Conceptions and misconceptions about coronavirus in Uganda

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Abstract
The purpose of this phenomenological study was to clearly describe coronavirus concepts, and address misconceptions that abound about it in Uganda. A qualitative review of more than 40 articles on coronavirus, published between 2019 and 2021 was done. Results showed that the different myths and misconceptions about coronavirus are not true and misleading. The coronavirus concepts are scientifically testable and can be formulated with reasonable clarity.
The contribution of this study is: better understanding of conceptions and misconceptions about coronavirus in Uganda. The government of Uganda, through the ministry of health can plan awareness campaigns and interventions to prevent or change peoples' attitude and behaviour towards coronavirus, given the gravity of its impact. However, the findings of this study should be interpreted in the context of the potential limitations such as potential publication bias and inadequate capture of perspectives of the people about misconceptions surrounding the Covid-19 pandemic.

Keywords: coronavirus, pandemic, conceptions, misconceptions, Uganda

Introduction

To date, there is a lot of uncertainty and confusion surrounding the origin, spread, symptoms, causes, vaccination and treatment of coronavirus (WHO, 2021). These concerns often reflect false prophecy, misconceptions, sheer negligence and disobedience about the disease, that may easily upsurge infection and mortality rates in the diaspora. Coronavirus Disease 2019 (COVID-19) caused by SARS-CoV-2, a novel coronavirus, that emerged on December 1, 2019 in Wuhan City, Hubei Province, China (Huang *et al*, 2020) [16, 39] has been perceived differently, by different people in Uganda and the entire world. It is highly infectious, and there is no effective treatment method. The World Health Organization (WHO) declared the COVID-19 epidemic as an international public health emergency on January 30, 2020. The overall confirmed cases in China had reached 78,959, by the end of February 27, 2020, a total of 2,791 people had died of the disease and COVID-19 had also spread to almost all countries of the world (Akanni & Gabriel, 2020; WHO, 2020). As of August 20, 2021, the total number of confirmed cases across the globe was 209,876,613 with 4,400,284 deaths (WHO, 2021).

To prevent further dissemination of the virus, 31 Provinces in China Mainland had raised their public health response level to the highest state of emergency by January 29, 2020. The Chinese government implemented series of large-scale public health interventions to control the epidemic, many of which have far exceeded what International Health Regulations required, especially Wuhan lock-down, nationwide traffic restrictions and Stay at Home Movement. Wuhan had prohibited all transport in and out of the city on January 23, 2020, this may be the largest quarantine/movement restriction in human history to prevent infectious disease spread (Tian *et al*, 2020) [27]. Hundreds of millions Chinese residents, including 9 million Wuhan residents had to reduce and even stop their inter-city travel and intra-city activities due to these strict measures.

Internationally, most countries have placed various levels of restrictions on travel to and from China. As of February 19, 2020 international restrictions to China involved 99 countries in four forms: (1) border closures for partial or total closure of a land border with China, (2) entry or exit bans that generally restrict the ability of nationals to depart from their country for travel to China or the ability of foreign travelers and nationals to enter a country after traveling from or transiting through China, (3) visa restrictions that include total or partial visa suspensions or restrictions for travelers originating from or traveling through China, and (4) flight suspensions that include government bans on flights to or from China (WHO, 2020). However, amid the outbreak, countries Sweden, South Korea, Turkey, Texas, Florida, South Dokota, Arkansas, Iowa, Nebraska, North Dakota, Utah, and Wyoming and Tanzania among others declined to embrace lockdown.

Similarly, in a bid to control the spread of the epidemic, the President of the republic of Uganda His Excellency Yoweri Kaguta Museveni on March 18, 2020, with the approval of the National Task Force and the Cabinet, imposed multiple restrictions: Closed all the Educational Institutions; Suspended communal prayers in Mosques and Churches; Stopped all public political rallies; cultural gatherings or conferences; Banned Ugandans from moving to or through countries that had had a large number of corona cases; Discouraged the hexagonal, extravagant Ugandan-style weddings; Weddings were allowed only for a maximum of 7 people; Burials could not be postponed, but should be for a maximum of 10 people (close family members); Suspended weekly or monthly markets; Suspended all the discos, dances, bars, sports, music shows, cinemas and concerts; Stopped all passengers coming into Uganda by air, land or water; Closed Entebbe International Airport and all other border points of entry except for Cargo airplanes and trucks; Prohibited pedestrians from entry into the country from the neighboring countries; and suspended the shopping arcades,

hardware shops, except food shops (State of the Nation address, March 18, 2020).

In addition to the restrictions, the Ministry of Health put in place Standard Operating Procedures (SOPs) to be followed by everyone. They include; No bunching or crowding; always wear a mask while in Public or even at home if you are with strangers; ensuring social distancing of 4 meters from one another in public or even at home in case you receive new People who have not been part of the household recently; constantly washing your hands with water and soap or with alcohol-based sanitizers; never touch your nose, mouth or eyes with unwashed hands; and, in offices and other work places, always sanitize surfaces with alcohol based sanitizers as well as sterilizing documents with sterilizers that reach the temperature of 65^0 or beyond. On account of those tough measures, Uganda limited the spread of the infections and never had a single death from covid-19 until July 21, 2020. This was a period of about 126 days of battle with the Coronavirus without a single death (Ministry of Health, 2020).

Consequently, in his Presidential State of the Nation address, September 20, 2020, Mr. Museveni decided to relax the restrictions as follows: Re-open schools for the candidate classes of P-7, S-4, S-6, finalists in tertiary colleges and finalists in universities. The International Airport and Land borders will now be opened for tourists, coming in and going out, provided they tested negative 72 hours before arrival in Uganda. Restrictions on movements on border districts are hereby lifted. Curfew, from 2100 hours (9 p.m.) to 6 a.m., will be maintained; but for the motorcycle riders (boda-bodas), their movements must always end at 1800 hours (6 p.m). The places of worship, should open with a maximum number of 70 followers and observe all the00 SOPs. Open air activities of sports will re-open provided there are no spectators and the players are tested for Covid-19, 72 hours before. While casinos, gaming centers, cinemas and bars remain closed (Presidential State of the Nation address, September 20, 2020).

However, in his state of the nation address on Covid-19 of June 6, 2021, the president of the republic of Uganda *lamented in desperation that many people spurred on by the false prophets, misconceptions, negligence and disobedience never bothered to adhere to the guidelines. We are now harvesting more sickness and even more deaths; yet God had shielded us from the deaths until the 21st of July, 2020. Today, Uganda has registered a total of 68,778 infections, with 542 deaths.* He further stressed that, provided the SOPs are strictly followed at the group and personal levels, the virus could be contained. With this emphasis, he reinstated all the restrictions such as closing of all educational Institutions; suspension of communal prayers in mosques and churches, banned all cultural gatherings and or conferences, banned Ugandans from moving to or through countries that had had a large number of corona cases, discouraged the hexagonal, extravagant Ugandan-style of weddings-allowing only a maximum of 7 people; suspended weekly or monthly markets; Suspended all the discos, dances, bars, sports, music shows, cinemas and concerts (Elias, 2021) [11].

Despite the various restrictions and directives put in place by authorities to curb the spread of Covid-19 pandemic, coronavirus has remained a big threat to the entire human life and is currently the leading cause of deaths in the world (WHO, 2020). According to Johns Hopkins Center for systems Science Engineering, as of January 10, 2021, there are a total of 90,086,549 cases of coronavirus infections worldwide, 64,469,156 recovered cases and 1,934,939 deaths within a period of one year (JHU CSSE, 2020). In Africa, there are 2,95,109 confirmed cases, with 2,414,219 recoveries and 70,553 deaths. In East Africa, there are 306,252 cases of infection, 95,274 recovered cases and 5,769 deaths (WHO, 2020). While Uganda in particular has registered 37,554 cases, 12,720 recoveries and 301 deaths. Worse still, of late, Uganda registers 44 cases of infection per day (Aceng, 2020). By June 2021, Uganda registered 825 new infections daily. As of August 20, 2021, Uganda registered a total of 68,778 infections, with 542 deaths. The total number of confirmed cases across the globe was 209,876,613 with 4,400,284 deaths (WHO,2021). This status quo is worrying, unless this trend is dramatically reversed, more and more people will succumb to the disease (JHU CSSE, 2020). No one knows whether this is because of spurred false prophets and misconceptions about the disease.

Previous research on Covid-19 have focused on socio-economic effects of the pandemic (Tian *et al*., 2020; International Trade Centre, 2020; Olema and Tsuma, 2020; University of International Business and Economics, 2020; Dahab, 2020; and Luohan Academy, 2020) [27, 17, 34]. For example, Olema and Tsuma (2020) examined the Impact of Coronavirus Lockdown on Small Scale Businesses in Uganda, noting that coronavirus lockdown has a mammoth effect on small businesses. Specifically, business revenue loss, loss of customers, deterioration of perishable items and increased transaction costs. Other studies have focused on the impact of health systems on coronavirus management (Yin *et al*., 2019; Viceisza, 2020; Government of Zimbabwe, 2020; Austrian, 2020; Kucharski *et al*., 2020) [41, 35, 15, 35, 19]. For instance, Austrian (2020) [1] investigated the impact of health systems on surveillance and control of Covid-19, and opined that fragile health systems will exacerbate the impact of the outbreak and limit the ability to conduct adequate surveillance and control of the disease. Xiao *et al*., (2020) [39], in China reviewed current directions, conceptions and viewpoints on Covid-19. Nevertheless, it is important to note that none of these studies specifically examined conceptions and misconceptions about coronavirus from a developing country perspective like Uganda. The gap this study seeks to address.

The drive of this phenomenological study is to clearly describe coronavirus concepts, and address misconceptions that abound about it in Uganda. Misinformation is rampant during times of trouble. A good way to deal with fake news is to arm yourself with the facts and educate others.

The central question of the study is: How can the common misconceptions about coronavirus be addressed? The sub questions are: Can the myths and misconceptions surrounding coronavirus be clearly described? How can the myths and misconceptions be conceptually addressed? And do the misconceptions about coronavirus explain the increasing number of infections and deaths?

Materials and Methods
This study used a qualitative review of 45 empirical studies on coronavirus, published between 2019 and 2021. Copies of the articles were accessed on line. All the materials accessed were read an initial time. During this initial reading, we made note of the common misconceptions

surrounding coronavirus, and sources mentioned that seemed to appear most frequently in the set of articles as a whole. Based on the findings of the initial reading, a data collection sheet was designed, and each of the applicable articles were read a second time and analyzed for specific information. On completion of the second reading, information about each article was recorded on the data collection sheet. The data collection sheet included identifying information such as the article title and the publication date.

Last, from the articles, we identified the following misconceptions: 1) Coronavirus and influenza virus are the same thing. 2) The virus was created in a laboratory, with 5G tech spreading it. 3) Young people can't get the coronavirus. 4) Eating garlic prevents covid-19. 5) Drinking alcohol can help prevent covid-19. 6) Coronavirus cannot survive in Africa's warm climate. 7) Wearing a face mask will protect you from getting infected. 8) Vitamin C tablets can cure coronavirus. 9) Covid-19 vaccine can affect women's fertility, researchers rushed the development of the COVID-19 vaccine, so its effectiveness and safety cannot be trusted, getting the COVID-19 vaccine gives you COVID-19, the side effects of the COVID-19 vaccine are dangerous, and the COVID-19 vaccine enters your cells and changes your DNA.

Conceptual precision: coronavirus is not influenza virus, coronavirus was not created in a laboratory and is not spread by 5g tech, coronavirus affects people of all ages, eating garlic does not prevent covid-19, drinking alcohol cannot help prevent covid-19, coronavirus survives in all climates including that of Africa and vitamin c tablets cannot cure coronavirus and the covid-19 vaccine had to gone through the strict process of clinical trials and safety reviews by respective global and national stringent regulatory authorities (WHO,2021) as discussed in next section.

Results and Discussion
Coronavirus and Influenza Virus Are the Same Thing.

As the COVID-19 outbreak continues to evolve, comparisons have been drawn to influenza. Many people think that COVID-19 and influenza viruses have a similar disease presentation. That is, they both cause respiratory disease, which presents as a wide range of illness from asymptomatic or mild through to severe disease and death. People claim that both viruses are transmitted by contact, droplets and fomites. As a result, the same public health measures, such as hand hygiene and good respiratory etiquette are important actions all can take to prevent infection (WHO, 2020).

The first misconception to clear up is that coronavirus is the same thing as influenza virus. Though both cause respiratory disease, there are important differences between the two viruses and how they spread. This has important implications for the public health measures that can be implemented to respond to each virus. The speed of transmission is an important point of difference between the two viruses. Influenza has a shorter median incubation period and a shorter serial interval than coronavirus. The serial interval for coronavirus is estimated to be 5-6 days, while for influenza virus, the serial interval is 3 days. This means that influenza can spread faster than COVID-19. Transmission in the first 3-5 days of illness, or potentially pre-symptomatic transmission is a major driver of transmission for influenza. The reproductive number – the number of secondary infections generated from one infected individual – is understood to be between 2 and 2.5 for COVID-19 virus, higher than for influenza. However, estimates for both COVID-19 and influenza viruses are very contextual and time-specific, making direct comparisons more difficult (WHO, 2020).

Furthermore, children are important drivers of influenza virus transmission in the community. For COVID-19 virus, initial data indicates that children are less affected than adults and that clinical attack rates in the 0-19 age group are low. More preliminary data from household transmission studies in China suggest that children are infected from adults, rather than vice versa. Those most at risk for severe influenza infection are children, pregnant women, elderly, those with underlying chronic medical conditions and those who are immunosuppressed. For COVID-19, our current understanding is that older age and underlying conditions increase the risk for severe infection. Mortality for COVID-19 appears higher than for influenza, especially seasonal influenza. While the true mortality of COVID-19 will take some time to fully understand, the data we have so far indicate that the crude mortality ratio is between 3-4%, the infection mortality rate will be lower. For seasonal influenza, mortality is usually well below 0.1%. However, mortality is to a large extent determined by access to and quality of health care (WHO, 2020).

The Virus Was Created in a Laboratory, with 5G Tech Spreading It.

As the virus speeds around the globe, conspiracy theories about its origins have followed. According to Pew Research Center (2020), 3 in 10 Americans believe COVID-19 was created by humans in a laboratory, by the 5G mobile networks (fifth generation communication technologies). This idea led arsonists in England to attack 5G masts, and caused major tech companies to ban adverts and social posts linking the pandemic to high-speed networks (BBC, 2020; Callegari et al., 2020).

Conceptually, coronavirus was not created in a laboratory and is not spread by 5G tech. Viruses cannot travel on radio waves/mobile networks. COVID-19 is spreading in many countries that do not have 5G mobile networks. A study conducted by Chu et al., (2020) confirmed through genetic analysis established that SARS-CoV-2 (the official name of the coronavirus) was not man-made and did in fact originate in animals. Coronaviruses are a large family of viruses that are common in many different species, including camels, cattle, cats, and bats. In 1937, coronaviruses were first identified as an infectious bronchitis virus with which birds suffered that could devastate poultry stocks. Today, the viruses are the cause of the common cold in 15% to 30% of all cases. In the past 70 years, researchers have found camels, cattle, cats, dogs, horses, mice, pigs, rats and turkeys infected with coronaviruses.

Additionally, it was reported that 27 of the first 41 infected patients had been exposed to the Huanan Seafood Market (Huang et al., 2020) [16, 39]. Thus, it was believed that the new coronavirus originated from the Huanan Seafood Market in Wuhan and spread from animal hosts to humans in the process of wildlife trade, transportation, slaughter, and trade. It was established that Bats have the most variety of coronaviruses in their bodies and are the hosts of many kinds of coronaviruses, such as the SARS-CoV-2 and the MERS-CoV (Cui et al., 2020). The SARS-CoV-2 and the

MERS-CoV are considered highly pathogenic, and it is very likely that the SARS-CoV-2 was transmitted from bats to palm civets and the MERS-CoV was transmitted from bats to dromedary camels and finally to humans (Guan *et al*.,2020). Given the high sequence similarity between the SARS-CoV-2 and the SARS-like bat CoVs from *Hipposideros* bats in China, the natural host of the SARS-CoV-2 may be the *Hipposideros* bat. The discovery that pangolin coronavirus genomes have 85.5% to 92.4% sequence similarity to SARS-CoV-2 suggests pangolins should be considered as possible hosts in the emergence of SARS-CoV-2 (Salata *et al*., 2019).

Young People Can't Get the Coronavirus
Some argue that COVID-19 affects only the elderly, for example, people in their 50s are at higher risk for severe illness than people in their 40s. People in their 60s or 70s are in general, at higher risk for severe illness than people in their 50s. The greatest risk for severe illness from COVID-19 is among those aged 85 or older. The current understanding is also pointing to the underlying conditions such as liver disease, kidney, diabetes, heart conditions, people who smoke, pregnant women, the immunosuppressed, for example, cancer patients and those with chronic diseases increase the risk for severe infection (CDC, 2020).

Explicitly, ccoronavirus affects people of all ages. Adults of all ages can contract COVID-19. According to Center for Disease Control and Prevention in America, while the risk of serious complications and death is higher in older age groups of 60 and older, younger people are becoming infected with coronavirus and getting sick. About 38% of individuals hospitalized because of the virus are between 20 and 54 years old. The battle against misinformation has led some cities to turn to popular social media platforms like TikTok to reach the Generation Z population (ages 16 to 24). This m00ove was specifically aimed at quelling the misconception that only older people are at risk of contracting COVID-19 (CDC, 2020). Thus, WHO advises people of all ages to take steps to protect themselves from the virus, for example by following good hand and respiratory hygiene.

Eating Garlic Prevents Covid-19
Uncertainty creates fear, and in this uncertain time fear will lead to grasping onto a hope that anything will help and that there may be a magic cure out there. Garlic, called Allium Sativum – Bulbus in Latin, belongs to the Allium family which also includes onions, leeks and chives. Garlic is a healthy food that may have some antimicrobial properties (Vasodilator, Decongestant, Anti-cholesterol, Anti-bacterial, Anti-fungal, Anti-viral). Traditionally garlic was used as herbal remedy for gastric disturbances, cleansing the lining of the gut and stimulating liver detoxification. Volatile oils prepared from the bulbs can also act as a decongestant and soothe the bronchioles and alveoli of the lungs clearing unwanted mucous (Ghang, 2019).

Although garlic has some anti-microbial properties, there is no evidence that it can prevent Covid-19. It is a popular remedy for helping to boost the immune system. It has been shown to have germ-fighting properties but the research is very preliminary (Ministry of Health, Uganda, 2020). Eating garlic won't keep the virus away but it will help in social distancing. This virus is new and different from other strains. We need a vaccine that is developed specifically for the virus.

Drinking Alcohol Can Help Prevent Covid-19
There has been a myth that drinking alcohol will prevent the virus. For instance, the media in South Africa have been reporting on false claims that drinking alcohol can help prevent the COVID-19 disease (Neelaveni & Lisa, 2020). Its possible for high concentrations of alcohol, such as 60-90% to kill some forms of bacteria and viruses. However, alcohol kills viruses on the skin, not in the body (WHO, 2020). Drinking alcohol, such as beer, liquor, wine doesn't help prevent coronavirus at all. Instead, excessive drinking of alcohol can be harmful to your body. Ethyl alcohol (ethanol) is the substance in alcoholic beverages that is responsible for most of the harms that arise from their consumption, irrespective of whether it is consumed in the form of wine, beer, spirits or anything else. As reported by several news outlets, more than 190 people in Iran died of "bootleg" alcohol consumption, possibly related to the belief that drinking alcohol could prevent the COVID-19 infection (WHO, 2020). Importantly, the alcohol people drink is not the same as the alcohol that is in the sanitizer. It ranges up to 40% while hand sanitizers are 60% and above. Alcohol consumption is likely to increase the health risks if a person becomes infected with the virus, instead wash your hands regularly, wear masks, and avoid being close to those with a fever and cough to prevent Covid-19 (Neelaveni & Lisa, 2020).

Wearing a Face Mask Will Protect You from Getting Infected.
Since the first outbreaks began in the United States, the use of face masks by the general public has been a highly debated and deeply confusing topic. After initially claiming that only medical professionals needed to wear face masks, the Center for Disease Control and Prevention (CDC) issued an about-face and updated its stance, advising everyone to wear cloth face coverings in public settings where other social distancing measures are difficult to maintain, such as in grocery stores or pharmacies. Wearing cloth face coverings is especially important in coronavirus hot spots (CDC, 2020).

However, the purpose of masks isn't to prevent healthy people from becoming infected with the coronavirus: Only medical-grade face masks (the N95 or N100 models that should be reserved for healthcare workers and other medical first responders) can filter out a high enough percentage of airborne viral particles, says Bruce Y. Lee, MD, a professor of health policy at CUNY School of Public Health in New York City and the founder of Public Health Informatics Computational Operations Research (PHICOR). The main benefit of cloth face coverings for the general public is to prevent people who are already infected from spreading the coronavirus through respiratory droplets from the nose and mouth.

Coronavirus cannot survive in Africa's warm climate
Some people do assert that COVID-19 will also "miraculously go away" in the warmer months. This myth arose after research, which hadn't been peer reviewed, pointed to temperature having a role in the survival of the virus. One of the most widely quoted sources was John Nicholls, a pathology professor at Hong Kong university

who said that "in cold environments, there is longer virus survival than warm ones". This claim, however, was not based on verified research. It was nevertheless seized on as proof that the virus cannot thrive in Africa's warm climate (Neelaveni & Lisa, 2020). Health experts are careful to say that any decreases will likely be minimal. "Other coronaviruses have seasonality, so there might be some reduction," says Dr. Adalja, adding that there's no way to know for sure if this is the case with the coronavirus behind COVID-19.

According to the WHO, the virus can be transmitted to all areas, even hot and humid countries. The only continent that has no cases of COVID-19 is Antarctica. This could change. While we may expect modest declines in the contagiousness of SARS-CoV-2 in warmer, wetter weather and perhaps with the closing of schools in temperate regions of the Northern Hemisphere, it is not reasonable to expect these declines alone to slow transmission enough to make a big dent (Director of the Center for Communicable Disease Dynamics at the Harvard T.H. Chan School of Public Health, 2020).

Vitamin C Can Cure Coronavirus
Vitamin C, also known as ascorbic acid, is currently making headlines in the fight against COVID-19. There are several theories about how intravenous (IV) vitamin C may help treat COVID-19: Very high vitamin C levels may create free radicals that destroy viruses and bacteria. Our body's cells have defences against these free radicals, but viruses do not. Another possibility is IV vitamin C renews the body's antioxidant protection (Ceraolo, 2020). Serious infections can use up our body's vitamin C and other antioxidants very quickly. Reports say that intravenous (IV) vitamin C may help people suffering from this disease. Recently, IV vitamin C clinical trials began in China and Italy (Linus Pauling Institute, 2020). Doctors in hard-hit areas of the United States are now reporting using it. Furthermore, IV vitamin C appears in some COVID-19 critical care guidelines, like at the Eastern Virginia Medical School. Although doctors are using IV vitamin C, there is no published scientific evidence about the use of IV vitamin C in COVID-19. Therefore, we cannot fully evaluate its effectiveness (Baruah *et al*., 2020) [4].

According to Liu *et al*., there is no cure for COVID-19 currently but experts are working on it. Vitamin C is a known anti-oxidant. It prevents damage to tissue in the body by neutralizing free radicals, which are charged particles that cause damage to cells and tissues and result in inflammation. Vitamin C is also known to protect against pathogens. At present, drugs that inhibit viral spread and destroy viral replication, such as an anticoagulant, namely dipyridamole may be used to reduce the direct cytopathic effects induced by 2019-nCoV (Liu *et al*., 2020) [21, 40]. In addition, high doses of vitamin D3 may be effective in individuals with COVID-19 by attenuating the rate of viral replication. A previous report found that cepharanthine (CEP), selamectin and mefloquine hydrochloride are potential drugs for the treatment of 2019-nCoV infection but not Vitamin C Tablets (Yao *et al*., 2020) [40].

Researchers Rushed the Development of the COVID-19 Vaccine, So Its Effectiveness and Safety Cannot Be Trusted.
As COVID-19 vaccine programs continue to roll out

globally, we are seeing the myths around the vaccines also increasing. For instance, COVID-19 vaccines are not safe because they were developed so quickly, Covid-19 vaccine can affect women's fertility, getting the COVID-19 vaccine gives you COVID-19, the side effects of the COVID-19 vaccine are dangerous, and the COVID-19 vaccine enters your cells and changes your DNA.

According to the Medical Director of international SOS Health Experts, Sydney Doctor Irene Lai, the worldwide impact of this pandemic has caused the pharmaceutical industry to invest heavily in researching and producing COVID-19 vaccines. Likewise, unprecedented scientific collaborations have allowed COVID-19 vaccine research, development, and authorizations to be completed in record time to meet the urgent need for COVID-19 vaccines while maintaining high safety standards (Lai, 2021) [20].

Furthermore, several phases were conducted in parallel, thus shortening the overall development timeline. No shortcut was taken; every vaccine candidate had to go through the strict process of clinical trials and safety reviews by respective global and national Stringent Regulatory Authorities. There are strict protections in place to help ensure the safety of all COVID-19 vaccines. Before receiving validation from WHO and national regulatory agencies, COVID-19 vaccines must undergo rigorous testing in clinical trials to prove that they meet internationally agreed benchmarks for safety and effectiveness. As with all vaccines, WHO and regulatory authorities will continuously monitor the use of COVID-19 vaccines to confirm that they remain safe for all who receive them (WHO, 2021).

As concerns the vaccine can affect women's fertility, getting the COVID-19 vaccine gives you COVID-19, the side effects of the COVID-19 vaccine are dangerous, and the COVID-19 vaccine enters your cells and changes your DNA. The COVID-19 vaccine will not affect fertility. The truth is that the COVID-19 vaccine encourages the body to create copies of the spike protein found on the coronavirus's surface. This "teaches" the body's immune system to fight the virus that has that specific spike protein on it. Confusion arose when a false report surfaced on social media, saying that the spike protein on this coronavirus was the same as another spike protein called syncitin-1 that is involved in the growth and attachment of the placenta during pregnancy. The two spike proteins are completely different and distinct, and getting the COVID-19 vaccine will not affect the fertility of women who are seeking to become pregnant, including through in vitro fertilization methods (Lai, 2021) [20].

According to WHO (2021) the side effects of the COVID-19 vaccine are not dangerous. The WHO Global Advisory Committee on Vaccine Safety (WHO GACVS) has found that the AstraZeneca COVID-19 vaccine (Vaxzevria and Covishield) is effective at preventing serious side effects of COVID-19 infection that can cause hospitalization and death. The most common side effects from the vaccine are mild to moderate that usually resolve in a few days. The most serious side effects are very rare but can cause blood clots with low platelets. Recent data from the UK suggests the risk these serious sides effects is approximately four cases per million adults (1 case per 250 000) who receive the vaccine. The WHO GACVS has also stated that the benefits of vaccination are far greater than the risk of the rare side effect. In addition to the benefits in preventing

severe disease and death due to COVID-19, the vaccine offers protection against overall COVID-19 and complications from 'long COVID' and death, potential protection for close contacts and the community by preventing transmission, and a risk reduction of severe disease from some variant strains of the virus (WHO, 2021). Furthermore, according to Gabor David Kelen, the Managing Director of the U.S. Food and Drug Administration, the Pfizer and Moderna COVID-19 vaccines can have side effects, but the vast majority are very short term-not serious or dangerous. The vaccine developers report that some people experience pain where they were injected; body aches; headaches or fever, lasting for a day or two. These are signs that the vaccine is working to stimulate your immune system (Gabor, 2021) [13].

As patens the issue of the COVID-19 vaccine entering your cells and changes your DNA, the fact is COVID-19 vaccines are designed to help your body's immune system fight the coronavirus. The messenger RNA from two of the first types of COVID-19 vaccines does enter cells, but not the nucleus of the cells where DNA resides. The mRNA does its job to cause the cell to make protein to stimulate the immune system, and then it quickly breaks down-without affecting your DNA. The first vaccines in use contain messenger RNA (mRNA), which instructs cells to make the "spike protein" found on the new coronavirus. When the immune system recognizes this protein, it builds an immune response by creating antibodies-teaching the body how to protect against future infection. The mRNA never enters the nucleus of the cell, which is where our DNA (genetic material) is kept. The body gets rid of the mRNA soon after it's finished using the instructions (Gabor, 2021) [13].

Conclusion and Recommendations
The drive of this phenomenological study was to clearly describe coronavirus concepts, and address misconceptions that abound about it in Uganda. Misconceptions about coronavirus were addressed by conceptual precision. This was done by analyzing empirical studies from 45 articles on coronavirus disease, which demonstrated that the different misconceptions (influenza virus are the same thing, the virus was created in a laboratory, with 5G tech spreading it, young people can't get the coronavirus, eating garlic prevents covid-19, drinking alcohol can help prevent covid-19, coronavirus cannot survive in Africa's warm climate and vitamin C tablets can cure coronavirus) about the disease are not true and misleading.

Empirical and scientific findings have established that coronavirus is not influenza virus, coronavirus was not created in a laboratory and is not spread by 5g tech, coronavirus affects people of all ages, eating garlic does not prevent covid-19, drinking alcohol cannot help prevent covid-19, coronavirus survives in all climates including that of Africa and vitamin c tablets cannot cure coronavirus and the worldwide impact of this pandemic caused the pharmaceutical industry to invest heavily that allowed COVID-19 vaccine research, development, and authorizations to be completed in record time to meet the urgent need for COVID-19 vaccines while maintaining high safety standards. In sum, coronavirus concepts are scientifically testable and can be formulated with reasonable clarity. Based on the scientific findings; we belief that the spurred false prophecy, misconceptions, sheer negligence and disobedience about the disease are responsible for the

increasing number of infections and deaths in the country.
We therefore strongly recommend that each and every one should observe the Standard Operating Procedures (SOPs) put in place by the Ministry of Health such as: no crowding, always wearing a mask while in Public, ensuring social distancing of 4 meters from one another in public, constantly washing hands with water and soap or with alcohol-based sanitizers, and always sanitize surfaces with alcohol based sanitizers and people should not hesitate to get Covid-19 vaccination so as to prevent, reduce infections and mortality rates.

The findings of this study have both theoretical and managerial contributions. Theoretically, the results of this study will add knowledge on the Covid-19 pandemic. Researchers can also use the study as a source of reference in further research. Examining the conceptions and misconceptions about coronavirus using qualitative review of seminal studies can make us better understand the concepts surrounding the disease. From management point of view, the government of Uganda, through the ministry of health, and the Covid-19 Task force can plan awareness campaigns and interventions to prevent or change peoples' attitude and behavior towards coronavirus, given the gravity of its impact.

Limitations
Findings of this study should be interpreted in the context of the potential limitations of the study. First and foremost is potential publication bias; this study was strained in the only published reports and studies reviewed. Consequently, misconceptions about coronavirus by people may not have been adequately captured or reported. Lastly, in all qualitative studies, findings may be influenced by the perspectives of the investigators.

References
1. Austrian K, Pinchoff J, Tidwell JB, White C, Abuya T, Kangwana B *et al*. COVID-19 related knowledge, attitudes, practices and needs of households in informal settlements in Nairobi, Kenya, 2020. doi: http://dx.doi.org/10.2471/BLT.20.260281.
2. Aceng R. Ministry of Health, Uganda, 2020.
3. Akanni L, Gabriel S. The Implication of Covid19 on the Nigerian Economy. Centre for the Study of the Economies of Africa (CSEA), 2020.
4. Baruah V, Bose S. Immunoinformatics-aided identification of T cell and B cell epitopes in the surface glycoprotein of 2019-nCoV. J Med Virol,2020:92:495-500.
5. Calligari P, Bobone S, Ricci G, Bocedi A. Molecular investigation of SARS-CoV-2 proteins and their interactions with antiviral drugs. Viruses,2020:12(445).
6. Ceraolo C, Giorgi FM. Genomic variance of the 2019-nCoV coronavirus. J Med Virol,2020:92:522-528.
7. Center for Disease Control and Prevention Medical professionals needed to wear face masks to prevent Covid -19, 2020.
8. Cui S, Chen S, Li X, Liu S, Wang F. Prevalence of venous thromboembolism in patients with severe novel coronavirus pneumonia. J Thromb Haemost,2020:18:1421-1424.
9. Chu H, Chan JF, Wang Y, Yuen TT, Chai Y, Hou Y *et al* Comparative replication and immune activation Profiles of SARS-CoV-2 and SARS-CoV in human

lungs: An ex vivo study with implications for the pathogenesis of COVID-19. Clin Infect Dis. 71:1400–1409.

10. Dahab M, Van Zandvoort K, Flasche S *et al*. Health in Humanitarian Crises Centre. Available from: https://www.lshtm.ac.uk/research/centres/102976.

11. Elias B. (2021, June Sunday). Uganda Re-imposes Lockdown to Beat Back COVID-19 Cases Surge. The New Vision, pp. 2-3.

12. Fan HH, Wang LQ, Liu WL, An XP, Liu ZD, He XQ*et al*: Repurposing of clinically approved drugs for treatment of coronavirus disease, 2019.

13. Gabor D. COVID-19 Vaccines: Myth Versus 0000000Fact. New York: U.S. Food and Drug Administration, 2021.

14. Guan GW, Gao L, Wang JW, Wen XJ, Mao TH, Peng SW *et al*. Exploring the mechanism of liver enzyme abnormalities in patients with novel coronavirus-infected pneumonia. Zhonghua Gan Zang Bing Za Zhi,2020:28:100-106.

15. Government of Zimbabwe. Public Health (COVID-19 Prevention, Containment and Treatment) Order, 2020. Harare, Zimbabwe, 2020 28th March 2020.

16. Huang Chaolin, Wang Yeming, Li Xingwang, *et al*. (2020). Clinical features of patients infected with, 2019 novel coronavirus in Wuhan, China. The Lancet,20019-2020:395(10223):497-506.

17. International Trade Centre. Supporting the competitiveness of micro, small and medium-sized enterprises (MSMEs), 2020.

18. Johns Hopkins Center for systems Science Engineering database, 2020 Johns Hopkins University and Medicine. urihttps://coronavirus.jhu.edu.

19. Kucharski Adam J, Russell Timothy W, Diamond Charlie, *et al*. (2020). Early dynamics of transmission and control of COVID-19: a mathematical modelling study. MedRxiv, doi: https://doi.org/10.1101/2020.01.31.20019901.

20. Lai I. COVID-19 Vaccination Myths Vs. Facts. Sydney: International SOS Health Experts, 2021.

21. Liu J, Zheng X, Tong Q, Li W, Wang B, Sutter K *et al*. (2020): Overlapping and discrete aspects of the pathology and pathogenesis of the emerging human pathogenic coronaviruses SARS-CoV, MERS-CoV, and 2019-nCoV. J Med Virol. 92:491-494.

22. Liu Y, Yang Y, Zhang C, Huang F, Wang F, Yuan J *et al* Clinical and biochemical indexes from 2019-nCoV infected patients linked to viral loads and lung injury. Sci China Life Sci,2020:63:364-374.

23. Liu X, Li Z, Liu S, Sun J, Chen Z, Jiang M *et al* Potential therapeutic effects of dipyridamole in the severely ill patients with COVID-19. Acta Pharm Sin B,2020:10:1205-1215

24. Salata C, Calistri A, Parolin C, Palu G. Coronaviruses: A paradigm of new emerging zoonotic diseases. Pathog Dis, 2019, 77(6).

25. Shi S, Tanaka S, Ueno R, Gilmour S, Tanoue Y, Kawashima T *et al*. Impact of travel restrictions on importation of novel coronavirus infection: An effective distance approach. Bull World Health Organ, 2020. doi: http://dx.doi.org/10.2471/BLT.20.255679

26. Tian Huaiyu, Liu Yonghong, Li Yidan *et al*. Early evaluation of transmission control measures in response to the 2019 novel coronavirus outbreak in China.

MedRxiv, doi: https://doi.org/10.1101/2020.01.30.20019844.

27. Tian S, Hu W, Niu L, Liu H, Xu H and Xiao SY (2019): Pulmonary pathology of early-phase novel coronavirus (COVID-19) pneumonia in two patients with lung cancer. J Thorac Oncol,2020:15:700-704.

28. Museveni YK. The New vision, A national newspaper, Uganda, 2020, 3.

29. Museveni YK. Daily Monitor, A national newspaper, Uganda, 2020, 7.

30. Museveni YK. The New vision, Thursday March 19, 2020 pp.6. A national newspaper, Uganda, 2020, 6.

31. Museveni YK. Daily Monitor, Thursday March 19, 2020 pp. 10. A national newspaper, Uganda, 2020, 6.

32. Olema H. The impact of Coronavirus Lockdown on Small Scale Business in Arua Municipality, Uganda. International Journal of Science and Research (IJSR), 2019. https://doi:10.21275/SR20817155905.

33. Pew Research Center fifth generation communication technologies, 2020.

34. University of International Business and Economics, 2020.

35. Viceisza A, Aflagah K, Abner J, *et al*. (2020) Poverty and Malnutrition in Zimbabwe: Findings from Matabeleland North Province. Washington DC: USAID, 2020.

36. WHO Ebola Response Team. Ebola virus disease in West Africa – the first 9 months 1of the epidemic and forward projections. N Engl J Med,2014:371:1481-1495. doi:10.1056/NEJMoa1411100.

37. WHO. The 12 Common Myths and Misconceptions About COVID-19 Vaccination. Geneva, Switzerland: World Health Organization, 2021.

38. World Health Organization. Home care for patients with COVID-19 presenting with mild symptoms and management of their contacts. Geneva, Switzerland: WHO, 2020.

39. Xiao Y, Dai Z, Huang J, Chen Y. A simple model to assess Wuhan lock-down effect and region efforts during COVID-19 epidemic in China Mainland. Bull World Health Organ, 2020. E-pub: doi: http://dx.doi.org/10.2471/BLT.20.254045

40. Yao XH, Li TY, He ZC, Ping YF, Liu HW, Yu SC *et al* A pathological report of three COVID-19 cases by minimally invasive autopsies. Zhonghua Bing Li Xue Za Zhi,2020:49:411-417.

41. Yin X, Wang J, Feng J, Chen Z, Jiang N, Wu J *et al*. The Impact of the Corona Virus Disease Outbreak on Chinese Residents' Mental Health. Bull World Health Organ, 2019. E-pub: doi: http://dx.doi.org/10.2471/BLT.20.258475

42. Zhang W, Du RH, Li B, Zheng XS, Yang XL, Hu B *et al*. Molecular and serological investigation of 2019-nCoV infected patients: Implication of multiple shedding routes. Emerg Microbes Infect,2020:9:386-389.