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UNIVERSITY OF WITWATERSRAND, JOHANNESBURG FACULTY OF HEALTH SCIENCES SCHOOL OF PATHOLOGY

Understanding barriers and motivators of Covid-19 vaccine uptake among young people in Soweto, South Africa

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Abstract

Introduction

The SARS-CoV-2 novel human coronavirus is the cause of coronavirus disease (Covid-19) Covid-19 is coupled with common symptoms such as fever or chills, dry cough and tiredness. Less common symptoms include muscle or body aches, the new loss of taste or loss of infection. Vaccines are the most effective public health intervention that could protect individuals and the community from the severity of Covid-19. Several vaccine candidates have shown good safety and efficacy during recent randomized clinical trials, and seven of which have been rolled out to different African counties with over 1 million doses administered.

In south Africa there has been a low uptake of the Covid-19 vaccine particularly among the youth, despite studies showing positive attitudes towards vaccination. The youth play an important role in the pandemic as they are a crucial source for the spread of the virus to more vulnerable populations. Understanding the barriers and motivations towards vaccine uptake in this population group will assist in implementing interventions targeted specifically for the youth.

Aim

The aim of this study is to understand the barriers and motivations towards vaccine uptake among the youth aged 18-35 in Soweto, South Africa.

Methodology

This is a qualitative exploratory study approach employing focus group discussions. Eight focus group discussions with both male and female participants between the ages of 18 and 35 took place in two study sites, Themb'Elihle and Meadowlands South Africa. A total of 62 participants were enrolled in the study. The Health Belief Model theoretical framework served as a guide for this investigation. Themes were developed through thematic qualitative analysis and the data collected was examined and interpreted with the use of qualitative software ATLAS.ti.

Results

The study found that young adults do experience barriers and motivations that determine their decision to get vaccinated against Covid-19 or not. Misinformation was among the strongest barriers to vaccination. The spread of rumors and conspiracies of the vaccines left participants feeling scared to be vaccinated. This led to the lack of trust in health care professionals, and the lack of trust in governmental authorities leading the vaccines rollout. Motivation to vaccinate came as a result of the need to protect themselves and loved ones. Participants were also willing to vaccinate as a means to reintegrate back into society and to access basic means that were previously restricted due to the Covid-19 pandemic.

Conclusion

The results of this study demonstrate that motivations and barriers that young adults in Soweto, South Africa encounter have a significant impact on their decision to get immunized. Policymakers are encouraged to look into the challenges faced by this group, with a focus on how social media can be used as a useful tool for reaching out to young adults and spreading correct information.

Kay words; COVID-19, Vaccination, motivations, barriers

List of Acronyms

CDC- Centre for disease control

COVAX- COVID-19 Vaccines Global Access

CHAMPS- Child Health and Mortality Prevention Surveillance

Covid-19- Coronavirus diseases 2019

FDG- Focus group discussions

HBM- Health Belief Model

HIV- Human immunodeficiency virus

HPV – Human Papilloma Virus

NICD- National Institute of Communicable Diseases

STATSSA- Statistics South Africa

STHDSS- Soweto-Thembelihle Health Demographic Surveillance System

WHO- World Health Organization

VIDA- The Vaccines and Infectious Diseases Analytics

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CHAPTER ONE: INTRODUCTION

Background

The SARS-CoV-2 novel human coronavirus is the cause of coronavirus disease 2019 (Covid-19). Covid-19 is coupled with common symptoms such as fever or chills, dry cough and tiredness (Koirala et al., 2020). Less common symptoms include muscle or body aches and the new loss of taste. The fast rate of virus transmission, the prevalence of individuals with mild symptoms, and so-called "superspreading" events may all contribute to the disease's rapid spread (WHO, 2020a). The recommended preventative measures for the disease include wearing of face masks, social distancing, hand sanitizing and practicing self-quarantine when suspected of infection (Kamacooko et al., 2021).

Covid-19 has spread throughout the world since it was first discovered in Wuhan, China, in December 2019 (Li et al., 2020), and on March 11 of 2020, the World Health Organization's (WHO) emergency committee proclaimed it to be a worldwide emergency based on the number of new infections (WHO, 2020b). As of May 1st, 2021, the WHO had received reports of 150,110,310 cases of Covid-19 worldwide, including 3,158,792 fatalities (Kamacooko et al., 2021). Sub-Saharan Africa accounted for almost 4.5 million of these confirmed cases, including over 121,000 fatalities (Kamacooko et al., 2021).

In September 2021, the vaccination rollout in South Africa was extended to include individuals between the age group of 18-35 year, this being the youth (NICD, 2021). For vaccines to decrease or control Covid-19 infections a high percentage of the population must be vaccinated (Burger, Buttenheim, et al., 2021), and in comparison, to other age groups this population had the lowest 2 vaccination rate with only 53% being vaccinated. Moreover, the youth form an essential and vibrant part of the South African population and should not be overlooked in vaccination campaigns. Early reports in the pandemic showed that the youth were at a minimal risk of contracting server Covid-19 compared to older age groups (Adams, Park, et al., 2020). This means that they are a crucial source for the spread of infection to more vulnerable people since they are more prone to exhibit asymptomatic instances of Covid-19.

Currently there are limited studies investigating what motivations and barriers the youth in South Africa face that influence their decisions to get vaccinated. This is a significant research gap as current Covid-19 vaccine studies tend to solely focus on investigating vaccine hesitancy existing

within communities, exploring research on the account of who is willing to get vaccinated and who is not willing to get vaccinated (Burger, Buttenheim, et al., 2021; Cooper et al., 2021; Dzinamarira et al., 2021). Drawing from previous studies on vaccines such as the influenza and meningococcal vaccines, investigating barriers and motivations is an essential part of vaccine research as it provides key factors that assists in predicting the trends of vaccination among different groups of individuals (Corace et al., 2013; Prematunge et al., 2014). Furthermore, different groups have different barriers and motivators, these usually stem from the community in which they reside, as well as the societal norms within the community. Understanding what motivates or what hinders a collective group of individuals from making informed decision about their health is an alternative yet explorative way to improve public health therefore, the following study aims barriers and motivators of Covid-19 vaccine uptake among young people in Soweto, South Africa.

Statement of The Problem

Vaccination is the most effective public health intervention to curb and reduce the impact of Covid-19 (Burger, Köhler, et al., 2021; Kamacooko et al., 2021). When people are vaccinated, there are fewer cases of the virus in the population, fewer hospitalizations for Covid-19 patients, and fewer deaths from complications related to Covid-19 (Phillips et al., 2022). The average time it took to develop a vaccine in recent years was ten years but in the case of Covid-19 it took less than a year to get clinical trials running testing potential vaccine candidates and to get vaccines ready for commercial use (Graham, 2020). Less than a year after the first Covid-19 case was reported, Covid-19 vaccinations were made accessible in South Africa. The South African government is the only buyer of vaccines in the nation and is in charge of finding vaccines, distributing them to provincial governments and the private sector, and managing the overall rollout of vaccines.(Wadvalla, 2021). After obtaining approximately 12 million Covid-19 dosages in January 2021, the country was one of the first African countries to perform a large-scale rollout (Wadvalla, 2021).

Despite the unpreceded success in vaccine development and the nationwide acquisition of vaccines, convincing the population to accept vaccination against Covid-19 remains a major challenge in South Africa (Wadvalla, 2021). Low vaccine up take could be seen around the country with most people standing between receiving at least one dose of the vaccine or not having been

vaccinated at all. This is an issue particularly within the adult's population (those 18 years and older) (Burger, Köhler, et al., 2021). Figure 1 illustrates the adult population vaccine coverage by age in South Africa. Statistics show that only 49.58%% of the adult population had received at least one vaccination dose in all South Africa, of which within the Gauteng province alone, only 47% of this cohort was vaccinated(Department of Health, 2022). Within the adult population is where the youth would be found, these are individuals between the ages of 18-34 currently residing in South Africa. The youth particularly have the lowest vaccine uptake percentage across the country with only a staggering 36.5% individuals within this category being vaccinated, as shown in figure 1 (Department of Health, 2022). Previous studies have shown that there are various social, cultural, and systemic determinants to the uptake of vaccines among the youth and addressing these factors could potentially increase the vaccine uptake in the country.

Age Group	Total Number of Individual Adults Vaccinated	Total Adult Population [18 Years & Older]	Individuals Vaccinated as a % of the Adult Population
18-34	6,499,492	17,788,511	36.54%
35-49	6,242,483	11,686,937	53.41%
50-59	3,152,446	4,817,271	65.44%
60+	3,833,250	5,505,482	69.63%
Unidentified	3,077	0	0.00%
Total	**19,730,748**	**39,798,201**	**49.58%**

Figure 1 Adult population vaccine coverage by age (2021)

Because the youth are more likely to show less severe symptoms of the disease compared the elderly population, many are of the impression that they are "immune" from Covid-19 infection, and therefore do not see the need to follow the Covid-19 safety precautions or, even more importantly, to get vaccinated now that vaccines are available (Brandt et al., 2021). This is because the youth have a different set of knowledge and perceptions compared to other age groups (Adams et al., 2020). They are influenced by social media, different sources of information that they receive on a daily basis and their stand in society gives them different view of the world (Adams et al., 2020). This translates into different individual perceptions and motivations that are not yet understood in Covid-19 research.

Previous studies that evaluated vaccine uptake in communities did not include young people as part of a targeted study population because of the limited "direct" impact of Covid-19 on young adults. Instead, they opted to include populations that were more at risk of infection, like healthcare workers and the elderly. In South Africa, particularly there are limited studies focused on the youth and how they perceive Covid-19 vaccinations. Particularly the barriers and motivations that they face when it comes to getting vaccinated against Covid-19.

Rationale of The Study

The Covid-19 pandemic shed light on the many gaps that can be seen within the health care system. As the virus continues to spread and evolve, introducing new strains, the health care system was put under immense pressure in targeting and curbing the impact of Covid-19 infections. This vaccination of Covid-19 the health care system alone cannot solely manage the pandemic, there is a need to implement a holistic approach that integrates community engagement. The aim of this study is to involve the youth community by understanding what motivated them to get vaccinated and what would act as barriers within their community hindering them from getting vaccinated. This study will provide descriptive data which may be useful for the concerned authority and planning institutions in implementing appropriate and sustainable vaccine interventions as well as guiding program and policy making.

Research Aims and Objectives

Research aim

The purpose of this study is to understand the barriers and motivations towards covid-19 vaccine uptake among young people in Soweto, South Africa**.**

Specific Objectives

The specific objectives of the study are as follows:

1. Investigate the barriers that are leading to slow vaccine uptake of COVID-19 vaccines in adults aged 18-<35 years in Soweto, South Africa
2. Explore motivators for covid-19 vaccination among adults aged 18-<35 years in Soweto, South Africa.

Research question

What are the motivations and barriers towards vaccine uptake among the youth population in Soweto, South Africa?

Specific research questions

1. What the barriers towards Covid-19 vaccination among the youth population in Soweto, South Africa?

2. What are the identifiable motivations towards Covid-19 vaccination among the youth in Soweto, South Africa?

Methodology

Study Site

This study was conducted in two study sites from which data was collected, Meadowlands and Themb'Elihle. Meadowlands can be found in Soweto, an urban community found in Johannesburg, South Africa. Soweto is a community with a mixture of people from different cultural backgrounds and ethnicities. According to Statics South Africa (STATSSA, 2011) it is predominantly a black African community with black Africans accounting for 98.5 percent of the population. Themb'Elihle is found in Lenasia, an Indian community on the outskirts of Soweto. More on the demographic and regional makeup of these two sites will be provided in *Chapter four* of this report.

Study Design

This is an explorative qualitative study that encompasses specific methods of qualitative research. Qualitative research is a method that entails gathering and evaluating non-numerical data that comes in the form of text, video, or audio, in order to understand concepts, opinions, or experiences. This approach to research follows a constructivist world view, where the researcher seeks to establish the meaning of phenomenon from the viewpoint of the participants. One key element of collecting data in this way is to observe participants' behaviors during their engagement in activities. Qualitative research can be used to get in-depth understanding of a subject or to develop new research ideas (Bhandari, 2022). Unlike quantitative research, this method does not use statistical or quantitative measures of research for analysis but rather the data collected through observations, interviews and focus groups can be transcribed into protocols and transcripts which will be used to generate new theories and ideas (Busetto et al., 2020).

Data Collection

Study Population

Study population included both male and female participants between the ages 18-35 who live in Soweto. This particular age group is considered to be the working class, and it accounts for 71% of the population in Soweto and 70.4% in Lenasia (STATSSA, 2011a). This study selected individuals residing in the two study sides and who were between the age of 18 and 35. Individuals under the age of 18 years old or over the age of 35 were excluded from the study.

Sampling Strategy

Purposive sampling techniques were used to select potential participants. This is a form of non-probability sampling in which participants are selected because they have characteristics that are needed in the study sample. All participants were selected under the Child Health and Mortality Prevention Surveillance (CHAMPS) Program, particularly the Soweto-Thembelihle Health Demographic Surveillance System (STHDSS) and with the use of "foot soldiers". Foot soldiers are individuals who are knowledgeable about the study side and were able to assist with recruitment and enrolment of participants. Meadowlands and Themb'Elihle were chosen for this study due to their large clusters of youth and participants that were likely to fit the inclusion criteria of the study. An effort was made to gather an equal number of participants from both sites.

Focus Group Discussions

In order to obtain in-depth information, this study made use of focus group discussions. A total of 8 focus groups were conducted, with at least 6 to 8 participants in each group. A total of 62 participants were enrolled to take part in the discussions. The different groups were divided on the account of gender with the males interviewed separately from females. The reason for this division was to ensure that all participants are engaging and robust during the conversation, as some participants might be more comfortable when grouped with members of the same gender. Each FGD took no longer than 1 hour. Participants were asked questions pertaining to the research objectives presented in the form of a discussion, following the FDG guide created so as to ensure that the group discussions have logic, flow and to eliminate of ambiguity and minimizing repetitiveness of questions during the focus group discussions. All contents of the FGD were audio-recorded with permission from the participants. In order to ensure validity of the tool, the FDG guide pre-tested in house with colleagues at WITS VIDA before being conducted in the field.

Data Analysis

The first step of qualitative data analysis involved transcribing and translating all audio files and notes taken during each focus group discussion. The process of transcribing involved turning all spoken data into written form making it simpler to analyses. Transcribed data was put into a Microsoft Word file which only the researcher had access to. Quality checks of the transcriptions will be performed for each discussion. The information collected was inputted into ATLAS.ti Version 22.2, a data management software. The next step followed a careful read the transcripts and performing what is known as "winnow" of the data which is a process of focusing in on some of the data and disregarding other part of it (Creswell & David Creswell, 2018). The process involved highlighting sentences or words spoken by participants that directly related to the research question. The highlighted sentences were the codes generated in this study. Coding is a method of categorizing or indexing a document in order to create a framework of thematic ideas about it. The codes were later on categorized into key themes, "barriers" and "motivations" which were further divided into subthemes. The codes or themes which are created enabled the researcher to organize data and examine in a structured manner.

Conclusion

The main aim of this study is to investigate the motivations and barriers toward the low vaccine uptake in South Africa among the youth. This chapter has provided the background to the study topic and addressed the problem statement as well as provided a rational for conducting this study. The chapter provided the research aims and objectives of the study including the research questions to be answered on the research. A brief description of the study site and study population as well as methodologies used for data collection and data analysis were also provided in this chapter.

CHAPTER TWO: LITERATURE REVIEW

Introduction

In this chapter literature related to the research question is presented to shed light on the principles employed in this dissertation, studies that have been conducted on this phenomenon, globally, in the Sub-Saharan Africa, and in South Africa and presenting the gaps that this study endeavored to answer.

The Covid-19 Pandemic

The ongoing respiratory disease pandemic that was recently given the name Coronavirus disease 2019 (Covid-19) is the most recent threat to global health (WHO, 2020a). Over four hundred million Covid-19 infections and six million Covid-19 deaths have occurred globally since the start of this year. (Myoung, 2022). The Covid-19 pandemic has not only significantly impacted public health, but it has also been able to disrupt global economic and social advancement in ways that have never before been possible. As the number of Covid-19 patients admitted to hospitals continued to rise in both developed and developing countries, placing tremendous strain on the healthcare system. (Kumari & Shukla, 2020; Velavan & Meyer, 2020).

In the preliminary stages of the pandemic there was limited treatment options for Covid-19 disease. The greatest strategy to stop the virus's spread was through precautionary measures of prevention. These activities caused a significant decrease in the world's economy, social interactions, and affected both physical and mental wellbeing (Dubey et al., 2020). Covid-19 has had a wide range of effects on vulnerable groups like people over the age of 65, people living with comorbidities patients, people with disabilities, and people with mental health issues. It has also had effects on frontline healthcare workers, people quarantining at home, and infected patients and patients with suspected infections (Zhang et al., 2021). Despite the risk of severe infection is lower among the greater population, widespread control methods like social isolation and quarantine have had a significant negative influence on mental health. (Dubey et al., 2020).

As the rest of the world battled the pandemic, the African continent was the last to be afflicted by the virus (Lone & Ahmad, 2020). According to Pew Research Center (2020), 94% of the African population is under the age of 60, meaning that the vast majority is at minimal risk of getting serious illness and dying from COVID-19 (Senthilingam, 2021). According to the World Bank, 58% of people in Sub-Saharan Africa live in rural areas (Senthilingam et al., 2021). Despite the

slow increase in cases, there was an initial concern for the continent and its vulnerability to the pandemic (Senthilingam, 2021). Unlike other countries, most African countries have weak health care systems and a large population of immunocompromised individuals which contributes to the high prevalence of diseases like HIV, malnutrition, TB, and malaria, to name a few (Senthilingam, 2021).

Vaccines are the most effective defense against Covid-19. Vaccination is the safest way of increasing the immune system's ability to combat disease-causing microorganisms. There is a measure of protection against that specific disease once vaccination is administered (NICD, 2021). There has been unprecedented success in Covid-19 vaccine development, indicating that vaccine research builds on already existing knowledge to new more effective Vaccines (Ndwandwe & Wiysonge, 2021). High-income countries' investments also contributed to the quicker vaccine development process which allowed for the procurement of vaccines (Ndwandwe & Wiysonge, 2021). By July 2021, there were 18 Covid-19 vaccines permitted for use worldwide and over 184 Covid-19 vaccine candidates in preclinical phase. The vaccines that have been made available have demonstrated safety and effectiveness in helping to lower hospitalization and severe illness in people infected by the virus (Ndwandwe & Wiysonge, 2021).

Meeting Covid-19 Vaccination Targets in Africa

Once vaccines became available a major challenge was getting the wealthier countries to donate vaccines to developing countries. Over 47 African countries have signed on to the Covid-19 Vaccine Global Access (COVAX) program, which aims to provide equal access to reliable and safe COVID-19 vaccines around the world by assisting poor countries in acquiring Covid-19 vaccines at a lower cost (Wouters et al., 2021). In 2021 a majority of African countries set a target a target to vaccinate 70-80% of their populations however, the African Centre for Disease Control set a lower 60% target by the end of 2022 for all African countries, with a first (and more realistic) objective of 35% by the end of 2021 (WHO, 2022). This target was not met. The beginning of 2022 the continent was only able to vaccinate 15% of its adult population vaccinated. 435 million doses, or 61%, of the 714 million doses received have been delivered (WHO, 2022).

Vaccine Rollout in South Africa

South Africa was among the first African country to secure enough vaccines to start its own extensive vaccine rollout (Dzinamarira et al., 2021). A national wide vaccination rollout in south

Africa was implemented on May 5th, 2021, with the vaccination target of over 40 million people, about 64% if the population (Mtsweni, 2021). South Africa's vaccine rollout adopted a priority-based approach with health care professionals first in line to get the jabs, which later procced to an age-based strategy, first targeting the elderly, and moving to younger age groups. All were encouraged to vaccinate, and vaccinated individuals were presented with a vaccination certificate, as proof of their vaccination.

The Threat of Expiring Vaccines

Providing access to vaccines and vaccination services will not always result in the decrease of infection and disease burden (Sallam et al., 2022). Despite the success of securing vaccines, getting people to accept Covid-19 vaccines is still a major concern South Africa with high nationwide vaccine hesitancy rates. With the extremely low vaccination rates, South Africa has only made use of 58% of the vaccines secured as of 2022. There are fears of vaccine wastage if the uptake vaccine uptake does not pickup, with the Pfizer vaccines set to have expired July of this year. Figure 1 illustrates the number of Pfizer and J&J vaccines that have been distributed since the beginning of the rollout. The government is working on finding new interventions and campaigning for

increasing vaccine uptake.

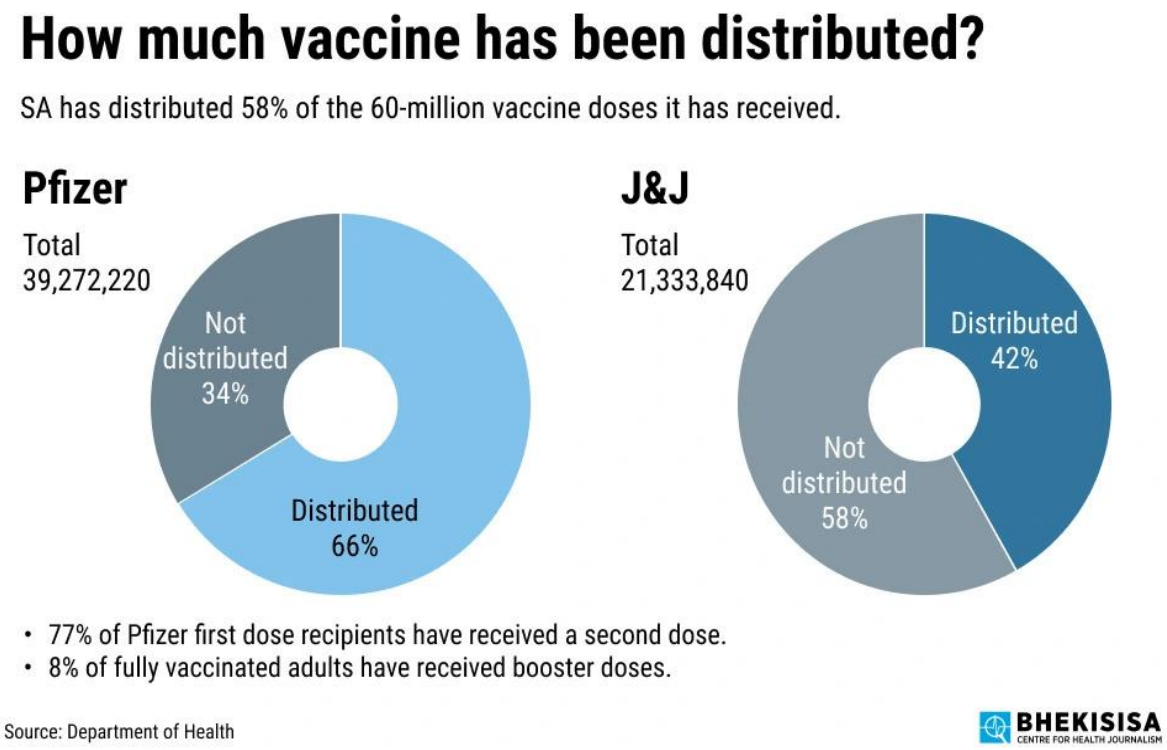


Figure 2 Vaccine distribution in South Africa

Vaccine hesitancy

Vaccine hesitancy is not a new concern as it has been labeled as "one of the top ten global health threats", according to the WHO (Cooper et al., 2021). Studies from around the world show that a significant number of people experience vaccine hesitancy, worries or resistance regarding the vaccines and this influences their decision to accept vaccines (Callender, 2016). The aftermath of pandemic and its impact is what spurred vaccine related fears and increased the vaccine hesitancy rates in South Africa. Vaccine hesitancy studies conducted in South Africa before vaccines were made available showed that more than half the population was willing to accept Covid-19 vaccines. Survey data highlighted in figure 2 shows that South Africa was among the African countries with the highest vaccine acceptancy rates. According to Burger et al (2021) in May 2021 76% of South Africans agreed with the statement that they would acquire a vaccination if one became available as illustrated in figure 3. However, more than a year later since the beginning of the rollout, South

Africans are still reluctant to vaccinate, with only 37.17% as shown in figure 4, despite having said they would be willing to vaccinate of the population, as shown in figure 3.

Country; Acceptance rate (%); Survey date

1. Ethiopia; (92%); February 2021
2. Kenya; (64%); February 2021
3. Malawi; (80%); October–December 2020
4. Mozambique; (65%); March 2021
5. Rwanda; (85%); October–November 2020
6. South Africa; (76%); September–October 2020
7. Uganda; (87%); November–December 2020
8. Zambia; (66%); November 2020
9. Zimbabwe; (50%); February 2021

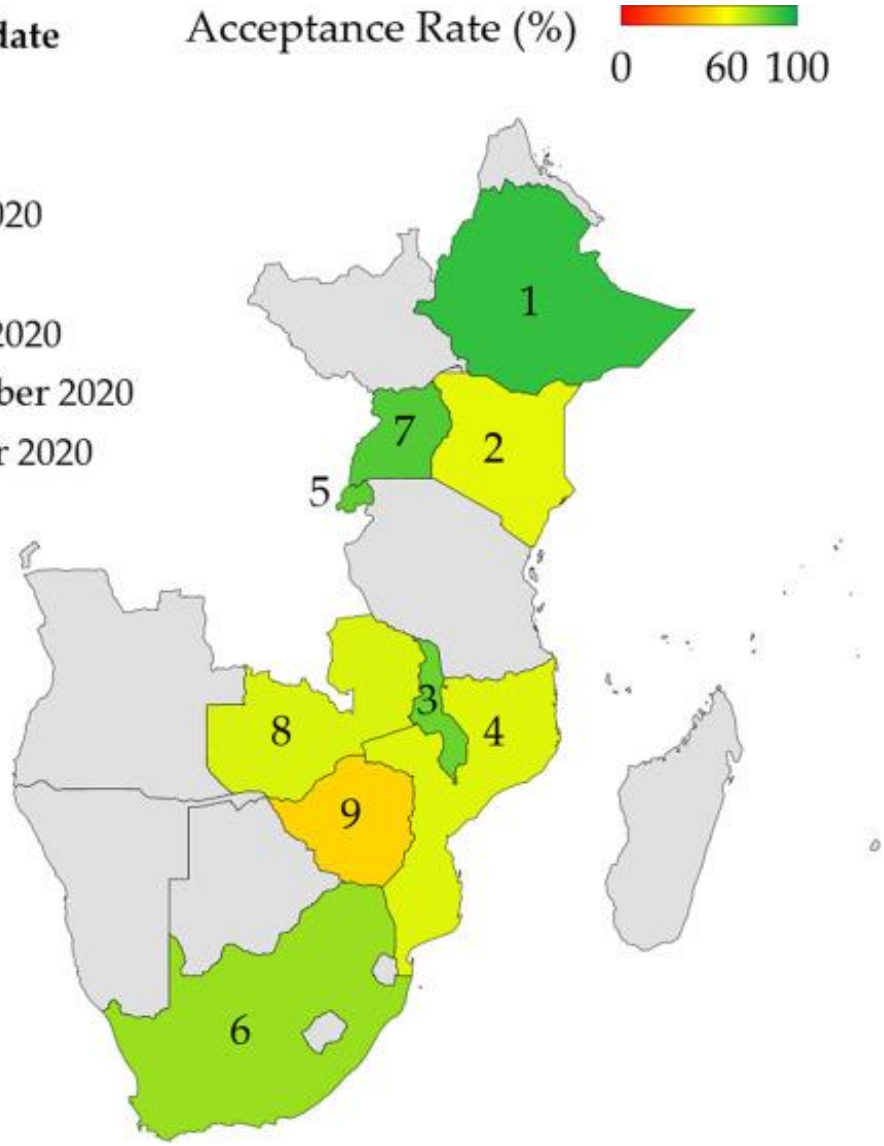


Figure 3 Vaccine acceptancy rates in South Africa, (Sallam et al., 2022b)

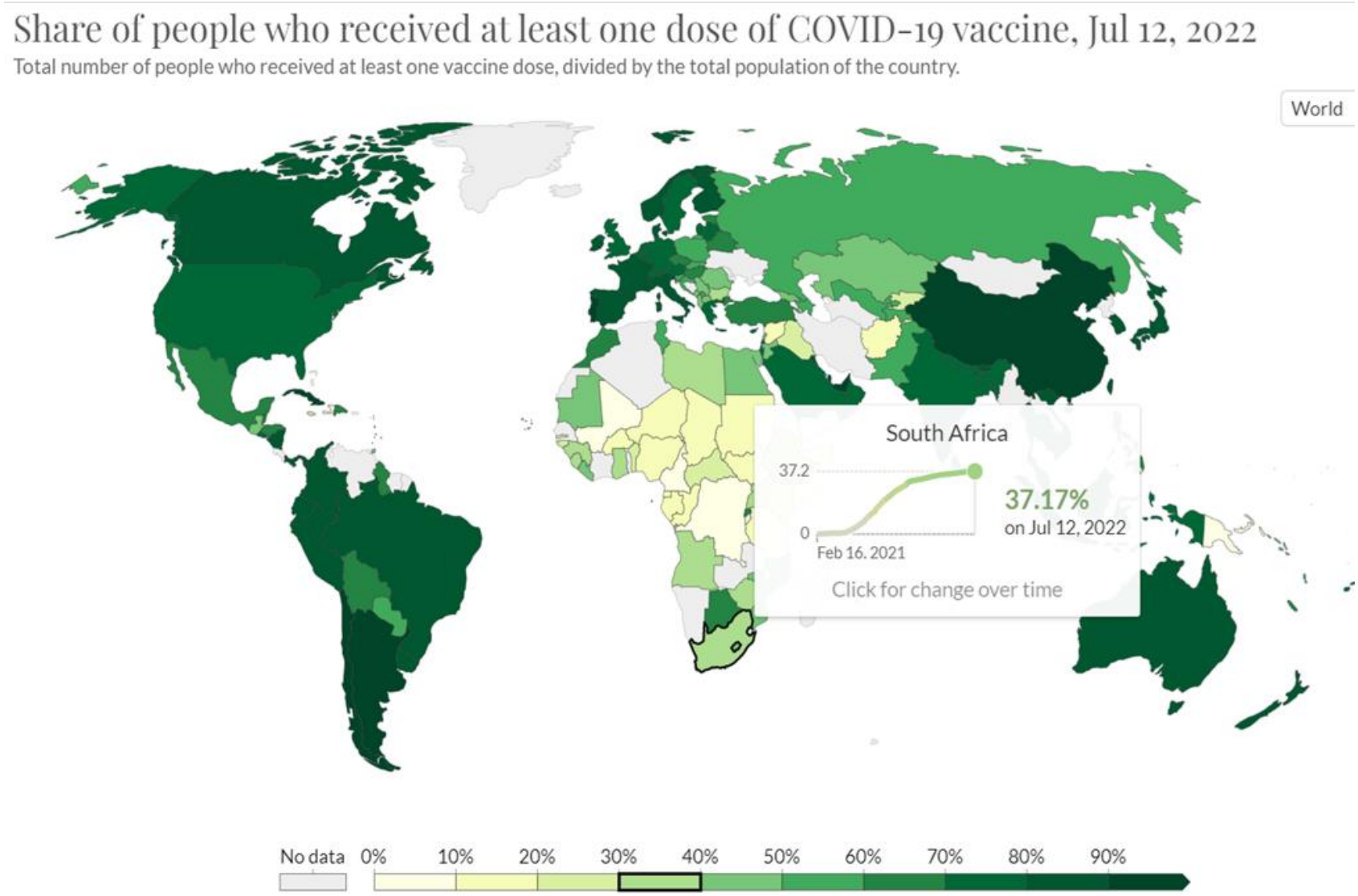


Figure 4 *Percentage of people who have received at least one dose of Covid-19 vaccine,* (Mathieu et al., 2021)

An "Infodemic"

Due to the wide spread of misinformation, rumors and conspiracies on Covid-19, this pandemic has been seen by most as an "infodemic" (Islam et al., n.d.). This has had particularly a negative impact on the rollout of Covid-19 vaccines; as a result of an abundance of information, people are having difficulty finding genuine and trustworthy sources. Although the idea of an infodemic is not new, the issues it presents have become more complex in the current digital age and their impacts have been amplified. According to (Lee et al., 2020), during a worldwide pandemic false information about Covid-19 is likely to circulate and engage users on social media platforms in a manner similar to accurate information, endangering public health responses by lowering public awareness and knowledge of the disease (Hansson et al., 2021). South Africa is no exception to this with concerns of a rising trend of internet driven anti-vaccine lobbing in the country (Cooper et al., 2021). Exposure to misinformation can be associated with misinformation belief, and misinformation belief can result in none-preventative behaviors such as vaccine hesitancy.

Population Barriers and Motivations Towards vaccine uptake

Health behaviors are "those personal attributes such as beliefs, expectations, motives, values, perceptions, and other cognitive elements; personality characteristics, including affective and emotional stated and traits; and overt behavior patterns, actions and habits that relate to health maintenance, to restoration and to health improvement" (Gochman, 1997, p.3). Health behavior is the best hope of decreasing preventable diseases and death around the world (Shmueli, n.d.). Evidently the Covid-19 pandemic can be controlled using vaccines, but how well these vaccines work depends largely on the health behaviors of the population (Cooper et al., 2021). This next section and subsections will examine aspects of health behavior by looking at the barriers and motivations that influence Covid-19 vaccine uptake.

Barriers

Health barriers are anything that impede a person, or a community from getting access to health services and/or from being in the greatest possible health (Burke et al., 2021). Complex and context-specific, vaccination uptake barriers are frequently attributed to a lack of information and accessibility. The following subsection provides a description of the barriers that influence vaccine uptake.

Accessibility

As was previously established, there are research gaps between willingness and conduct with regard to vaccination against infectious disease. In order to maintain or improve people's health, providing access to proper health care resources is important. In order to have access to healthcare, there must be a sufficient number of services offered when needed and required. Even if those in need may have access to health care services, they could have difficulty using them, so evaluating access to health by looking at service availability has its limitations (Gulliford et al., 2002). People are unable to use the services that are presently available due to a variety of obstacles.

Structural barriers are an example of these barriers. Structural barriers are elements of the external environment, or systematic problems, that have a disproportionately negative impact on a group as a whole and uphold disparities in outcomes (Perry, 2021). Policy, time, cost, transportation, and service location are all examples of structural impediments. Policies have a significant impact on how the public uses healthcare services and on ensuring that everyone has access to it (Perry, 2021). Policies in many low-income nations frequently lead to inequities, making already disadvantaged populations even more disadvantaged. As a result, studies have concluded that minority and disadvantaged groups tend to have a lack of trust in governments and lower public trust can be associated with lower compliance in regulations (Perry, 2021). This was also witnessed during the Covid-19 pandemic where high public trust is an essential definitive for successful vaccine responses (Cooper et al., 2021). Other structural barriers such as a lack of time were also recorded as determinate for vaccine hesitancy. A study conducted on vaccination against HPV towards boosting coverage and tackling misinformation showed that a major barrier in achieving vaccination was a lack of time and an inability to prioritize vaccination in their day today tasks (Bigaard & Franceschi, 2021). Other barriers also include vaccine cost, people have been more willing to vaccinate against certain diseases if the vaccination costs were attainable to them or free.

Misinformation

The covid-19 pandemic pushed the creation, transmission, and consumption of false information all around the world. In order to recognize false information about the pandemic, take the proper precautions, and behave in a protective manner, one must have the ability to gather, comprehend, and apply health-related information (Bursztyn et al., 2020). By doing so, one can eliminate unnecessary risks for infection or spread. Misinformation accompanying Covid-19 has been

associated with increased risks, including the risk of discouraging vaccination (Aslani, 2020). It is on social media platforms that false information about the pandemic has been widely spread. For example, the virus has been linked to 5G mobile networks, stories of fatalities in vaccine trials after Covid-19 vaccination, and rumors of the the pandemic being a ruse or a hoax (Hansson et al., 2021). Such inaccurate information on COVID-19 can increase already existing anxieties, bring doubt and influences people's decisions to accept vaccination. This kind of information results in real life consequences.

In Denmark and Italy misinformation was found to be the leading cause in the significant drop of HPV vaccinations among young females following false claims of vaccine adverse effects from the media in both countries between 2013 and 2018 (Bigaard & Franceschi, 2021). A different randomized control trail conducted in both the UK and USA, with the aim of measuring the impact of misinformation on vaccine intent, found that vaccine acceptancy and vaccine intent with exposure to misinformation reduced by 6.2% in the UK and 6.4% in the USA among a cohort of participants that stated they would definitely get accept the vaccine (Loomba et al., 2021). Showing similar results, Lee et al, (2020) investigated the association between Covid-19 misinformation exposure and belief with the adoption preventative behaviors, and it was discovered that misinformation was highly prevalent among adults in South Korea – particularly those of young age – with over 67% of the population being exposed to at least one misinformation. In this study misinformation exposure was associated with poorer Covid-19 knowledge and fewer preventive behaviors (Lee et al., 2020)

Hill et al, (2019) explain that there is a huge gap between health professionals, scientists and the public when it comes to information dissemination. Health experts do not fully understand the serious effects of modern misinformation sources, such as social media, where false information spreads quicker than the truth (Vosoughi et al., 2018). Unfortunately, a majority of scientists lack ability to communicate science at a level that a general public can understand (Brownell et al., 2013), their warnings and other remarks do not have the same impact on the public as those made by celebrities (Bigaard & Franceschi, 2021). These gaps lead to the accumulation of mistrust in health services and health professionals. Misinformation can cause significant damages and slow down vaccine uptake. Therefore, organizations promoting vaccination need to come together with

scientists and the media to produce appropriate communication that is addressed to both the "brain" using facts and the "heart" using more touching stories (Steffens et al., 2019)

Vaccine related fears and concerns

Some barriers to Covid-19 uptake are directly related fears and concerns about vaccines themselves. Low vaccine confidence can be caused by these fears, which are frequently about vaccine safety, effectiveness, and potential side effects. Communities that lack faith in vaccines tend to have greater rates of vaccination hesitancy, which can cause delays and denials, impede research and delivery plans, and occasionally cause disease outbreaks (Larson et al., 2013). The most major example is the 2003–2004 polio vaccine boycott in northern Nigeria, which greatly slowed down efforts to eradicate the disease globally, costing millions in US dollars, and led to its resurgence (Taylor et al., 2017). This was mainly a result of unfounded fears and concerns in vaccine-induced sterilization, which lead to the peak of polio cases in 20 previously polio-free countries across the world. Another good example is the drop in measles, mumps, and rubella (MMR) vaccines following fears of an alleged association between the vaccines and autism (Callender, 2016), which were later disproven.

There are numerous adverse effects associated with vaccinations, some supported by research and others by conjecture, which have a negative impact on vaccine coverage. Prematunge et al, (2014) studied the motivations and barriers influenza vaccination among health care workers and found that 46.2% of participants were reluctant to get vaccinated for influenza due to fears of vaccine side effects and doubts of vaccine safety. During the coronavirus pandemic, fears and concerns regarding unknown adverse effects of Covid-19 vaccines arose as a result of vaccine research and approval occurring at an unprecedented rate (Burke et al., 2021). Phillips et al, (2022) investigated the perceived threat of Covid-19 vaccines in the UK. This study found that a substantial component in low vaccine acceptancy was the concern about side effects which affected people’s decision to get vaccinated. Furthermore, concerns were expressed about the unpleasantness and inconvenience of being unwell for a few days. The rapid development of testing and approval of vaccines also played a role in deterring people from taking the Covid-19 vaccine. Concerns of side effects were also reported in young adults (Syed Alwi et al., 2021). In addition, Qiao et al, (2022). explained that young adults particularly had a fear of vaccine ingredients and labeling them as “unsafe” for us.

Motivations

Motivations is "individual's degree of willingness to exert and maintain an effort towards organizational goals" (Becker et al., 1972, p.1). Motivation could also be what stimulates an individual's decision making to adopt a certain health behavior. According to Ryan & Deci, (2000) a person who is energized or activated toward an end goal is considered to be motivated, whereas a person who feels no inspiration to act is thus characterized as unmotivated. There is a huge gap between understanding that health behavior is in fact motivated and understanding the unique motivational components of each given act (Costello et al., 2011). It is important to understand the motivations that are associated with health behaviors, such as vaccination acceptancy, in order evaluate and understand what motivates individuals to adopt more healthy behaviors. The following factors outline some of the motivational determinants of vaccine uptake.

Knowledge and awareness

Knowledge and awareness are among factors that can contribute to effectively encouraging the acceptance and adoption of a behavior. Having access to information and being sufficiently informed about the risks and benefits of certain behaviors guides individuals in making informed decisions about their health. A study investigating the internal motivators that influence the healthy lifestyle of middle-aged Iranian women, (Enjezab et al., 2012) found that women with more knowledge and awareness of the effects of poor nutrition were more likely to take responsibility for their health in carrying out health promotion behaviors. Being more aware and knowledgeable about a behavior such as vaccination also influenced the chances of undergraduate students being motivated to get their seasonal influenza vaccine (Lee et al., 2022). Consequently, another study found that having a lack of awareness prevented college students in the United States from getting the HPV vaccine (Hirth et al., 2018). Knowledge and awareness can be influenced by experiences, and unlike the older populations most young adults and adolescents have limited experience with vaccine-preventable diseases, it may be difficult to sustain high uptake and may draw attention to the negative effects of immunizations (Trayner et al., 2019). Studies conducted on the new Covid-19 vaccines suggest that although many young adults rely on social media and accessing websites to inform their decisions (Adams et al., 2020). Knowledge can be affected by different factors such as age, gender, culture and religion, occupation, socio-economic factors.

Health concerns

It has been shown that adopting healthy practices is constantly motivated by having a general concern for one's health. A study examining what motivates elderly individuals to engage in physical activities found that individuals displayed positive commitment to physical activity because of them fear and concern for their overall wellbeing, Costello et al. (2011) found that participants engaged in physical activity because they had an existing health condition that required taking precautions or were attempting to combat potential health issues as well as to maintain overall health in their study on the motivators, barriers, and beliefs on physical activity in an older population. Enjezab et al, (2012) highlighted that having a fear or affliction towards a certain health condition and its consequences proved to be an effective motivator on the healthy lifestyles of middle-ages women. Another study showed that participants vaccinated with influenza reported to have feared the severity of the disease, and this spurred them on to seek vaccination (Kini et al., 2022; Petek & Kamnik-Jug, 2018).

The elderly are said to be more at risk of Covid-19 infection and severe disease compared to young adults and have more concern of their health making them more willing to get vaccinated. Younger adults on the other hand feel less susceptible to infection and less motivated to get vaccinated. Phillips et al, (2022) found that the highest rate of low perceived severity of Covid-19 was found in the young adults who viewed themselves at low risk of poor covid -19 outcomes due to being young, fit and having a stronger immune system. Vaccine intentions were also reported lower in this age group. Extrinsic Covid-19 motivations have also been documents as some may choose to get vaccinated in an effort to protect loved ones and the community.

Incentives as a motivator

Research as shown that people tend to have a positive attitude towards vaccination when assured to receive an incentive in return. This kind of motivation is entirely intrinsic and seeks to benefit the individual rather than the society. A study in Singapore a study experimented on the effects of giving people financial incentives on their intentions to receive vaccination against influenza. The results show an increase in vaccinations among the study group (Yue et al., 2020). Numerous studies have explored the impact of using incentives to motivate people in receiving the Covid-19 vaccination. In a Swedish study, it was discovered that researchers' guaranteed payouts enhanced the uptake of the Covid-19 vaccine by 4%. In order to encourage adults to receive the Covid-19

vaccine or to drive someone to get it, North Carolina in the United States (U.S.) offered $25 incentives (Brewer et al., 2022). Ukraine and Serbia have both offered guaranteed financial incentive programs, but the results of these initiatives have not been studied. In Israel the "green pass" program was implemented, and outline incentives and penalties given to those to vaccinated and those that do not (Saban et al., 2021).

Conclusion

This chapter has discussed the literature available on the barriers and motivations for Covid-19 vaccination. The literature has outlined the key principles employed in this study. This chapter provided a brief description of the Covid-19 pandemic on a global scale before tackling the challenges of vaccination rollout in African countries, including South Africa. The chapter highlighted the high prevalence of vaccine hesitancy which account for the low vaccination rates. The chapter went on to explain the different barriers and motivations to health behavior that impact the rise and fall in vaccine uptake and vaccine acceptancy rate.

CHAPTER THREE: THEORETICAL FRAMEWORK

Introduction

The following chapter will provide a theoretical framework for which this research is based. The Health Belief Model (HBM) is a theoretical framework that has been used by many researchers to explain the willingness of people to partake in healthy behaviors. This theoretical framework will provide a foundational review of existing theories that will act as a roadmap in achieving the research aims and objectives of this study,

The Health Belief Model

The Health Belief Model (HBM) was first discovered in the 1950s by social psychologists in the USA who attempted to explain why so many people refused to take part in interventions to prevent and detect disease (Zampetakis & Melas, 2021). The HBM contains several primary concepts that predict why people take actions to prevent, protect and control illness and disease. There are five main constructs and pillars embedded in the theory; perceived susceptibility, perceived severity of seriousness, perceived benefits, perceived barriers, self-efficacy to engage in a behavior and cues to action (Kasprzk, 2002).

1. Perceived Susceptibility

This refers to an individual's belief about the likelihood of contracting a disease or condition (Kasprzk, 2002). This is a completely subjective perception of being at risk of acquiring a certain illness. This feeling of vulnerability acts as a motivation for behavioral change that impels an individual to seek assistance in controlling to preventing an illness. For example, a woman who beliefs they are at the risk of getting breast cancer is more likely to be interested in going for a mammogram (Kasprzk, 2002). Perceived susceptibility has been assessed in the present research as the extent that people believe they would be at risk of getting infected with the COVID- 19 when they would take the new vaccine (Zampetakis & Melas, 2021)

2. Perceived Severity

This refers to the individual's beliefs regarding the negative side effects of containing the disease. Feelings about the seriousness of contracting a disease or the negative outcomes of leaving it untreated (Houlden et al., 2021). This include an evaluation of both the medical and clinical consequences such as the possibility of pain, disability and death, and the social consequences that may be impeded as a result of the disease this includes effects on working conditions, family life

and social interactions. People who feel threatened or who believe they are at a high risk of contracting COVID-19 are more likely to express strong intentions to get the COVID-19 vaccine (Zampetakis & Melas, 2021).

3. Perceived Benefits

This can be defined as an individual's beliefs on the benefits that come with taking up a certain health behavior (Kasprzk, 2002). Even if susceptibility and severity of a disease are perceived by an individual, whether this perception leads to behavior will be influenced by the perceived benefits of taking action to reduce the disease threat. It is however important to note that individuals exhibiting optimal beliefs in susceptibility and severity are not expected to accept any recommended health action unless they also perceive the action as potentially beneficial by reducing the threat (Strecher & Rosenstock, 1997). This means that non-health benefits will also have an influential effect over an individuals compared to recommended health action. For instance, pleasing a family member by going for a mammogram can be a non-health related perceived benefit that can induce behavioral change in an individual (Strecher & Rosenstock, 1997). In this study perceived benefits refers to the belief that the COVID-19 vaccine uptake will reduce the risk or seriousness of the disease threat.

4. Perceived Barriers

This is the belief that an individual is constrained from performing a certain health behavior due to certain psychological, physical, and financial factors. Before making the decision to take up a certain health benefit an individual will go through a non-conscious risk-benefit assessment of weighing the expected benefits associated with the action and the risks or barriers (Houlden et al., 2021). The possibility that the health intervention may be expensive, time-consuming, inconvenient, or have negative effects may deter people from taking it (Jones et al., 2015). The possible drawbacks of a certain health action could prevent people from engaging in advised behavior. In this study, perceived barriers refers to the belief that being vaccinated against COVID-19 is restricted due to difficulties related to psychosocial, physical, or financial factors. Perceiving barriers is related to lower intentions to vaccinate against COVID- 19.

5. Cues to Action

This are actions with an individual's environment such as information, people and events that will guide an individual to undertake a certain health action (Strecher & Rosenstock, 1997). For instance,

an individual exposed to misinformation on Covid-19 vaccines will be less likely vaccinate compared to an individual who is fully informed. Community knowledge also plays a role in cues to actions as s individuals are more likely to adopt attitudes and perceptions of the community, they live in. A community hesitant to vaccines will have a larger population of unvaccinated individuals.

6. Self-efficacy

This is the recently added construct to HBM. Self-efficacy refers to the "the conviction that one can successfully execute the behavior required to produce the outcomes" (Kasprzk, 2002). Essentially, individuals that believe that they have the full capacity and confidence of performing a certain action are more likely to perform that action.

Conclusion

This section has described the theoretical framework in which this study is guided. The health belief model has been used by researchers to explain the intention to get vaccinated, this study uses this model to understand the barriers and motivations of vaccine intentions.

CHAPTER FOUR: METHODOLOGY

Introduction

In this chapter, the study's research methodology will be discussed which include the description of the research study site, study population, research design, sampling procedure, research instrument design, and data collection and analysis. This research methodological approach used in this study was based on the research questions, the study's goal, and its objectives. It includes a background description of the study site and the population from which the study sample was purposively selected, providing the biographical and demographic information of respondents, and the eligibility criteria used to select appropriate respondents. This study research design is described explaining the explorative nature of the design. Data collection methods are discussed to showcase the rationale behind using qualitative data collection through the use of Focus Group Discussions (FGDs). A description of the ethical considerations that were adhered to during the research process are presented including the process of data transcription and qualitative data analysis.

Study Site

This study took place in two study sites, Meadowlands and Themb'Elihle. The two sides are located in separate towns; Soweto and Lenasia, respectively and are part of the Child Health and Mortality Prevention Surveillance (CHAMPs) Program.

Soweto

Soweto is an urban community found in Johannesburg Metropolis, South Africa. Soweto is abbreviation containing the first two letters of "South-Western Townships." It is a congregation of 29 townships and has a population of over 1.4 million people residing within 355,331 households. The community is a mixture of people from diverse cultural backgrounds and ethnicities. A low-income, urbanized Black-African community of Zulu, Xhosa, Pedi, Tsonga, Venda, Tswana, and Sotho ethnicities (STATSSA, 2011) inhabit it, mainly of Christian religious background (mostly Protestant and Charismatic). According to Statics South Africa (STATSSA, 2011) it is predominantly a black African community with 98.5% black, 1.0% coloured, 0.1% Indian/Asian and 0.1% white and About 38.3% of the population competed their secondary education all the

way to matric but only 9.3% of the population completed higher education and about 3.1% have no schooling at all in Soweto (STATSSA, 2011)

Meadowlands

Figure 5 illustrates the map of Meadowlands, found at the far north of Soweto. The suburb is in Gauteng, and while it is still developing, it provides a suitable home for smaller families with low living standards. Meadowlands has a long and illustrious past that has influenced its contemporary growth. The community, which was founded in 1950, was intended solely for black residents of Sophiatown (Burton, 2006). For many years, transformation was slow, but today it supports a tenacious and hospitable community.



Figure 5 *Map of Soweto*

Lenasia

About 35 kilometers south of the city center is the township of Lenasia, which has a large Indian population. The foundation was made possible thanks to the Group Areas Act of 1950, which was intended to house the Indian community that had been forcibly transferred from Johannesburg's southwest (South African History Online, 2011). Lenasia was recognized as an Indian township by the Group Areas Act in 1958. Though technically Lenasia was no longer an Indian Group Area after the end of Apartheid, it has remained an Indian Residential Area. Like Soweto, Lenasia has developed into a regional economic hub, and developers have flocked to it to take advantage of the demand. Over 70.4% of the people living in the area are of working-class age.

Themb'Elihle

This is a small informal settlement found within Lenasia as illustrated in (South African History Online, 2020). It is predominantly a black community compared to other parts of Lenasia. Themb'Elihle was established as a result of the town of Lenasia's long-standing African presence and the fact that domestic workers have traditionally made up a sizable portion of the community (South African History Online, 2020). Many of these employees have built shacks or other modest structures in the area now known as Themb'Elihle between Extensions 9 and 10 because they choose to live in their own dwellings rather than on the property of their employers.

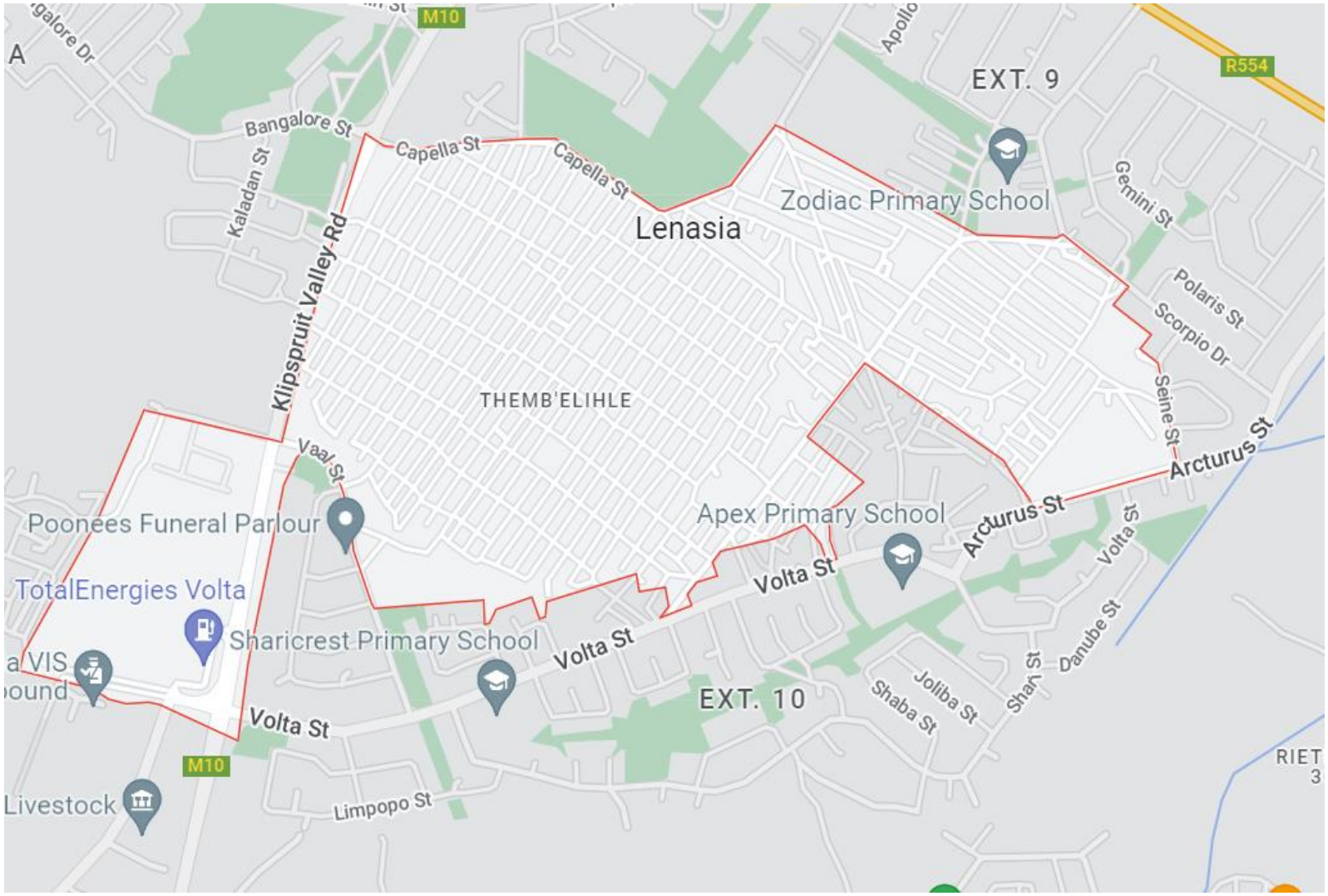


Figure 6 *Map of Themb'Elihle, Lenasia* (Google Maps, 2022)

Study design

This is an exploratory qualitative study. Qualitative research refers to research methods that do not use quantification methods or statistics to in trying to comprehend participant perceptions, behavior, and social interactions (Fossey et al., 2002). It can be described as "the study of the nature of phenomena, including their quality, different manifestations, the context in which they appear or the perspectives from which they can be perceived, but excluding their range, frequency and place in an objectively determined chain of cause and effect" (Busetto et al., 2020) Contrary to their quantitative counterparts, qualitative approaches are recognized for examining the nature of experiences. They are especially useful for analyzing complex treatments, focusing on enhancing interventions, and figuring out why something is noticed (or not). (Busetto et al., 2020). These methods are especially useful for shading light on subjective group experiences on health and illness, as well as participant-facility interactions (Fossey et al., 2002).

Methods of Data collection

Study population

Study population included both male and female participants between the ages 18-35 who live in Soweto. This particular age group is considered to be the working class in Soweto and Lenasia, and it accounts for 71% of the population. About 38.3% of the population competed their secondary education all the way to matric but only 9.3% of the population completed higher education and about 3.1% have no schooling at all (STATSSA, 2011). For this study, the inclusion criterion looked at participants who were Meadowlands and Themb'Elihle residents, participants that were between the age of 18 and 35 years old and were confirmed to have voluntary participation in the study. The exclusion criteria included individuals under or over the proposed age rand and failure to provide informed consent. Demographic information was taken before the data collection process in order to get background information of the participants.

Sampling strategy

In this study what is known as "purposive sampling" techniques were implemented in selecting study participants. As previously mentioned, qualitative research's main characteristic is having the researcher as the key instrument. The idea of qualitative research is to purposefully select participants or sites that best help the researcher understand the problem or research question.

Purposive sampling is a nonrandom form of sampling that does not have a set number of participants or follow any underlying theories (Etikan, 2016). The researcher makes use of their discretion and knowledge in selecting study participants (Rai et al., 2016) To correctly choose and approach eligible participants for surveys using this sampling technique, researchers must have prior knowledge of the population of interest. All participants are chosen because they meet the eligibility requirements. (Campbell et al., n.d.). Henceforth, participants were selected under the Child Health and Mortality Prevention Surveillance (CHAMPs) Program, particularly the Soweto-Thembelihle Health Demographic Surveillance System (STHDSS).

For the purpose of this study two sites; Meadowlands and Thembelihle cites which symbolize formal and informal settlements respectively, were selected because of the large number of youths in these clusters. The study also made use of what is known as “foot soldiers”. These were acclaimed members of the community that operated as gatekeepers to the community and had played a major role in the recruitment process. An effort was made to gather an equal number of participants from both sites; 32 participants were enrolled from Meadowlands and another 30 participants were enrolled from Themb’Elihle before saturation was reached.

Focus Group Discussions

Focus groups are the method of data collection used in this study. This method is used to obtain in-depth information on the perceptions, insights, attitudes, experiences, and beliefs from key stakeholders (CDC, 2018). Focus groups fall under the qualitative research tradition. The method is called a focus group discussion because it involves a predetermined group of people participating in an interactive conversation about a certain topic. This name sums up the method's main qualities (Hennink, 2013). Focus group discussions (FDG) are semi-structured forms of verbal exchange between the researcher and several respondents, who are convened to take part in a group discussion (Seal et al., 1998). The interaction between group members is prioritized in a focus group setting. Instead of answering questions, the group members are encouraged to talk with one another, offering their thoughts and comments on each another's experiences or points of view (Wong, 2008).

FDGs give a pre-selected group of people with similar backgrounds the chance to talk about their experiences with the study topic with the facilitator; this allows the researcher to gather data and understand information resulting from a group's insight (O.Nyumba et al., 2018). Focus groups are

used to generate a wide range of research topics much quicker and in a short space of time, making them the situatable method of data collection for this study (Hennink, 2013). With alternative data collection techniques, like interviews, this could not have been possible. Focus group discussions were chosen for this study because its goals and objectives were to gather general perceptions of young people. Since no sensitive subjects were covered in the study, group conversations could take place without risking the emotional trauma or potential stigmatization of study participants.

In less than two months, a total of 8 FDGs were done for this study. Each focus group contained a total of 8–6 people. Separate interviews were conducted with men and women. This split was an effort to gather data from participants with comparable experiences and it ensured participant comfort, allowing for more lively and engaging discussions. Participants were asked questions pertaining to the research objectives presented in the form of a discussion. An FDG guide was created to act as a guide for the group discussion ensuring logic, flow and elimination of ambiguity and repetitiveness of questions during the focus group discussions. The FDG guide was pre-tested in-house with WITS VIDA colleagues to guarantee the tool's validity before being used in the field this also ensured that all data collected had an element of reliability. Each FGD took about 1 hour and all contents of the FGD were audio-recorded with permission from the participants. All recordings were later transcribed and translated to prepare for data analysis.

Research tool

During the focus group discussion, the facilitator used a focus group guide, which is a set of questions and prompts. Typically, the researcher will introduce a topic and give the members opportunity to respond to one another's views (O.Nyumba et al., 2018). In this study the FDG guide had been developed to guide the facilitator during the discussion. The guide consisted of different sections with different questions and prompts pertaining to the main research questions. It was structured in a way that allowed for the discussion to flow between participants and to avoid repetitiveness. With opening questions, main research questions and closing questions.

Ethical considerations

The researchers ensured that no ethical issues were encountered during this study. The researcher ensured that all ethical principles are followed and adhered to, including informed consent, privacy, beneficence, voluntary participation and confidentiality. Before initiating any process of data collecting, participants' verbal and written informed consent was sought in order to comply

with ethical requirements. Names and/or any other details that would have allowed participants to be identified were excluded from the data analysis process in order to maintain confidentiality. The focus groups' questions were not triggering (as to cause any phycological hard) but rather simple inquiries that were simple enough for the participants to respond to in order to uphold the beneficence ideal. The discussions with the communities were held in a secure area to avoid any breech of primary. HIt was made clear to the participants in every session that the study's data would only be used for scholarly purposes. The idea of voluntary participation was established during the study since participants were made aware of their right to withdraw at any time. The University of Witwatersrand Human Research Ethics Committee granted ethical approval number H22 01 17. The researcher made sure the rules set forth by the research committee were followed.

Translation, Transcription, and Data analysis

The next section illustrates the method of data analysis used by the researcher to analyze and interpret data collected during the focus group discussion. The data analysis process for this study followed five basic steps; compiling, dissembling, reassembling, interpreting and concluding (Castleberry & Nolen, 2018), as explained below.

Translation and Transcription

Transcription and translation involves compiling data and are the first steps in data analysis for qualitative research. Transcription is the process of listening to the audio recorded files collected during the focus group discussions and putting down what was said in writing (McLellan et al., 2003). The listener writes the content of the audio word for word into transcripts which will be systematically reviewed, grouped into themes (often through a process of coding), and analyzed for content (Bailey, 2008). According to Castleberry and Nolen (2018) literature transcribing process is important for qualitative research as it allows the researcher to become to acquainted with the data (Castleberry & Nolen, 2018). Translation on the other hand is the process of transforming written content into one language such as English (Day Translations, 2018). It is considered best practice to first transcribe an interview in the original language and then translate it to the original one. For the purpose of this study the researcher made use of research assistants to assist with the transcription and translation process. The audios were transcribed and translated into English and then put into Word document files that were password protected and only available to the researcher and research assistants. Quality checks were performed on all

transcripts, consultation for clarity on what was said during the discussions between the researcher and the research assistants was constant.

Data Analysis

A thematic approach was adopted for this study's qualitative analysis process. Thematic analysis is an approach of "identifying, analyzing, and reporting patterns (themes) within data" (Guest Greg et al., 2011). Sorting and organizing all of the transcribed data into one document was required as the initial stage in thematic analysis in order to better handle the material (Seers, 2011). The qualitative software ATLAS.ti Version 22.2 was used to assist with managing and organizing data. From the data set a list of topics that arose during the focus groups were compiled. This is the process of dissembling data, in other words taking the data apart and creating meaningful groupings or codes (Castleberry & Nolen, 2018). Codes can be defined as labels that are assigned to a piece of text in the transcript and can be used to identify and summarize important concepts in the data set (Crosley, 2021). The process of coding involves selecting interesting features of the data systematically across the entire data set. The next step of analysis involved selecting codes that were recurring multiple times throughout the data were then grouped together to form themes. The development of themes looks at reassembling the data by creating patterns in the codes (Seers, 2011). Interpretation of the codes and themes was the next stage of data analysis. This is the process of giving meaning to what was discovered, interpreting the data, providing explanations, drawing conclusions, extrapolating lessons, generating inferences, and otherwise imposing order. The final data analysis was to conclude. While interpretations are making of the identified and defined themes, conclusions are the response to the research questions or purpose of the study (Castleberry & Nolen, 2018).

Conclusion

This chapter was able to discuss the methodological approaches used to conduct research and gather data needed to achieve the research objectives. The chapter provided background information on the research study site by providing demographic and regional information of the two clusters involved in the study. The chapter also gave an elaborate description of the methods of data collection, including the study design incorporated in the study and the selected research tool which has been focus groups discussions. In addition, the chapter was able to provide the different forms of sampling techniques that were used to enroll suitable participants to take part in

the study. The chapter discussed the ethical principles that were followed in this study. Lastly, the chapter looked at the methods of qualitative data analysis used to generate results from the focus groups as well mentioning some obstacles that were faced during the research process and how this was rectified.

CHAPTER FIVE: FINDINGS

Introduction

The following chapter will cover the results of data analysis and will provide an interpretation to the data collected during the focus groups discussions. The data will be presented according to the research objectives and in line with the theoretical frameworks discussed in chapter three.

Demographics information

The demographic information of respondents taking part in the focus group discussions were collected and recorded. Table 1 provided a summary of the different demographic information collected.

Table 1 Frequency table

Variables	**Frequency (n)**	**Percentage (%)**
Gender		
Male	31	50.00
Female	31	50.00
Age		
18-22	29	46.77
23-28	21	33.87
29-35	12	19.35
Level of education		
Primary Education	20	32.26
Some high school (did not complete)	33	53.23
Matric (Grade 12)	5	8.06
Some tertiary education (did not complete)	4	6.45
Tertiary		
Employment status		
Employed	2	3.23
Self-employed	3	4.84
Part-time employment	7	11.29
Volunteer work	10	16.13
Student	19	30.65
Unemployed	14	22.58
Other	6	9.68
Marital status		
Single	50	80.65
Married	0	0
Divorced	1	1.61

Widowed	0	0
Dating	8	12.90
Dating and living with partner	3	4.84
Religion		
Christian	44	70.97
African (Traditional)	17	27.42
Other	4	6.45
Vaccination status		
Yes	25	40.32
No	37	59.68

Age Range

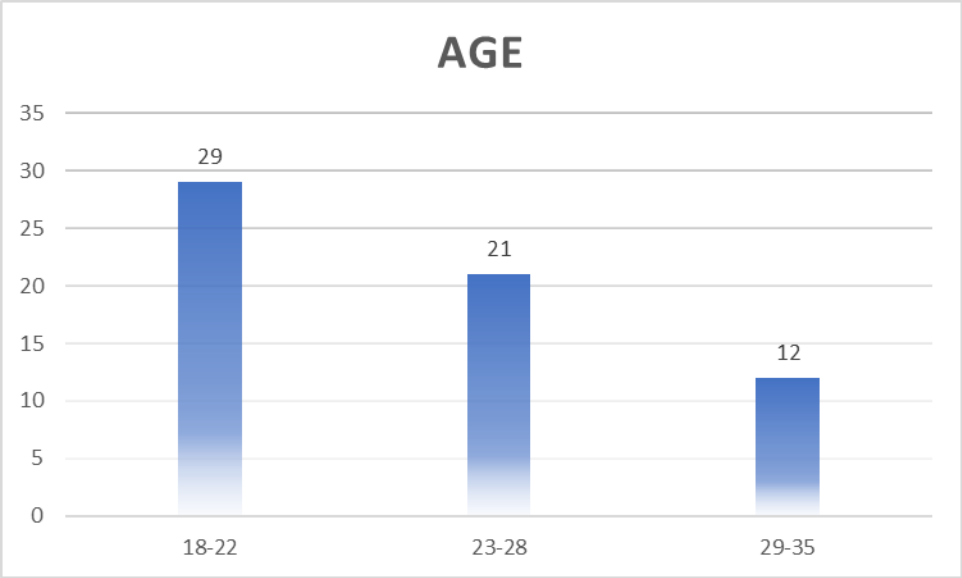


Figure 7 Age

Education Levels

A majority of the respondents in this study were about to complete high school all the way matriculant level. Very few participants were able to get a tertiary education and fewer were able to complete their education at tertiary level. This can be seen in *figure 1* below.

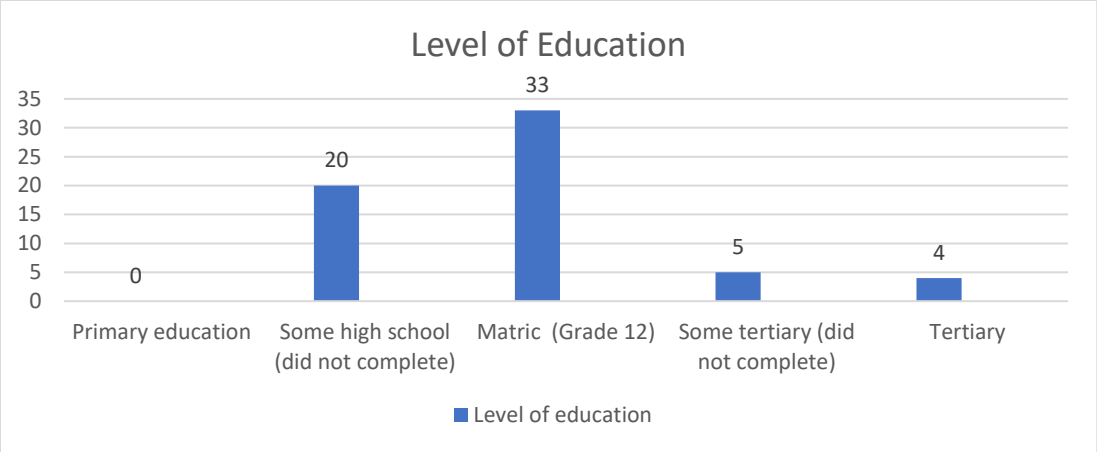


Figure 8 Level of education, Data records

Employment status

With the selection criteria involving youth, a majority of the respondents were students, either being in secondary school or tertiary education. A larger number of the respondents were unemployed, some working part-time or doing volunteer work and some being self-employed. A very small number of the participants had full-time employment.

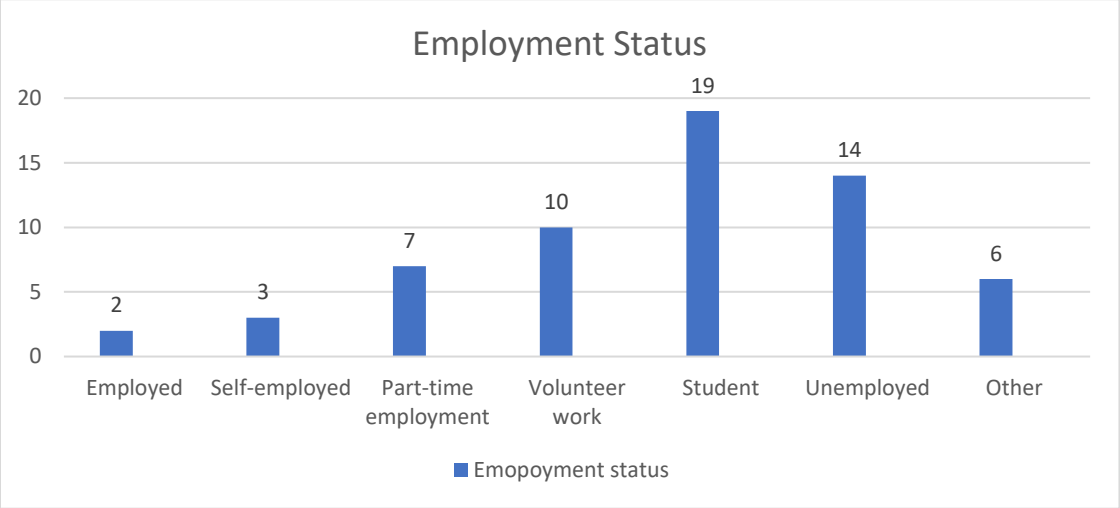


Figure 9 Employment Status

Vaccination status

The aim of the study being to understand what would discourage or motivate this particular group of participants to get vaccinated, however vaccinated status did not form part of the selection

criteria. Reports show that 60% of the respondents were not vaccinated and only 40% had received at least one jab of the Covid-19 vaccine.

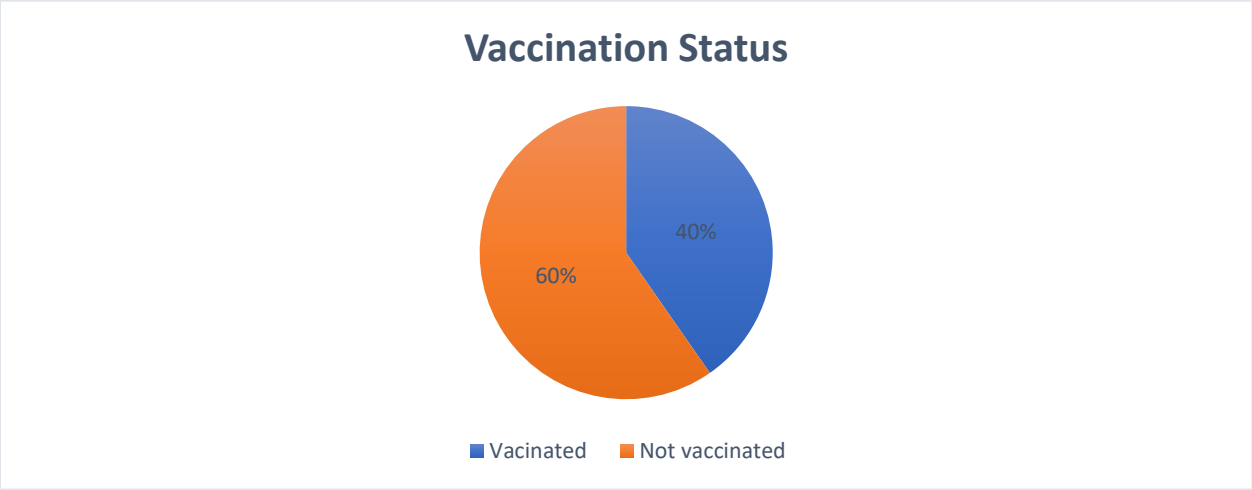


Figure 10 Vaccination status

Barriers and motivations for Covid-19 vaccination

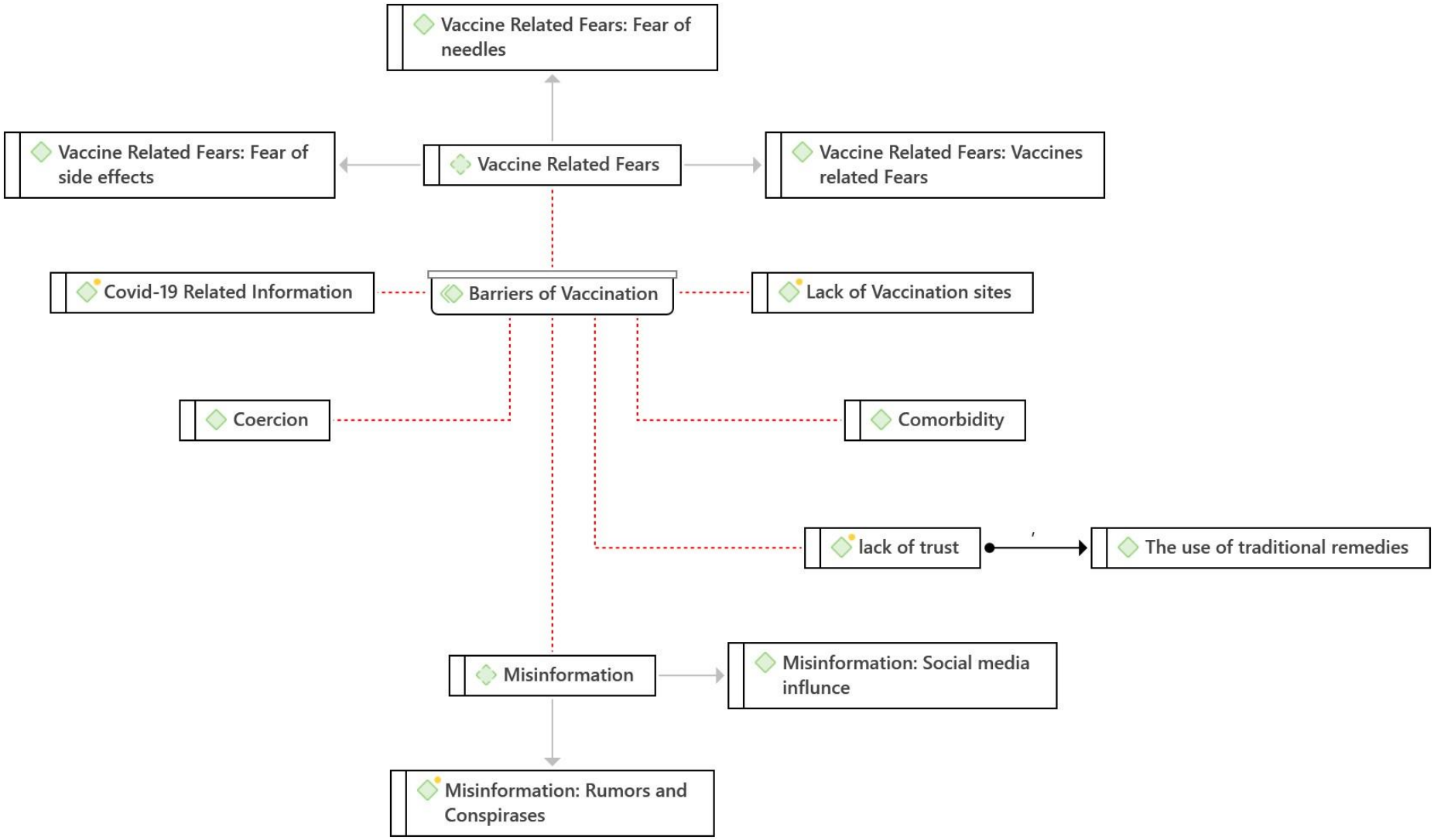


Figure 11 Barriers to covid-19 Vaccination

Barries of Covid-19 Vaccination

This study has found that there were several barriers to Covid-19 vaccination, including: Covid-19 vaccine misinformation and fears; lack of trust; Coercion and comorbidities. The pseudonyms identify the study site and the gender of the group discussion activity hence MEAFDG2F would be meadowlands focus group discussion for females.

Misinformation about Covid-19 Vaccine

This study found that participants had difficulties in interpreting information related to COVID-19 vaccines. A few participants believed they were not given enough information to decide whether or not to get vaccinated. They explained that the information that was available to them failed to properly educate them on the pros and cons of getting the Covid-19 vaccinations. A male participant mentioned that he **needed proof that vaccines work** in order to get vaccinated, saying,

> *"…If someone can come and tell me or prove that the vaccine works, and it has no side effects maybe I can get vaccinated…" MEAFDG1M*

A few participants remarked about how they had never been told the benefits of the Covid-19 vaccines and had only been given information on the negative aspects of vaccination. A male participants mentioned **only knowing the negative sides of the vaccine** and not the positive side of it, saying,

> *"…I just know the bad [side] of the vaccine and also, I do not know the good side of it..." MEAFDG1M.*

Another participant concurred and said,

> *"…The must show us the positive sides of the vaccine..." THEMBFDG1F*

A few participants voiced their displeasure with the manner in which Covid-19 information was being communicated. A female participant discussed how the information available is more depressing than motivating, how it **lacks any educational component** for individuals who wish to learn more about the vaccines in order to make an informed decision regarding vaccination. She said,

> *"…The information is s more scarring and threatening rather than encouraging. They should come to us and teach about the virus and the vaccine that would*

help us make informed decisions instead forcing us to do it, it's not helping the situation..." THEMBFDG1F

Another participant added the information provided on Covid-19 vaccines causes **panic which results in the sharing of misinformation**. She said,

"...You get information that terrifies you, and you don't full information on the subject, you panic and want to share with the next person, and you are hoping they perhaps know better..." THEMBFDG1F

Study participants addressed the lack of information regarding **the ingredients of the Covid-19 vaccines**. There is confusion regarding the ingredients that are used to make a vaccine. A male participant said,

"... people don't to get vaccinated because they don't know what is in the vaccines. People want to know what is being injected into their bodies. The fact that we don't know what is in the vaccines results in us scared to get vaccinated..." MEAFDG2M.

COVID-19 vaccine related Misinformation and fears

The study found that Covid-19 vaccine related misinformation and fears were a common barrier amongst this study population. Misinformation and conspiracies regarding Covid-19 infection and vaccines resulted in fear of the pandemic thereby, making people more prone to accepting false information regarding Covid-19 vaccinations. Consequently, people's opinions and beliefs were impacted by this. Of particular interest for this study population were the prevailing rumors and conspiracies.

Rumors and conspiracies

Study participants reported that there were rumors and conspiracies that were spreading amogst there community. A few participants mentioned that there were **expired vaccines** that were being given to people. One participant said,

"...Yes, and there was a lot of talking because of the expired vaccine and some were saying when you get vaccinated you would turn into a monkey. So there were so many rumors..." MEAFDG1F

Another participant mentioned that it affected **one's fertility**, saying,

> *"...Some say it will affect you when it comes to having children, like you will not have children…" THEMBFDG2F.*

These participants spoke about how the spread of misinformation insights fear in people, making them scared to go and vaccinate. A few participants talked about **fear of death**, saying,

> *"…Yes, I think people are scared because they hear a lot of stories of people who have vaccinated dying, so I think that's part of the reason people don't vaccinate…" MEAFDG1F*

In addition to fear of death another participant mentioned that there is conspiracy to **reduce the population of black people**, saying,

> *"…I think people had this fear because at the very beginning people were dying from the vaccine after vaccinating, and there was a rumor that the government is trying to decrease the number of black people. So, I think that is what made people not to be really sure about the vaccine, because they were thinking, what if am next, because am not really sure if they were trying to decrease the number of black people. I think that is what made people think that they are trying to kill us…" MEAFDG2M*

Social media influence

The spead at which misinfromation spreads is largely influenced by social media. Because they are more likely to use social media platforms, youth in particular are more exposed to false information. Participants discussed the influence social media had on their decision to get vaccinated. A few pariticipants mentioned Facebook, twtitter ad the most likely sources of misnformation. A female participant reported she got infromation from these sources saying the **vaccine does not prevent one from being infected**. She said,

> *"…Very bad, especially Facebook and Twitter it was like we were going to die because they were saying the whole president got vaccinated but still got infected and he had to go and quarantine, so what about us who has just taken the vaccine..." MEAFDG1F*

Another added people tend to believe these sources of information because of their **popularity**. She said,

> *"…You will end up believing that information because someone will post about it and get many likes so that will make you believe that kind of information..." THEMBFDG2F*

A few participants reported that there was a rumor being spread on social media that made them too scared to vaccinate. For example, a male participant spoke about fear of being **microchipped** through the vaccine. And he said,

> *"…As for me I did not have time and I was also scared of being vaccinated because there are stories that the vaccine has a microchip and even on Tv and Social media they will say that there is a microchip on the vaccine that they will use to track us down, but Covid has affected us so way too much..." THEMBFGD2M*

Another participant acknowledged the changes in **dynamics of social media** and how some information on social media platforms cannot be trusted. He said,

> *"…Usually, social media is more like a bible if may put it like that, bible is more like different opinions coming from different people so that is a bible and social media is also like that, so they are going to tell you something else and someone will tell you something else the next day…" MEAFDG1M*

Fears of needles, vaccines, and their side effects

This study found that there were genuine fears amongst the study participants relating to needles, vaccines in general and their perceived side effects.

Fear of needles (Trypanophobia)

Fear of needles, also known scientifically as Trypanophobia, was a genuine concern for some study participants who stated that their refusal to receive vaccinations was due to their **fear of needles**. A male participant aptly said,

> *"…They are so afraid of needles such that they don't even go to get tested when they are sick and showing symptoms. Ask them, when last did they get tested?*

How can someone be afraid of a mere needle with all the people dying every day… please! Perhaps if there can be other methods to vaccinate such oral pill or medicine, maybe then people will get the vaccine…" MEAFDGFDG2M

Specifically, a female participant said that her **fear of needles** hindered her from getting vaccinated, she said,

"…Because am not vaccinated as yet and honestly speaking am also scared of the tests and the needles, so that is also part of the reasons why am not vaccinated…" MEAFDG1F

Another added,

"…Personally, I fear needles, I am scared injections. But to other I would encourage and emphasize that they get vaccinated to protect themselves. I am 34yrs and I don't take injections. The only time I would get vaccinated it is when I am arrested, with a gun on my head and it is compulsory then I will vaccinate..." THEMBFDG1F

Because of this fear of needles some participants said they would consider vaccination if it came in the form of a pill or oral drops. A male participant mentioned that he would **prefer taking a pill** instead of an injection, saying,

"…Because I am scared of injections, and I think people were going to take the vaccine if it was a pill…" MEAFDG1M

Another said she would prefer **oral drops**, saying,

"…Only when the vaccine is in a form of drops that I can take orally then I will get the vaccine, not through the needle..." THEMBFDG1F

Fears rated to vaccines

This study found that some participants had a fear of vaccines in general such that they chose not to get vaccinated due to an extremely low vaccine confidence. With regards to the Covid-19 vaccine in particular, participants reported that they were concerned about the **vaccines' safety and effectiveness**. A male participant had this to say,

"…Yes, they even told us that they are not sure about it (the vaccine) and even the president said that and what I know about the vaccine, the vaccine is not a medicine because even when you are not infected by corona you have to go get vaccinated and they put corona inside you and also the vaccine does not prevent anything, but it creates a problem. I do not know of anyone who was been helped by the vaccine…" MEAFDG1M

Another added,

"…It is not 100% safe and guaranteed that is why I won't get vaccinated…" MEAFDG2M

Fear of side effects

Some participants were discouraged to vaccinate due to their **fears of vaccine side effects**. Side effects are secondary effects of vaccines which usually are undesirable. A male participant mentioned that hearing about vaccine side effects induced fear in him and because of this he would not vaccinate, saying,

"…I don't know much about the vaccine but, there are stories about vaccine that it's not safe, it has severe side effects… I am scared of that. But no, I will not vaccinate…" MEAFDG2M

Another participant mentioned that they believed that vaccines were meant to protect people from sickness and **not induce sickness through side effects**. This female participant said,

"…I don't trust the vaccine because of the side effects. I believe that it should protect me and not make me sick from side effects…" THEMBFDG2F

Lack of access to vaccination sites

Several respondents in this study lived in informal settlements, and because of their surroundings, they were able to address their lack of access to vaccination services. A lack of access came as a result of limited vaccination sites as well as restrictions on the number of people that can vaccinate at a time. A female participant mentioned that within her the community she knew of **few**

vaccination sites, and the few that were available were only able to vaccinate a few people at a time. She had this to say,

> *"…When COVID-19 begun, there were stalls (testing sites) everywhere but nothing for the vaccine and we don't even have a vaccination hub around here. We have the clinic only and at the clinic you are told all sorts of stories. No, but sometimes vaccinating teams do come and use the NGO facilities within the community. Even when they came, they told us that they only vaccinated a limited number of people on that day..." MEAFDG2F*

Some participants spoke of environment around the vaccination side. The health professionals administering were described as being **unprofessional** during the vaccination process. Two female participants had this to say,

> *"…It depends on the kind of nurse that you find, because some of them are rude so that makes us to be scared to go and ask for information…" THEMBFDG2F*

> *"…Exactly! Sometimes when I think of going to the clinic, I say to myself forget it. I just cannot deal with their attitude…" THEMFDG1F*

Another participant noted that they would prefer to **vaccinate in private hospitals rather than public hospitals** due to the difference in service delivery. He had this to say,

> *"…It was going to be better only if they allowed us to be vaccinated in private hospitals…" THEMBFDG2M*

Lack of trust

This study found that there was a lack of trust amongst this study population that hindered them from vaccinated. Trust issues came as a result of multiple issues and concerns regarding Covid-19 vaccination.

Lack of trust in Covid-19 vaccine rollout program

Several participants stated their mistrust was a result of the environment created by the vaccine program's implementation. Both feelings of being informed and of not getting enough information were voiced. They believed there might be information they were missing. A female participant stated that **lack in trust in the vaccine program** led to fear of death.

"...I don't trust the whole thing at all. I don't want to be injected with something I don't know. What if I get vaccinated and die on the spot? I have heard of people who got vaccinated and shortly died after or experienced severe post vaccination related illnesses. I am still alive even though I didn't vaccinate..." MEAFDG2F

Lack of trust in Government Authorities

Participants also expressed their **distrust in the leading sponsors of vaccine development, the process of vaccine development and the government authorities** that were responsible for vaccine distribution. A male participant said,

"...Elon Musk is Pfizer and Johnson and Johnson it is this guy who is this guy of computers, oh Bill Gates invested in Johnson and Johnson because he wants returns and so they need to rush us to go get vaccinated so that he can get his returns, so Ramaphosa's plans has failed..." MEAFDG1M

Another male participant spoke on how there was **miscommunication from the government**, saying,

"...The reason I don't trust vaccines is that we are told half-truth; the government says this and does the opposite. We are not given all information we need to know about this virus..." MEAFDG2M

Lack of trust in the vaccines

Due to a lack of trust some participants resorting to putting their trust in alternative methods to protect themselves from Covid-19 other than getting vaccinated. A few participants preferred not to vaccinate because they believed Covid-19 did not exist and that, even if it did, **their bodies and immune systems would still be able to protect them**. Two participants had this say,

"...I trust my immune system more than I do the vaccine..." MEAFDG2M

Another participant mentioned they felt not need to vaccinate because **they felt fine**, saying,

"...Probably there was a high chance that I am also not going to vaccinate, not because of the conspiracies, I just feel like am fine..." MEAFDG1F

A few participants opted for **home remedies and consulting traditional healers** for treatment and cures of Covid-19 infection rather than vaccinating. A female participant said she rather than going to a clinic to vaccinate she would rather use home remedies for her body. She said,

> *"…I don't trust the vaccine! they say if your body immune doesn't respond to the vaccine and don't heal from the side effects, you will die. That scares me. So, it is better to use home remedies than to go to the clinic and get vaccinated…" THEMFDG1F*

Another male participant mentioned that unlike vaccines **traditional medicines provided by traditional healers do not have any side effects** and because of these they are a better option than vaccinated. He said,

> *"…Traditional medicines don't have side effects. Traditional healers first taste the medicine to prove to you that what they are giving you is not harmful. Traditional healers should be permitted to work together with medical doctors in hospital…." THEMFDG1M*

Coercion

The study found that a lot of the participants **felt forced to be vaccinated** as government implemented a lot of policies related to Covid-19 vaccine rollout which affected employment, school attendance and travel. A female summed up this feeling by saying,

> *"…Because they were threatening us, as she is saying that because if you didn't have a vaccination card you wouldn't get a job, if you don't have your vaccination card you won't get to the school premises, if you didn't have your vaccination card you wouldn't go out of the country, so we are being forced…" MEAFDG1F*

Comorbidities

This study found that a number of participants within this study groups had different comorbidities. When asked what prevented them from vaccinating a few participants spoke of **underlying health conditions** that prevented them from vaccinating. One female participant had this to say,

"...So, I am not vaccinated as yet because when the roll out of vaccine started, I was pregnant, and I wasn't sure how it is going to affect my baby and I haven't vaccinated now because am breast feeding now..." MEAFDG1F

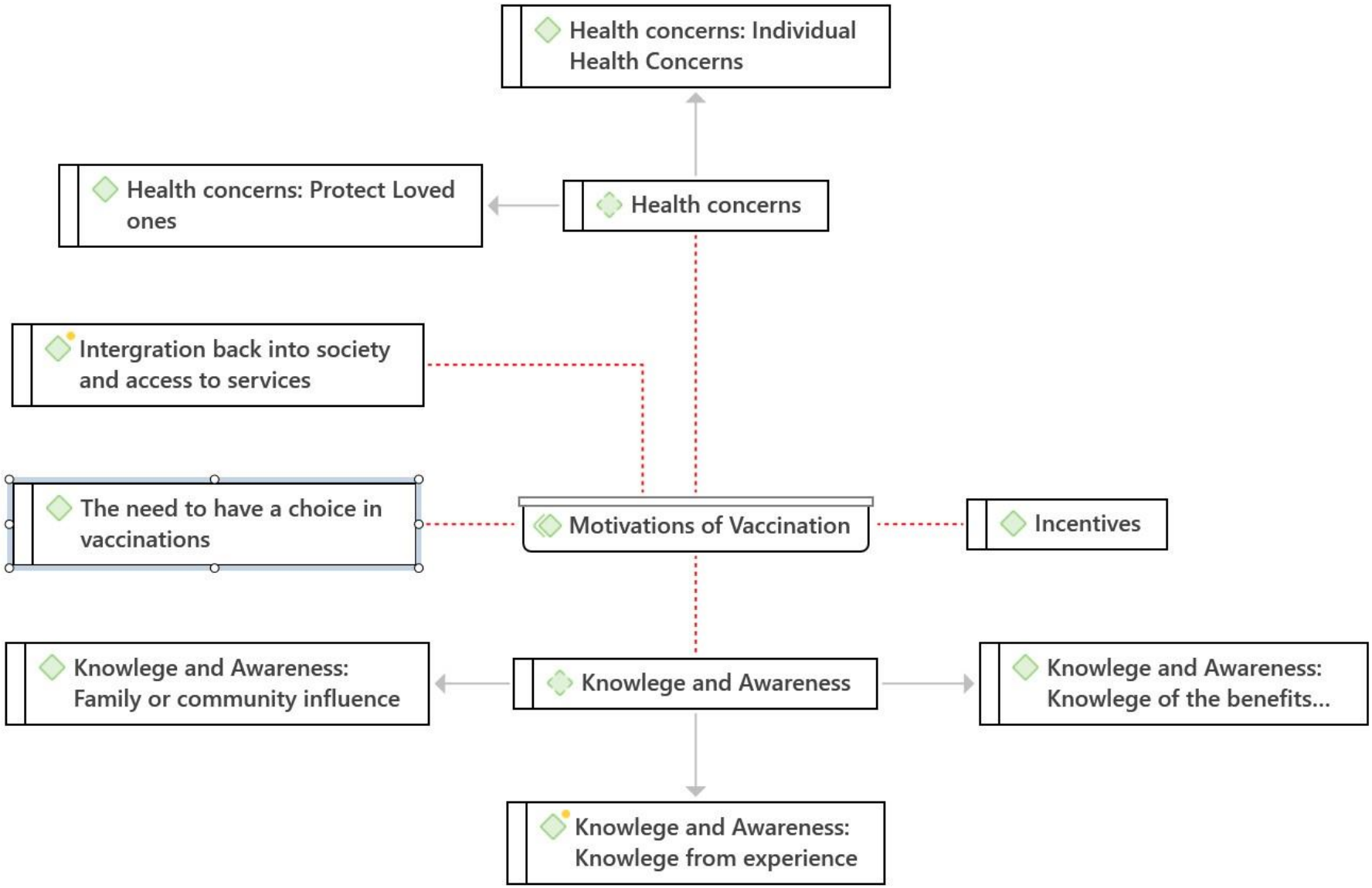


Figure 12 Motivations for Covid-19 vaccination

3. Motivations of Covid-19 Vaccination

This study found several motivations to Covid-19 vaccination, including health concerns, the need to integration back into society, the need to have a choice for vaccination, knowledge, and incentives. Figure 1 shows the main themes that were reported for vaccine motivations.

3Health concerns

At the top of the list respondents reported having health concerns as one of the major motivations for seeking vaccinations. Health concerns were related to individual health concerns and having a general concern for their loved ones.

Individual health concerns:

A few participants mentioned that they were motivated to vaccinate because they cared about their general health and wanted to **prevent Covid-19 infection**. When asked what motivated her to vaccinate a few participants said,

> *"...I didn't want to be infected or sick in such a way that I have to go to hospital..." THEMFDG2F*

A few participants said they vaccinated even though they did not believe in Covid-19, but rather because of **fear of contracting the virus** after seeing a family member or community member become infected. A female participant spoke on by saying,

> *"...So, what made me to vaccinate is that someone from my household had Covid, so I also did not want to get it as well. Hence, I went to vaccinate, but otherwise I don't believe that Covid-19 exist..."*

Another participant spoke of how vaccinating was a way to **protect themselves**, she said,

> *"...There are many sicknesses out there, it is better to protect yourself while you still can..." THEMFDG1F*

To protect loved ones

Some respondents reported getting vaccinated because they were motivated to **protect their loved ones** by preventing the spread of infection. A female participant spoke about being motivated to vaccinate in order to protect her child and to stay safe in her workplace. She said,

"…To protect my baby and because I work with people, so I do have to be safe but also because of the restrictions and the travel limitations if you are not vaccinated…" MEAFDG1F

Integration back into society and accessing services.

This study found that a common motivation for vaccination in this study group was the need to integrate back into society and to access basic services. Due to the pandemic, basic services had been limited or inaccessible to the general public in order to curb the spread of disease. For the most part, these services required Covid-19 vaccination certificates to be used. The majority of the participants said they got their vaccinations so they could use these services and be reintegrated into society. A participant mentioned that her motivation for vaccinating was to avoid **Covid-19 limitations**, saying,

"… but I think my main reason for wanting to vaccinate is that you cannot go to certain places while not vaccinated. You know there are those limitations…" MEAFDG1F

Some participants reported vaccinating in order to have a better chance at **job hunting** or in order to keep their current jobs, a female participant had this to say,

"…I had an interview so again at the interview they wanted people who are vaccinated so that pushed me to get vaccinated…" MEAFDG1F

Another male participant added,

"…But then you can't be employed when you're not vaccinated..." THEMFDG2M

Some pariticipants reported to have vaccinated for **acamedic reasons** because many insitutions were reluctant to enroll unvaccinated students. A pariticipant mentioned vaccinating in order to aquire a vaccination certificate needed to admissions, saying

"…I had to get vaccinated so that I could get the vaccination certificate to submit to a school I applied for admission at for a learner ship. It will be up to

you to decide whether you want to further you studies or stay home…" MEAFDG2M

A female participant also added,

"…Because when you apply for varsity entry you must have a vaccination card…" THEMFDG2F

Covid-19 restrictions also included a travel ban in and round the counrty. This was a particulary an issue for indidvidulas that lived or had family memebers outside Johannesburgh. A few participants mentioned **the need to travel** to other provinces or outsdie the country to visit famiy and loved ones as a motivation to get vaccinated. A male participant had this to say,

"…I had to vaccinate because I travel over the boarders and they need to see our certificate, so I did not have a choice because I had to work and provide for my family and I am still going to die whether vaccinated or not.,," MEAFDG1M

The need to have a choice in vaccinations

In addition to integrating back into society and accessing basic services, participants in the study reported on the need having a choice in issues concerning vaccination of Covid-19. A male participant emphasized that **the decision to vaccinate should be choice** made after being offered the correct information to make an informed decision, he said,

"….We want to have a choice. Put more efforts to make us see the importance of it than forcing us. Don't lie to us, be honest and transparent. Some of us do our own research, therefore we know what is happening…" MEAFDG2M

Another parcicipant added,

"…It was supposed to be your right if you do want or you don't want to take the vaccine…"THEMBFDG2M

Knowledge about COVID-19 vaccine and vaccinaion

Additionally, knowledge had a significant impact the decision to get vaccinated. Participants were inspired to get vaccinated by the information they learned about vaccination, specifically its

advantages. They gained this knowledge either via their own experience and studies, through family and community, or both.

Knowledge on the benefits of vaccination

The advantages of vaccination could be described and explained by participants. These participants talked about the value of vaccinations and how they were protected by them. A male participants mentioned how the **Covid-19 vaccine was able to prevent severe illness**, saying,

> *"...For me you have to vaccinate so that the vaccine can boost your immune system and Covid will not infect you so easily..." MEAFDG1F*

A male participant shared his knowledge of **the benefits of the vaccination** by enecoruing fellow participants to get vaccinated, saying,

> *"...There are side effects; people have different immune systems which react differently to vaccines. When you go to get vaccinated you are given instruction to follow including being advised to avoid consuming alcohol for a certain period but we, blacks do the opposite of what we are instructed to do. In anyways vaccinating is not painful and before vaccinating you complete a form where you get to disclose any health conditions you have. They then tell you whether you will be vaccinated or not. Fellows brothers, there are no side effects, it's nothing but hearsays..." MEAFDG2M*

A female participant noted to **the impact of vaccination of the community** by saying,

> *"...I say yes because since the vaccine was introduced, new infection cases have decreased drastically..." THEMFDG1F*

Family and community influences

Some participants mentioned being motivated to vaccinate due to their family and community's influences. The people within their environments encouraged them to get vaccinated. A female participant said,

> *"At first I was doubting, I don't want to lie, until I saw my family being vaccinated and everything was okay and then I was like let me also give it a try*

and at the end of the day everybody will have to go and get vaccinate" MEAFDG1F

Another participant added,

"People who usually encourage us to get vaccinated, its elderly people, saying "my child go and vaccinate so that you may protect me, don't go and bring me sicknesses out there." THEMBFDG1M

Incentives to encourage people to be vaccinated

Some participants looked into the possibility of being vaccinated if rewards were offered. Some participants stated that financial incentives would be effective in encouraging them and their community to get vaccinate. A participant said that by porviding **monetary rewards** member of the community will be encouraged to vaccinated, saying

"…More vaccination sites in our community. Put money aside to give after vaccinating. Create more job opportunities. Make it interesting to get vaccinated, make us attracted to it and want to get it…" MEAFDG2M

A male participant mentioned that incentives are an **appropriate compensation for the suffering endured as a result of experiencing vaccination adverse effects**, saying

"…Compensate people with money if they suffer adverse effects after vaccinating, so that they learn that every time something goes wrong, they will lose money…" MEAFDG2F

Other participants wanted **nonfinancial incentives**. These respondents felt that improving living conditions would motivate them to get vaccinated.

"…I think if they were saying if you get vaccinated you will get a job then will we go running to vaccinate, but because Covid has made a lot people to lose their jobs…" THEMBFDG2M

CHAPTER SIX: DISCUSSION

Introduction

This discussion chapter explains the finding of this study of which was primarily meant to understand the barriers and motivations behind Covid-19 vaccination among young people in Soweto, South Africa. In order to explain the findings, the study made use of the Health Belief Model (HBM), which has been found to be an effective approach for analyzing vaccination intentions (Shmueli, n.d.; Zampetakis & Melas, 2021). The chapter starts by discussing the social demographics of the study population before getting into the vaccine barriers and motivators.

Factors influencing the decision to not vaccinate.

Individuals in this study were reluctant to vaccinate due to perceived barriers that they faced including exposure to misinformation, fears of needles, vaccines and side effects, lack of access to vaccine sites, a lack of trust issues, coercion, and comorbidities.

Perceived barriers to vaccination

Perceived barriers is a component of the HBM were found to have a direct effect on the barriers to vaccinate. According to the HBM model perceived barriers are beliefs that an individual is restricted from performing a certain health behavior (Shmueli, n.d.). Covid-19 related misinformation was identified as the strongest barrier in this study. In order to link the HMB to Covid-19 related misinformation it has to be made clear that misinformation is a public health concern (Houlden et al., 2021). The HBM states that if beliefs about the difficulty of getting vaccinated against diseases like COVID-19 and how serious and susceptible they are affecting vaccination intentions, then false information that skews these beliefs may have a negative impact on vaccine reluctance (Houlden et al., 2021). Previous studies have shown that the spread of misinformation during pandemic could have an impact on individual health outcomes (Bursztyn et al., 2020). Studies have also shown that Covid-19 vaccines have been beleaguered by rumors and conspiracies theories (Love et al., 2020). In this study misinformation gave rise to rumors and conspiracy theories that were found to be rife amongst the youth in Soweto. The study showed that it was mainly through social media platforms in which misinformation spread within the community. In most cases this type of information incited fear that would defer them from getting vaccinated. Exposure to misinformation and its effect on vaccine intent has been explored in different studies (Bursztyn et al., 2020; Loomba et al., 2021; Love et al., 2020). These studies have

shown that the vaccine intent decreases following exposure to misinformation. In this study it was also found that misinformation can be detrimental to vaccine uptake as it introduced phobias to vaccines through fear of side effects creating anxieties. The fear of side effects are made worse by videos and electronic messages sent out on social media. Social media is an innovative way of sharing information; however, currently in South Africa, there are no regulations on social media usage giving it the potential to spread misinformation about Covid-19 vaccines. Therefore, the use of social media is a barrier in this study.

Of particular interest, the study discovered that younger adults were more like to be exposed to misinformation as they prefer to get health information via social media platforms compared to older individuals, exposing them to more Covid-19 misinformation (Adams, Ph, Schaub, et al., 2020; Lee et al., 2020). In addition, other social demographic characteristics such as employment was also associated with exposure to misinformation as a perceived barrier, with unemployed individuals being at a higher risk of exposure to misinformation therefore more likely to not vaccinate (Loomba et al., 2021), as was seen in this study. This study found that most of the unemployed youth were prone to being misinformed about the Covid-19 vaccine hence unemployment can be considered a risk factor to Covid-19. This is particularly a matter of concern for the South African setting where the rate of unemployment is high and rising as compared to other countries.

Perceived severity and barriers to vaccination

Another element of the HBM is perceived severity, seen in the fear of side effects which is a real fear for many people in this study. The HBM states that perceiving negative outcomes in performing a health behavior may lead to reluctance and hesitancy. Studies have shown that fear of side effects is a common barrier that can demotivate individuals from getting vaccinated (Dubey et al., 2020; Phillips et al., 2022), however, the fear of side effects among the youth has not been studied particularly in Soweto. This type of information is needed in order to tackle to vaccines fears and concerns. In this study, participants who thought getting vaccinated against COVID-19 would have unfavorable outcomes, such as severe side effects, reported being less willing to get vaccinated.

Perceived barriers and barriers to vaccination

This study also identified a few key structural barriers to vaccine uptake including lack of access to Covid-19 information, vaccine sites being inaccessibility and unprofessional healthcare worker attitudes, lack of trust in the government. These were identified as perceived barriers that were related to accessibility concerns in this study. In accordance with the HBM, the possible drawbacks of a health action prevents people from engaging in a behavior, this includes the presence of environmental barriers (Houlden et al., 2021). In this study a lack of access to Covid-19 information and the lack access to vaccination sites were reported. Respondents mentioned that they had difficulties in understanding the Covid-19 information disseminated by the government and medical professionals, which focused more on the negative than the positive aspects of vaccination. As a result, respondents in this study were less likely to vaccinate until they felt they had enough of the right information about the vaccines. Due to a lack of information, participants in this study developed a distrust of both the government agencies overseeing the vaccination rollout and the vaccines themselves. Previous studies have indicated that poor vaccine confidence in communities is associated with lower vaccine uptake, and that communities with lower levels of trust in their governments and in health authorities are less likely to embrace vaccination than groups with higher levels of trust (Perry, 2021). This is of particular interest in South Africa were the youth in particular have a hard time trusting the governments or any government officials (Burger, Buttenheim, et al., 2021). Some respondents reported that they preferred to vaccinate in private owned facilities rather than government owned facilities, which are more accessible.

The HBM model states that individuals that experience perceived barriers are less likely to perform a certain health action and, in some cases, may find alternative means other than the proposed intervention. Due to a lack of trust and information respondents in this study felt the need to take matters into their own hands in preventing Covid-19 infection because they lacked faith in vaccines. Respondents said they trusted home remedies and traditional healers more than the available vaccines for Covid-19. This is not new information as previous studies have shown that most Africans more and more inclined to trust traditional and cultural forms of healing rather than western medicine (Chali et al., 2021). However, these studies were reflective of older individuals who had an understating of cultural norms. This study shows that information on culture are in fact passed down to the younger generations who carry their traditional values and apply them when making health decisions. Some respondents in this study believed that their immune systems were capable of fighting off the Covid-19 infection on their own, this brought up the element of

perceived susceptibility. This was particularity prominent in younger participants who felt they were healthy as it has been shown in different studies (Adams et al., 2020; Fernandez et al., 2016; Grandahl & Nevéus, 2021).

Factors influencing the decision to vaccinate.

This study identified several motivations to Covid-19 vaccination including, health concerns, the need to integrate back into society, having knowledge on vaccinations, and the possibility of being awarded incentives. These motivations have been identified as perceived benefits, a component of the HBM that speaks to the belief that performing a certain health behavior will lead to desirable outcomes.

Perceived benefits and motivations to vaccinate

In this study having a concern about health and wellbeing was reported as a motivation to get vaccinated. Respondents felt that vaccinating could potentially improve their health condition or prevent it from getting worse. Furthermore, looking at another component of the HBM, perceived susceptibility, individuals with a higher-risk perception of getting infected by Covid-19 were more likely to be concerned about their health and more likely to seek vaccination. In this study individuals viewed vaccination a way of protecting themselves from severe infections. This corresponds with other studies where it has been illustrated that individuals who have a general concern about their health become more aware of ways to improve on it (Phillips et al., 2022) Moreover, among the South African youth vaccination was an extrinsic motivation to protect loved ones and other members of the community.

According to the HBM, despite perceiving an illness as a threat or not, individuals are inclined to find the benefits in performing a certain behavior despite given that the behavior will eliminate the threat. In some cases, non-health benefits are also considered to influence the decision to vaccinated (Strecher & Rosenstock, 1997). For instance, due to the Covid-19 restrictions posed by the government in order to curb the spread of infection, vaccination was also seen by the participants in this study as the only way to gain non-health benefits such as integrating back into society and accessing basic services. Furthermore, the social demographic show that participants in this study were either in school or in the early stages of their careers. Through vaccination respondents were able to present their vaccination certificates as proof of immunization while traveling, applying for jobs, and enrolling in educational institutions. This correspondents with

other studies that show that the youth are more likely to be affected by the impacts of the pandemic on the economy and daily living, therefore will seek vaccination in an attempt to get back to normal (Konle-seidl & Picarella, n.d.). Nevertheless, for some participants in this study this is viewed as a sort of coercion as well. Several participants mentioned that getting vaccinated shouldn't be required in order to access essential services, but rather should be a personal choice.

Cues to action and motivations to vaccinate.

Cues to action is another component of the HBM, it speaks to an individual's environment and how it affects their health outcomes. Aspects such as information, people and events found within the environment will guide an individual to undertake a certain health action (Strecher & Rosenstock, 1997). Having knowledge on the benefits of Covid-19 vaccination played a huge role in encouraging respondents to get vaccinated in this study. They received this information from trusted members of their families and communities. Previous studies have shown that the youth are less knowledgeable about vaccination as they have a lack of experience with vaccination compared to the older populations (Trayner et al., 2019). However, in this study with the age range of 18-22 (46.7%) followed by 23-28 (33,8%) being the most frequent, respondents were able to recognize the benefits of vaccination and were aware of them, making them more likely to get immunized. Many respondents also believed that educating people about the benefits of vaccinations was the key to encouraging them to get it. They expressed that by providing more awareness campaigns, in which individuals learn more about the benefits of vaccination, this could encourage more and more people to make the decision to vaccinated. Incentives was another identified as a perceived benefit to motivate for vaccination in this study. Previous studies have shown that monetary benefits are a powerful source of motivation (Brewer et al., 2022; Gorin & Schmidt, 2015; Yamin & Gavious, 2013). This corresponds with the results found in this study where some study respondents viewed financial incentives as an effective way to encourage immunizations in their community. Moreover, participants in this study were driven by more than just monetary rewards; they also believed that improving living conditions would increase community trust and vaccination rate.

Conclusion

This chapter has discussed the barriers and motivations that are associated with Covid-19 vaccination. Factors to that influence the decisions to not vaccinate included misinformation, fear

of needles, side effects and vaccines, as well as the accessibility concerns, a lack of trust and feelings of coercion. Factors that influenced the decisions to vaccinate included health concerns, the need to get back to access basic services, having knowledge on vaccinations and the possibility of getting incentives after vaccination.

CHAPTER SEVEN: CONCLUSION AND RECOMMENDATIONS

Conclusions

Vaccination is still the best form of prevention against Covid-19. In South Africa those between the ages of 18 and 35 have the lowest vaccine rates. The reasons for low vaccinations are complex. This study attempted to understand the low vaccination rates among this population by understanding the barriers and motivations towards vaccines uptakes. This study has shown that young adults are extremely influenced by the spread of misinformation, and although many have some sort of understanding what the vaccines are for and how they work, many are discouraged to vaccinate due to the misconceptions spread on social media. Some individuals experience motivations to vaccinate mostly through encouragement from their communities and families or from the need to protect themselves and those around them nonetheless, a conclusion can be made that barriers found in this study outweigh the motivations to vaccination against Covid-19 and this could account for the low vaccinations rates among the youth in this community.

Recommendations

The results of this study indicate that in order to boost vaccination uptake among young people, measures are required that particularly address the barriers and motivation that they face. Policy makers and medical professionals should make sure that enough information is supplied regarding the positive aspects of the Covid-19 vaccine rather than its drawbacks. Prioritizing communication between scientists, medical experts, and the general public will help ensure that all scientific knowledge is communicated in a way that the general public can understand. In addition, officials are urged to investigate the use of social media as a practical instrument for connecting with young adults and disseminating accurate information. The youth need to feel empowered enough to decide for themselves whether or not to receive vaccinations; otherwise, they feel pushed to do so and this may refuse the vaccines as retaliation. Studies are urged to look more into how to implement interventions and campaigns that are specifically designed for the youth. It would also be beneficial to research more on the gender disparities in the barriers and motivation of Covid-19 vaccinations. Furthermore, future studies are encouraged to look into vaccination incentives for the youth. Previous studies have many focused on monetary incentives, but it would be beneficial to look into other types of incentives that could motivate individuals to get vaccinated.

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Appendecies

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

Research Office

HUMAN RESEARCH ETHICS COMMITTEE (NON-MEDICAL)
R14/49 Nkhata

CLEARANCE CERTIFICATE	**PROTOCOL NUMBER: H22/01/17**
PROJECT TITLE	Understanding barriers and motivators of Covid-19 vaccine uptake among young people in Soweto, South Africa
INVESTIGATOR(S)	Miss B Nkhata
SCHOOL/DEPARTMENT	Pathology/
DATE CONSIDERED	28 January 2022
DECISION OF THE COMMITTEE	Approved Risk Level: Minimal
EXPIRY DATE	22 February 2025

DATE 23 February 2022 **CHAIRPERSON** _____
(Professor J Watermeyer)

cc: Supervisor : Dr N Myburgh and Mr A Sokani

DECLARATION OF INVESTIGATOR(S)

To be completed in duplicate and **ONE COPY** returned to the Secretary at Room 10004, 10th Floor, Senate House, University. Unreported changes to the application may invalidate the clearance given by the HREC (Non-Medical)

I/We fully understand the conditions under which I am/we are authorized to carry out the abovementioned research and I/we guarantee to ensure compliance with these conditions. Should any departure to be contemplated from the research procedure as approved I/we undertake to submit an amendment of the protocol to the Committee. **I agree to completion of a regular progress report. For Minimal and Low studies, this is due annually on 31 December. For Medium and High Risk studies, this is due twice annually on 30 June and 31 December.**

_____ 23 /02 /2022
Signature **Date**

PLEASE QUOTE THE PROTOCOL NUMBER ON ALL ENQUIRIES

WITS-VIDA

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Bernadatte Nkhata
MA Student
Faculty of Health Sciences
27 St. Andrews Rod
Parktown, Johannesburg, 2193

DEAR BERNEDATTE NKHATA,

This refers to you request to use the Wits-VIDA Health and Demographic Surveillance System population as a sampling frame for your Master's research study aimed at investigating barriers and motivators of Covid-19 vaccine uptake among young people in Soweto, South Africa.

It is my pleasure to inform you that your study has been granted access to use our HDSS as a sampling frame for your study.

However, for us to provide you with the sample, we will require you to present proof of ethics approval of your research proposal by the relevant body in your faculty.

Wishing you all the best in your academic journey.

Sincerely

Dr. Pedzisai Ndagurwa, Ph.D.
HDSS Programme Manager
10/02/2022
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wits-vida.org

WITS VIDA
UNIVERSITY OF THE WITWATERSRAND
VACCINES & INFECTIOUS DISEASES ANALYTICS

Wits VIDA Research Unit, Nurses Residence
Chris Hani Baragwanath Academic Hospital
Chris Hani Road, Soweto
Johannesburg, South Africa

Understanding barriers and motivators of Covid-19 vaccine uptake among young people in Soweto, South Africa

Bernadette Nkhata, MSc Vaccinology Candidate

I, …….., agree to participate in this research project. The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous.

YES NO

I agree that the researcher may use anonymous quotes in his / her research report.

YES NO

I agree that the interview may be audio recorded

YES NO

I agree that the information I provide may be used anonymously after this project has ended, for academic purposes by other researchers, subject to their own ethics clearance being obtained.

YES NO

…… (signature)

…… (name of participant)

…… (date)

…… (signature)

…… (name of person seeking consent)

…… (date)

INFORMATION SHEET

Dear Sir / Madam

My name is Bernadette Nkhata, and I am a master's student in Vaccinology at the University of the Witwatersrand, Johannesburg. As part of my studies, I am undertaking a research project where I am investigating the barriers and motivations towards vaccine uptake among young people in Soweto, South Africa under the supervision of Dr Nellie Myburgh and Dr Andile Sokani.

As part of this project, I would like to invite you to take part in a focus group discussion. This activity will involve sitting in a group of 6-8 people and discussing matters related to the study as a group and the process will take around 1 hour to 1.5 hours. With your permission, I would also like to audio record the interview using a digital device. This recording will be stored in a secured laptop and only the researcher will have access to this recording.

The interviews will take place at wits VIDA within the CHAMPs offices. As a participant in this study, you will be given R150 for transport as reimbursement. Other than the transport costs you will not receive any direct benefits from participation but there are no disadvantages or penalties if you do not choose to participate or if you withdraw from the study. You may withdraw at any time or not answer any question if you do not want to. Confidentiality and anonymity cannot be guaranteed in a study such as this because pre-existing relationships may lead to the unintended disclosure of participant information. Participants will, however, be reminded to refrain from using any identifying information of their own or other participants during the interview process.

If you have any questions during or afterwards about this research, feel free to contact me on the details listed below. This study will be written up as a research report which will be available online through the university library website. If you wish to receive a summary of this report, I will be happy to send it to you (optional). The data collected from this research project will be stored in a secure computer and will be kept for 2 years. With your permission the data collected from this research project may be used by other researchers in an anonymized format. If you have any concerns or complaints regarding the ethical procedures of this study, you are welcome to contact the University Human Research Ethics Committee (Non-Medical), telephone +27(0) 11 717 1408, email hrecnon-medical@wits.ac.za.

Covid-19 protocols.

Due to the ongoing pandemic, measures will be taken in order to ensure the safety of the participants and the researchers. Covid-19 protocols will include hand sanitizing before the data collection process. Participants will also be required to sanitize their hands after signing the consent forms. The wearing of masks will be mandatory during all stages of the data collection

process. Finally, social distancing will be implemented during the interviews. All participants will be required to seat at least 3 meters apart from each other and will be asked to ensure they are audible when having a dialogue**.**

Information regarding Covid-19 and safety measure can be found at the following websites:

https://www.nicd.ac.za/diseases-a-z-index/disease-index-covid-19/covid-19-guidelines/

https://www.health.gov.za/covid19/

https://www.who.int/emergencies/diseases/novel-coronavirus-2019

Yours sincerely,

Bernadette Nkhata

Researcher:

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Dr Andile Sokani

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FOCUS GROUP DISCUSSION GUIDE

Focus group details:

Thank you once again for taking time off your busy schedules to engage in this discussion. As mentioned, my name is Bernadette Nkhata and I am University of Witwatersrand student conducting a study that aims to look at the motivations and barriers towards vaccine uptake among young adults in Soweto, South Africa. This will be done in the form of a focus group discussion whereby participants will be expected to engage with one another and with the guidance of the moderator on issues regarding the topic at hand. The discussions will have a total of 6 people in each group who will be separated by gender; males and females will be separated. With your permission the discussions will be audio recorded and transcribed later. The discussion will be conducted at the Wits VIDA offices and will take no longer than 1/1.5 hours.

TOPIC: OPENING QUESTIONS (General experience)

1) What has been your experience with the Covid-19 pandemic?

2) How did the pandemic affect you and your well-being?

3) What changes have you made in your life since Covid-19 became a concern in South Africa? Masks? Social distancing? Sanitizing?

4) How are you currently staying safe from the virus?

TOPIC: KNOWLEDGE TOWARDS COVID-19 VACCINE

1) What is your general knowledge of the Covid-19 vaccine?

Probes:

a) Have you heard of the Covid-19 vaccines? What have you heard about the vaccines?

b) Where did you get this information from?

2) What do you think about the Covid-19 vaccines?

Probes:

a) From what you have heard, how would you say vaccines work to protect

you from Covid-19?

b) Do you trust the Covid-19 vaccine or are you suspicious of it? Why?

c) What do you know about the side effects that come with being vaccinated? Do you have a fear of the Covid-19 vaccine side-effects?

3) What rumors or conspiracy theories have you heard regarding Covid19 vaccines?

Probes:

a) Do you believe these rumors?

b) Why do you think people make these rumors?

c) What do you do about this type of information?

TOPIC: BARRIERS TOWARDS COVID-19 VACCINE

4) What are the barriers preventing you from getting the Covid-19 Vaccine?

Probes:

a) What are your fears and concerns about getting vaccinated for Covid-19?

b) What would stop you from making the decision to get vaccinated?

c) What has been the reaction to Covid-19 vaccines within your family, community?

6) What information has been provided to you regarding he Covid-19 vaccine and where do you get access to this information?

Probes:

g) Do you believe that you have accesses to sufficient information regarding Covid-19 vaccines? YES/NO… Why?

j) How has the media impacted your decision to get vaccinated?

5. a) Do have enough vaccination sites within your community?

Probes:

a) Do you feel you have the means to get to a Covid-19 vaccination site? Explain.

b) How far are you from the nearest vaccination site? Has the distance impacted your decision to get the covid-19 vaccines?

c) Have your community circumstances had an impact on your ability to get the Covid-19 vaccine? Expand.

h) How do you feel about the environment around the vaccination sites? Queues? Attitudes of health care workers?

TOPIC: MOTIVATIONS TOWARDS COVID-19 VACCINE.

1) Do you believe that it is important to get vaccinated? Why? Immunity?

2) What do you think are the benefits of getting vaccinated?

Probes:

a) Will the covid-19 vaccine stop you from getting infected? Yes/No… why.

b) Will the Covid-19 vaccine stop you from getting hospitalized? Yes/No… Why?

c) Do you think the Covid-19 vaccine will impact your health in anyway? Yes/No… why.

3.) **What are your motivations to getting vaccinated with the Covid-19?**

Probes

a) What kind of factors would influence your decision to get vaccinated?

b) Do you have family members that have been vaccinated? Did that motivate you to get vaccinated?

c) Has your school or work environment impacted your decision to get vaccinated?

d) Do you think you are being forced/coerced into getting the vaccinated? Why?

e) Do you believe getting the Covid-19 will benefit your well-being?

f) Do you believe that with the Covid-19 vaccine life could go back to normal?

4) Do you believe everyone should get the Covid-19 vaccine? Why?

Probes:

a) Do you believe that the current statistics for vaccine uptakes are enough?

b) Would you recommend the Covid-19 Vaccine to you family, friends and colleagues? Why?

c) If yes, what steps would you take to advocate for Covid-19 vaccines?

d) Do you think the government can do more to ensure people are getting vaccinated?

Campaigns?

Mandatory vaccination?

TOPIC: CLOSING QUESTIONS

1. Is there anything else you would like to say about Covid-19 vaccines?

2. What advice would you give to someone who is thinking about getting vaccinated.

Thank you very much