGD Guides	1500	1	100	150,000
	Notebooks	10	1	2,000	20,000
	Pens	1	1	6,000	6,000
Field allowance					-
Refreshments during FGDs	For FGDs during interviews	300	1	2,000	600,000
Transport costs	Between the facilities during data collection	4	1	200,000	800,000
Analysis support	soft ware	1	1	700,000	700,000
Internet data and airtime	For communication	6	1	50,000	300,000
Dissemination workshops	refreshments for attendant	10	3	20000	600,000
Other incidentals		1	1	500,000	500,000
Total					**4,666,000**

APPENDIX J: TIMELINE. OF ACTIVITIES

Activity	Jan-July 2023	Sept 2023	Aug.2023	Oct 2023	Nov 2023	Dec 2023	Jan 2024	Feb 2024	March 2024	April 2024	May 2024
Research topic selection and confirmationwith supervisor											
Proposal development											
Proposal defense and final corrections											
Data collection and analysis											
Final reporting and collection											
Clearance											