

Covid-19: The poor Covid-19 vaccine access in Africa.

What are the reasons behind the poor access of Covid-19 vaccines in Africa?

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Abstract

Despite the pandemic and initiatives such as COVAX that were put in place for fair and equal distribution of vaccines, the African continent remains the least vaccinated continent in the world. Incorporating evidence from articles, journals and policies, this study demonstrates that the African continent had the least and poorest access to vaccines. This research paper aims to understand why Africa has received the least vaccines and is the least vaccinated continent. The paper looks at the availability of vaccines in Africa and the appropriate options available in healthcare settings to receive Covid-19 vaccines. Literature is used by various scholars to understand the reasons behind the poor access to vaccines which have resulted to low vaccine uptake in Africa. It aims to look at the various contributing factors to this phenomenon, “why has the African continent been the least vaccinated?” To respond to these issues, this study uses the theories of classical realism and institutional liberalism to discover why Africa was the least vaccinated continent. Data has been collected from March 2022 and subjected to discourse analysis to help further understand the reasons behind the poor access of vaccinations during Covid-19 in Africa. We find that there are both internal and external reasons behind the poor access in Africa and both national and international factors have contributed to poor vaccine access.

Declaration

I declare that this study is my own unsupported work. I therefore submit it for the award of a degree in Masters of Arts specializing in International Relations at the University of the Witwatersrand, Johannesburg South Africa. This work has never been submitted in the past for the award of any other degree or examination in any other university.

Lumkile Thobile Xaba
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Coronavirus

Africa

South Africa

Covid-19

Vaccine nationalism

Vaccine diplomacy

The World Health Organisation

COVAX

GAVI

Vaccine hesitancy

Chapter one

Background

Throughout history, Africa has been known as the continent affected with diseases and citizens who are impoverished and labelled as the continent with the weakest health care systems (Nkengasong et al., 2020). Despite global aid and assistance from international organisations, the continent always seems to experience the slowest and longest recovery time and the recent Covid-19 pandemic brought this to light. The manner in which epidemics such as HIV/AIDs and Ebola are handled in Africa has always been a topic of interest in the international arena (Nkengasong, et al., 2000). In order to understand this research topic and why there is a delay and poor access to vaccinations on the African continent, it is necessary to look back at how other epidemics on the continent were dealt with. The scramble for vaccines in Africa is nothing new and has happened before. Some examples are with HIV and the H5N1 influenza. Africa has ended at the back of the queue each time (Nkengasong et al., 2020).

The antiretroviral treatment for HIV/AIDS entered into the market in the mid-1990s. The high prices that pharmaceutical companies put on these vaccines made them difficult to access and as deaths in rich countries plummeted, infected people were left to die across Africa (Nkengasaong et al., 2020). It has been estimated that between 1997 and 2007, 12 million Africans died waiting for life-saving drugs to reach the continent. HIV drugs were introduced to Africa in the mid-90s and whilst Aids-related deaths were falling sharply in the United States, they kept rising in Africa (Ruger, 2020). It took another decade for deaths to decline in Africa. In 2004, the avian influenza virus (H5N1) re-emerged which led to worries and fears of a global pandemic. An estimated five years later, another strain of pandemic flu emerged (H1N1) and wealthier countries placed large pre-orders of vaccine, buying almost all the doses that could possibly be manufactured (Ruger, 2020). Richer countries began to secure their own countries supply above that of others. This is why it is important to understand why Africa remains the least vaccinated continent despite efforts ensuring fair and equitable access are put in place.

The COVID-19 case

Coronavirus diseases (COVID-19) is an infectious communicable respiratory disease caused by a new strain of virus reoffered to as coronavirus 2 (SARS-Cov-2) (WHO, 2022). Scientists

are still learning about the disease and initial evidence suggested that the virus originated in animals such as bats (NIH, 2022) and started spreading from people that had been infected by civets (NIH, 2022). According to the NIH (2022) there is still no evidence on the origin of SARS-Cov-2 which caused the Covid-19 pandemic. However, scientific evidence so far suggests that SARS-Cov-2 likely resulted from viral evolution in nature and hurdled to people through an unidentified animal host (NIH, 2022). The disease spreads from person to person through infected air droplets that occur when one sneezes or coughs (NIH, 2022). It can also be transmitted when people have contact with hands or surfaces that contain the virus and touch their eyes, nose or mouth with their contaminated hands (ACDC, 2022). Covid-19 was first reported in China on the 1st of December, 2019 and continued to spread throughout the world. On the 14th of February 2020, the first case of covid-19 was reported on the African continent in Egypt (Africa CDC, 2020).

Covid-19 has had detrimental effects not only from a health perspective but on Africa's economy and livelihoods (OECD, 2020). Covid-19 had various disastrous impacts on the continents' already weak health systems and soon turned into a social and economic crisis that affected the African continent in three ways. Firstly, through the lower trade and investment from China in the immediate term of the pandemic. Secondly, there was a demand slump associated with the lockdowns in the European Union and OECD countries and thirdly, a continental supply shock affecting domestic and intra-African trade (OECD, 2020). Covid-19 took a toll on commodity-driven growth models that failed to provide more and better jobs as well as improving livelihoods and well-being. Soon as African governments took note of the widespread of the Coronavirus disease, necessary precautions were put in place to prevent it from spreading any further resulting in hospitalisation and death. Measures such as the wearing of masks, encouragement of regular hand washing and sanitising, non-pharmaceutical interventions as well as social distancing through border and travel restrictions, school closures and bans on large gatherings were put into place (OECD, 2020). Among these, the most viable and effective measure of prevention were Covid-19 vaccines (NIH, 2022).

When a person is vaccinated, they are very likely to be protected against the disease. The vaccination of more people lessens the likelihood of Covid-19 spread as more people become immune to the virus; this is understood as herd immunity. As the disease continued to spread there were great global efforts in search of viable vaccines to control the infection rates (NIH, 2022). There have been massive on-going vaccination programmes against Covid-19 in various countries across the world. Initiatives such as COVAX (Covid-19 Vaccines Global Access)

were put in place to ensure that there is an equal distribution of vaccines on a global scale. The focal drive of COVAX, which is spearheaded by the World Health Organisation was to ensure that there is an equal distribution of Covid-19 vaccinations to all countries (WHO,2022).

It is believed that the immunization against Covid-19 was a global public good (Bagdandy, 2021). Vaccinations are important in helping against communicable diseases such as Covid-19. Due to globalization and technological advancements, communicable diseases had no longer been so much of a threat. The advancement in travel and health care has made it easier to access treatment for such diseases. However, communicable diseases are still an issue in many underdeveloped and developing countries and the main priorities of the COVAX facility is to make sure that this is not the case with Covid-19. However, despite these initiatives and great efforts, Africa still remains the least vaccinated continent. As at 04 January 2023, almost one billion people in African countries remain unvaccinated. Only 57 countries have vaccinated 70% of their population and 60, 18% of these are high-income countries (WHO, 2023). Less than 2% of the 690 million Covid-19 vaccine doses administered to date globally have been in Africa, where most countries have already received vaccines in small quantities (WHO, 2023). According to Dr Matshidiso Moeti, the African regional director of the World Health Organization regional director for Africa, “progress is being made, many African countries have barely moved beyond the starting line. Limited stocks and supply bottlenecks are putting Covid-19 vaccines out of reach of many people in this region,”(WHO, 2022). It has been stated by the World Health Organisation that Africa is already playing Covid-19 vaccination catch-up, and the gap is only widening. More than a million Africans remain on the margins of this historic march to overcome the Covid-19 pandemic (WHO, 2022).

Covid-19 vaccines that have been developed since the beginning of the Corona Virus global pandemic (MDPI journals, 2021).

Table 1. Summary of COVID-19 vaccines currently being used (Supplementary Table S1).

Vaccine Name/ Manufacturer	Age (in Years)	Recommended Duration between 1st & 2nd Dose	Vaccine Efficacy *	Use in COVAX	Storage Recommendations	FDA Approved	WHO Emergency Use Listing	Affordability
Moderna [2]	≥18	28 days	94.0%	No [3]	–20 °C [4]	Yes [5]	No	\$\$\$ [3]
Pfizer- BioNTech [6]	≥16	21 days	94.8%	Yes [3]	–80 to –60 °C [4]	Yes [5]	Yes	\$ \$ [3]
Sputnik V (Gamaleya) [7]	≥18	21 days	91.6%	No [8]	2–8 °C, –18 °C [9]	No [5]	No	\$\$\$ [3]
AstraZeneca Oxford [10]	≥18	<6 weeks	70.4%	Yes [3]	2–8 °C [3]	No [5]	Yes	\$ [3]
Sinopharm [11]	18 to 80	21/28 days	86.0%	No [3]	2–8 °C [3]	No [5]	Yes	\$\$\$ [3]
Johnson & Johnson [12]	≥18	Ongoing phase 3 trial (at least 47 days)	66.0%	Yes [3]	2–8 °C [3]	Yes [5]	Yes	\$ [3]

The COVAX initiative

In the midst of Covid-19, it is necessary that all populations are protected from the virus. Making sure that there are enough and available vaccines globally for all those who need them is the fastest and fairest way to make sure that the Covid-19 pandemic comes to an end. Despite the safe and effective use of vaccines that are available globally, access to vaccines remains highly inequitable. This poor access and availability has left many of the most vulnerable people and regions unprotected and heighten the risk of further variants emerging (CEPI, 2020). COVAX, collaboration between CEPI, The Coalition for Epidemic Preparedness Innovations, Gavi, the Vaccine Alliance and the World Health Organisation, was established to help deal with this issue. COVAX, the vaccine pillar of the ACT Accelerator, works towards supporting countries to achieve their individual vaccination goals through delivering fair, equitable access to vaccines for every country that participates.

The COVAX facility was established by the WHO (World Health Organisation) in collaboration with the ACT-Accelerator vaccine partners, the Coalition for Epidemic Preparedness Innovations (CEPI) and Gavi, the vaccine alliance. The main aim of COVAX was to bring nations together, regardless of their income level, to ensure the obtaining and fair distribution of Covid-19 vaccines (WHO, 2022). Covid-19 Vaccines Global Access (COVAX) was established in 2020 and the COVAX Facility was set up as its procurement arm, managed by Gavi to purchase vaccines on behalf of 177 participating countries through Advanced Purchase Agreements (APA) that were made with manufacturers while vaccines were still in

the process of development (Puyvalle and Storeng, 2022). The COVAX Facility developed an innovative financing instrument known as the COVAX Advanced Market Commitment to provide access to donor-funded doses to 92 low and middle income economies. In the year 2021, COVAX alongside wealthy governments and the International Federation of Pharmaceutical Manufacturers and Associations (IFPMA), promoted the donations of vaccines as a key solution to ‘vaccine apartheid’, a term coined by the World Health Organisation’s Director General (Puyvalle and Storeng, 2022). COVAX was established with the purpose of sharing vaccine doses equitably, effectively and transparently (Puyvalle and Storeng, 2022). The strategies and motives of the COVAX initiative were to oppose what is known as vaccine nationalism, which are the unilateral vaccine policies driven by national health security interests. The COVAX initiative was also designed to oppose vaccine diplomacy which is deemed to be driven by foreign policy interests (Puyvalle and Storeng, 2022).

The COVAX facility is the vaccines pillar of the Access to Covid-19 Tools Accelerator (ACT). The Access to Covid-19 Tools Accelerator (ACT) is a global collaboration that aims to quicken the development, production and equitable access to Covid-19 tests, treatments and vaccines (WHO, 2020). COVAX is co-led by the Coalition for Epidemic Preparedness Innovations (CEPI), Gavi and the World Health Organisation (WHO) alongside key delivery partner UNICEF. COVAX aims to hasten the development and manufacture of Covid-19 vaccines and to guarantee fair and equitable access globally. The World Health Organisation has multiple roles in COVAX such as providing normative guidance on vaccine policy, regulation, safety, R&D, allocation and country readiness and delivery. WHO’s Strategic Advisory Group of Experts (SAGE) on Immunization develops evidence-based immunization policy recommendations. Its Emergency Use Listing (EUL)/ prequalification programmes ensure harmonized review and authorization across member states (WHO, 2020).

The World Health Organisation provides global coordination and member state support on vaccine safety and monitoring. The WHO alongside UNICEF led the Country Readiness and Delivery Workstream which provided support to countries as they prepared to receive and administer vaccines. The WHO, UNICEF, GAVI, the Vaccine Alliance also launched the Covid-19 Vaccine Delivery Partnership (CoVDP) in recognizing the need and importance in turning vaccine doses into vaccinated and protected communities. The CoVDP works closely with countries to understand the blockages to vaccinations and offers access to urgent operational funding, technical assistance and political engagement to rapidly scale up vaccination and monitor progress towards targets (WHO,2022).

With all that being said, the aim of this research paper is to understand why, despite great global efforts to ensure a fair and equitable vaccination rollout, Africa has received the least number of vaccines, is the least vaccinated continent and the various contributing factors to this phenomenon. This research addresses the access of Covid-19 vaccines in Africa.

Equitable access to Covid-19 means that vaccines are available to all those who are in need, regardless if that nation state is developed or not. Access to Covid-19 vaccines also means that there are appropriate options that exist for all healthcare settings whether the country is developed or not. Vaccine access refers to the safe and effective options that reach all groups of people regardless of race, age or other demographics and that vaccines are affordable to rich and poor countries alike not only to the richer and more developed ones (WHO,2023).

I will answer the research question “What are the reasons behind the poor access of Covid-19 vaccines in Africa?” by looking at the case of South Africa and analyse vaccine access during this time and finding feasible explanations for these cases. South Africa is an African country that has experienced a poor access of Covid-19 vaccines (Statista, 2023). The reasons for poor vaccine access will be analysed using this African country as an example. In essence, this research paper aims to look at the various reasons and explanations that hindered Africa’s access to Covid-19 vaccines; both internal and external factors will be explored.

Aims and Objectives

This research project aims to study the most prominent reasons behind the delay and poor access of vaccines on the African continent. The objectives that emanate from this aim are as follows:

- Assessing why Africa has received the least vaccines during the COVID-19 pandemic.
- Assessing the various contributing factors behind the poor access of Covid-19 vaccines in Africa
- To assess the causes of a poor uptake in Covid-19 vaccines to African countries

To respond to these issues, this study uses the theories of classical realism and institutional liberalism to discover why Africa was the least vaccinated continent. Data has been collected from March 2020, the onset of the pandemic and vaccine rollouts and is subjected to a textual analysis to arrive at the reasons behind the poor access of vaccinations during Covid-19 in Africa. The paper will make inferences of texts, analyse the structure and interpret the content

as well as understanding the foundations of the text, identifying significant themes and carrying out an analysis.

Research questions

What are the reasons and explanations behind the poor access of Covid-19 vaccines in Africa?

Subsidiary questions:

1. Why has the rollout of the Covid-19 vaccine to Africa been poor?
2. What has been the role of international organisations such as the WHO (including COVAX) in vaccine rollouts?
3. How has the concept of vaccine diplomacy and vaccine nationalism contributed to the poor access of vaccines in Africa?
4. How do internal factors such as vaccine nationalism and external factors such as vaccine diplomacy contribute to the poor access?

Chapter 2

Introduction

Africa is progressively being excluded from receiving efficient access to vaccinations to treat diseases and viruses (Hassan et al, 2022). This is indicated by historic treatments and vaccines for epidemics such as HIV/AIDS and H1N1 (Hassan et al, 2022). When the antiretroviral drugs for treatment of HIV/AIDS entered the market in the mid-1990s and pharmaceutical companies escalated their prices, limiting access for vulnerable groups. When pharmaceutical companies increase the price on vaccines, infected people are left to die across Africa, while death tolls in rich developed countries plummet (Nkengasaong et al., 2020). Access to vaccines on the African continent is a topic that has not been greatly explored in research. However, in recent years after the Covid-19 pandemic, there have been increases in studies that explore vaccine accessibility on the continent. These include studies by; Kagina (2022) Bwire et al (2022) Menezes (2021) and Ruger (2020).

The literature of this research report explores the reasons behind the poor access and uptake of Covid-19 vaccines in Africa and how this has made it the least vaccinated continent post-pandemic (Statista, 2022). The vaccination rates of Covid-19 continue to be the lowest in many countries in Africa with only 24,4 % of the population being vaccinated whilst the global average sits at 69,0 % (Chen et al., 2022). In this review, the reasons behind the poor access to vaccines in Africa will be explored using secondary and primary sources that investigate some of the explanations behind poor access such as vaccine accessibility and the internal challenges of vaccine rollouts in Africa which include vaccine hesitancy and superstitious beliefs as well as the external challenges of vaccine rollouts which include the roles of states and international organisations.

Internal Reason

The majority of the literature that falls under the challenges of a successful Covid-19 vaccination programme looks at what some of the internal and external reasons behind Africa's lowly vaccine rollout may be as well as some of the internal and external reasons African countries remain the least vaccinated despite massive on-going vaccination programmes against Covid-19 in the world. One of the widespread internal reasons behind the delay in vaccinations is vaccine hesitancy and superstitious beliefs (Loembe' et al., 2021). Rumours that spread throughout social media and communities in Africa on the dangers and negative side effects of the Covid-19 vaccination have led to fear and upheaval. This delays the vaccination process as people are afraid and sceptical (Loembe' et al., 2021). Another common internal reason is the storage requirements of the vaccine samples and regulatory hurdles (Ayengbara, 2021). According to Ayengbara (2021) vaccination programmes in Africa have been met with challenges of inadequate storage systems. Many African countries lack the infrastructure to store and support vaccines, these internal reasons will be explained in further detail.

Vaccine hesitancy and superstitious beliefs

There have been issues regarding misinformation and superstitious beliefs spreading in Africa and the world through various social media platforms and this has resulted in a lot of hesitancy on vaccinations by citizens. Citizens believe that vaccines are unsafe and normal safety protocols have been circumvented to fast track their authorisation for use (Menezes et al., 2021). There are myths and beliefs that vaccines may change one's DNA and that they contain microchips that will be used to track and control an individual (SAG,2021). There is misinformation on the government's intentions behind Covid-19 vaccines as citizens believe that the government is complicit with big businesses in pushing vaccines despite the risks (SAG, 2021). The issue of vaccine hesitancy continues to loom in Africa. A survey conducted in 15 countries found that while 79% of respondents would take a Covid-19 vaccine, widespread hesitancy due to safety concerns, side effects and effectiveness ranged from four to 38% (Africa CDC, 2020). The Africa CDC survey noted that participants deemed Covid-19 vaccines less safe than any other vaccine.

Confidence in the Covid-19 vaccine was further altered by the reports of blood-clots in Astra Zeneca and Johnson & Johnson vaccines in some European countries (Menezes, 2021). This led to vaccines such as Astra Zeneca being refused in several African countries which

ultimately caused a delay in vaccination rollouts as there were very few alternatives (Callaway, 2020). Temporary pauses to rollout enacted by several European countries and ensuing restrictions which limited the administration of the Astra Zeneca vaccine to older age groups in particular, sparked suspicion in African countries (Callaway, 2020). These events led to negative consequences on vaccine uptake. For instance, the Democratic Republic of Congo (DRC) postponed deployment of the vaccine for almost a month and Chad forfeited its COVAX allocation altogether (Loembe' et al., 2021).

According to Lombe' et al. (2021), after moving away from AstraZeneca, wealthier nations offered excess doses to African nations. These 'second best' options are being transferred to African states which further contributes to building mistrust on the continent and in essence, poor vaccine access. Social media has facilitated the spread of misinformation and conspiracy theories. In a study done by the Africa Centre for Disease Control in 2021, people with high levels of hesitancy were more likely to use social media and be exposed to misinformation. People who were surveyed in South Africa for instance, believed that the virus was linked to 5G technology (Menezes et al, 2021). Many Africans trusted social media as their primary source of information (Bwire et al., 2022). Religious beliefs also played a role in poor vaccine uptake and subsidized vaccine hesitancy (Menezes et al., 2021). Close to 90 % of individuals surveyed in Niger and Liberia said that prayer was more effective than the vaccine (Bwire et al., 2022).

According to Menezes et al (2021), the mistrust of vaccine development in Western countries is nothing new in Africa. It is rooted in the history of unethical Western medical practices on the continent where early efforts to address disease diminished trust in Western medicine and led to health services being under-utilized. Approximately 43% of those surveyed by the Africa CDC believed that Africans were being used as guinea pigs in vaccine trials. According to a survey conducted in 2021 in Addis Abba, hesitancy was associated with the superstitious belief that the vaccine was a biological weapon from developed countries to control population growth (ACD, 2021). Scholars such as Loembe'et al. (2021) and the Africa CDC claim that the poor access and uptake of vaccinations in Africa is due to vaccine hesitancy by citizens and the general mistrust of the Covid19 vaccine. Despite the availability of the vaccine, mistrust, fear and differing religious beliefs have resulted in poor vaccination rollouts in Africa. This misinformation on the Covid-19 vaccine led to the suspension of the rolling out of Covid-19 vaccinations such as AstraZeneca in some European countries and the temporary suspension

of the Johnson & Johnson vaccine in the United States. In due course, more than a few African countries rejected the AstraZeneca Covid-19 vaccination altogether (Menezes et al., 2021).

Storage requirements and regulatory hurdles

Storage requirements and regulatory hurdles for vaccines have also been a hindrance in vaccine accessibility and distributions. Over the years, vaccination programmes in Africa have been met with the challenges of inadequate storage system due to limited funds to power provide cold chain and maintain a structured network to monitor the vaccine distributions and these problems are mostly evident in rural communities and villages due to epileptic electricity and frequent power outages, limited cold chain equipment and facilities (Ayengbara, 2021). Many African countries lack the infrastructure to store and transport certain vaccine candidates. Most of the countries on the continent are only equipped with a cold storage chain that can only maintain standard refrigeration temperatures of -8°C. This means that vaccines such as Pfizer might go to waste as the Pfizer vaccine needs to be stored between 2°C and 8°C (36°F and 46°F) for up to 10 weeks (CDC,2022).

The WHO analyses and explores some of the risks and challenges experienced by the African continent that many of the scholars in this literature have explored. The WHO proclaims that safety concerns were a contributing factor to the inadequate vaccine rollouts. African countries paused or stopped their vaccine rollouts due to safety concerns. There have been many recordings of side effects in Europe and the United States of America and this brought about distress (WHO, 2022). The concern of Covid-19 vaccine safety has been challenging to African countries because there is a limited ability to track and report adverse effects following the vaccination. It has made it difficult to investigate any serious effects and share information on benefits and risks of vaccines among their populations. Targeting those who are most at risk has also contributed to vaccine delay and thus a poor uptake. It has been much harder to find and help those who are most at risk than it has been to find health workers for the reason that they are in remote areas (WHO, 2022).

Loembe' (et al., 2021) states that another internal challenge for the African continent and developing states is because of the scarcity of sustainable national investments in domestic vaccine research and development programs and industry. The domestic production of vaccines has been inadequate and has not been appropriately prioritised. The African continent is home to 1, 3 billion people and produces only 1% of the doses it uses (Loembe' et al., 2021). African nations have had few incentives to support a local vaccine industry. According to Loembe' et

al. (2021), the over-reliance on external suppliers of the covid-19 vaccination helps to explain and understand why most African countries remain the least vaccinated. The reason why the over-reliance on external suppliers causes a delay is because external suppliers act as substitute decision-makers for reviewing trial data and granting approval for new therapeutics and vaccines. There are various processes that occur before vaccines can be issued and these can cause a delay. Storage, supply and regulatory hurdles mean that there are no vaccines to rollout; this lack on its own causes a delay in vaccination rollouts in Africa, leaving them behind the rest of the world (Loembe ' et al., 2021).

External Reasons

This section of the literature review explores some of the external reasons behind the delay in vaccinations in Africa. Usman (2021) argues that the delay in Covid-19 vaccinations is not only due to internal reasons facing Africa but external reasons as well. External reasons are reasons that go beyond Africa's borders and control, whereas internal reasons are reasons within the African continent and Africa's control. The external reasons behind the delay in Covid-19 vaccinations go beyond Africa's borders. The reasons that will be explored in this section of the literature are; the role of states and international organisations, insufficient global supplies and the challenges Africa faces with Covid-19 vaccine prices.

The role of states and international organisations

This literature explores state behaviour and its role in the delay of vaccine rollouts in more detail. The scholars in this literature diverge from internal reasons behind Covid-19 vaccine delay and analyse the external reasons behind hesitancy and delay. The arrival of the vaccine and the excitement around it contradicts significant barriers to vaccine availability and access in large parts of the world. Usman (2021) analyses the intensifying geopolitical competition on Covid-19 vaccines and how this is impeding multilateral cooperation on critical issues including public health. Low-income countries are caught in the middle of this competition and now face obstacles to accessing vaccines (Usman, 2021). According to Loembe' et al. (2021) there has been a handful of rich and wealthy nations that have depleted vaccines and reduced the access to poorer nations by hoarding. Loembe' et al. (2021) claims that the depletion of Covid-19 vaccines is due to pre-purchase agreements made by wealthier nations with manufactures as well as stockpiling vaccine doses for their own populations.

Other external factors such as exports restrictions placed on vaccines, vaccine raw components, and on delivery supplies such as syringes and glass bottles have further undermined the equity

focused partnership (Loembe' et al., 2021). According to an OECD policy compiled in February 2021, despite the many positive steps towards international co-ordination and collaboration in response to the crisis throughout 2020 and 2021, the demand for vaccines is expected to far outstrip supply. The policy states that out of the 12.5 billion doses that the principal vaccine producers have so far pledged to deliver in 2021, an estimated 6,4 billion have been pre-ordered mostly by wealthy countries (OECD, 2021). Wealthier states hedge their bets on potential candidates and reserving vaccine volumes which exceed their population sizes. Wealthier economies have also been reported to contribute to the poor access of vaccinations by paying far more than other countries to secure Covid-19 vaccinations (OECD, 2021).

There are an estimated 90% of people in 67 low income countries that stand little chance of getting vaccinated because wealthy nations have reserved more than they require (Dyer, 2020). Rich countries, with only 14% of the world's population, have bought up to 53% of the eight most promising vaccines (Dyer, 2020). These include all of the Moderna vaccine doses expected to be produced over the year and 96% of the Pfizer-BioNTech vaccine doses. According to Dyer (2020) "Rich countries have enough doses to vaccinate everyone nearly three times over, whilst poor countries do not have enough to reach health workers and people at risk" (Dyer,2020). The poor vaccine access in Africa, according to the literature under this topic is primarily due to the greed and hoarding of vaccines by wealthier and more advanced economies. According to Hassan et al. (2021) the reason why Africa is the least vaccinated and experiencing a deprived vaccine rollout is due to how the global North/richer countries have chosen to conduct themselves which is in a greedy and selfish manner ensuring that vaccination programmes benefit their nations without considering the rest of the world.

Insufficient global supplies

Africa lags in access to vaccines due to insufficient global supplies. Usman (2021) looks at some programmes that have been put into place such as COVAX which aims to help poorer countries inoculate about 20 % of their population and how its objectives are quite limited. In essence, these programmes have not been successful and there has been a shortfall of vaccine supply. Usman (2021) believes that Africa's challenges in accessing covid-19 vaccines are compounded by an unravelling multilateral order marked by heightened great power rivalries. Soft power diplomacy by rising powers is occurring alongside vaccine nationalism by wealthy countries. Prominent global public health leaders have drawn attention to a trend of hoarding

limited medical supplies to the detriment of the vast majority of countries around the world. "We're in a very tough spot when it comes to supply" says Dr Richard Mihigo, World Health Organisation (WHO) Africa's Immunization and Vaccines Development Programme Co-ordinator (WHO,2021).

Pratt and Lewin (2021) write on how vaccines will shape the new geopolitical order. These scholars look at trade relationships between the richer and poorer countries in relation to Covid-19 vaccinations. The pandemic has vastly exacerbated the global north-south divide, with wealthy Western states moving steady toward herd immunity while a majority of African, Asian and Latin American countries wait for vaccines to trickle down. Africa being non-suppliers of the vaccine has contributed to the poor distribution on the continent (Pratt and Levin, 2001). Successful vaccine distribution stories can be found in trade-relationships between wealthier states yet in Africa not being successful due to supply limits and trade disadvantages. Pratt and Lewin (2021) argue that the West seems to be selfish in their supply of the vaccine and this could worsen already unjust trade relationships with the global South. Pratt and Lewin (2021) and Leng et al. (2022) believe that Covid-19 has reshaped global politics. "Vaccine Diplomacy" is a new term that has been introduced in literature. Vaccine diplomacy is a new channel through which major powers seek to curry favour and shape the international environment to their benefit, distributing vaccines to favoured countries according to perceived national interest (Leng et al., 2022).

Vaccine doses have been donated based on overly narrow geopolitical considerations rather than need or equity. The multilateral COVAX initiative remains underfunded and struggling to fulfil its mission for global vaccine equity (Leng et al., 2022). There is too much power rivalry and the lack of vaccine distribution overseas vaccine efforts, Leng et al. (2022) argues that there are too often mistaken for charity and pursuing the national interest conflated with playing for short-term geopolitical gain. The lack and delay of vaccine distribution on the African continent is a moral failing.

Funding and Pricing

In this section of the literature, authors such as Guzman (2021) argue that the poor access of vaccines in Africa is due to the pricing policies for low-income countries. Affordable and equitable access to medical products and technologies has long been a challenge for health

systems and the Covid-19 pandemic has further highlighted this challenge (Guzman et al., 2021). Prices drive health expenditure and ultimately population-wide coverage and access to novel products. Higher prices increase the financial burdens for populations and governments and as part of governments broader policymaking process, one of the roles of a governing body is developing and implementing well-planned pricing policies and guidelines to help ensure affordable and equitable access (Guzman, et al., 2021). Most countries on the African continent are excluded from the competition for doses because of their low purchasing-power.

Some low-income countries have signed advanced purchase agreements but none is expected to have enough to cover their population. To date, roughly 49 higher income countries have administered more than 39 million vaccine doses compared with only 25 doses in one lowest income country (Jerving, 2021). The expenses of in-country roll-outs are often overlooked. Most of the funding available for vaccine purchase and roll-out is available in loans rather than grants which potentially discourages some countries from launching large-scale rollouts (Jerving, 2021). Financial challenges are delaying Africa's rollout of Covid19 vaccines and risk curtailing plans to significantly expand the continents rollout. Funding for operational costs has been a critical barrier. COVAX is providing its share of vaccines free of charge to lower-income countries, but there are other significant costs. It has been estimated that 60% of every dollar spent on delivering vaccines is needed for the distribution of Covid-19 vaccines (Jerving, 2021). The World Bank calculates that on top of the money needed to buy enough vaccines to ensure adequate protection from Covid19, another 3 billion is required to deliver the vaccines into people's hands (WHO, 2021).

According to the World Health Organisation, in some African countries, the lack of funds is already causing delays in addition to a shortage of vaccinations, sub-optimal training, weaker communications to boost the uptake of vaccines and an inability to capture crucial data or to print and distribute immunization cards. Most African countries have financial plans in place to cover the first 3% of their population, but early evidence shows that many financial plans are inadequate for the larger, more geographically spread next phases. The costing plans also miss crucial expenditures such as hiring vaccinators, administration, cold-chain storage, logistics and transport for vaccines to reach widely dispersed populations (WHO, 2021). While domestic financing of these operational costs is encouraged, COVAX, Gavi, the Vaccine Alliance, the World Bank and other donors are ready to provide some funding. However, to unlock these funds, robust financial plans are necessary.

The overall findings of this review show some of the reasons behind the poor access of vaccines on the African continent and the various reasons and explanations for this delay. Various authors explore various reasons, possibilities and understanding of the poor access of vaccinations in Africa. The authors in this literature give a much better and broader understanding and reasoning behind the delay in vaccine access on the African continent. There are many reasons for the poor access of vaccines in Africa and the most prominent of these is the hoarding of vaccines by wealthier states. Vaccine nationalism is not new and dates back in Africa. It is no surprise that wealthier states have hoarded Covid-19 vaccines leaving only a handful for the African continent. It is in fact expected of them in global politics and international relations and the theoretical framework of this research report will further explain why.

Theoretical framework

This research report is situated in the broad theoretical frameworks of classical realism and institutional liberalism. Though the theory of institutional liberalism will be alluded to, the research will focus on classical realism as its main theoretical framework. As it was seen in the literature review, many writers have concluded that the poor access of Covid-19 vaccinations can be accounted by reasons that are both internal and external to the African continent. The theoretical framework of this study will be used to explain the research question which is “What are the reasons behind the poor access of Covid-19 vaccines in Africa?”. This question is best answered by looking at how Africa, as well as the rest of the world has responded to the pandemic and the need for vaccinations; therefore, the best applicable theory here is the theory of classical realism. The theory of classical realism will address the effects of richer countries developing a vaccine and how vaccine nationalism affects that development and subsequent distribution. The second theory which is liberal institutionalism will analyse the prospect of vaccine distribution among states and the role of non-governmental organisations (NGOs) and international organisations. These two theories will assist in analysing the reasons for Africa’s poor access to Covid-19 vaccines.

Realism

Realism begins with a mythical tale of the idealist or utopian writers of the inter-war period (1919-1939) who wrote in the aftermath of the First World War (Thucydides, 1954). Realists paid attention to understanding the cause of war in order to find an antidote for it. These realists were described as inter-war realists and provided an idealist approach to realism. Thucydides

(1954) writes on a new approach on realism and realists that rose after the outbreak of the Second World War in 1939, these realists include E.H Carr, Hans J. Morgenthau, Frederick Shuman as the founding fathers, who all placed emphasis on the omnipresence of power and the competitive nature of politics between nations (Thucydides,1954). From the Second World War in 1939 to present, the world continues to be viewed through a realist's perspective from leading theorists and policymakers. Realism offers states a guide for increasing its interests in the world.

Realists are doubtful of the idea that universal moral principles exist and advice states to choose their own self-interests over ethics and ethical conduct (Thucydides, 1954). Thucydides (1954) claims that realists believe the need for survival requires state leaders to rid the idea of traditional morality which concerns itself with the greater good of humanity. Realists consider protecting the life of the state and the ethical communities within it over morals and ethics. The three key elements of realism are statism, survival and self-help which are also present in the work of classical realism which will be discussed later in further detail. The term statism is used to describe the idea that the state is the “legitimate representation of the collective will of the people” (Pashankanlou, 2009). The states legitimacy is what allows it to exercise authority internally. One of realists' debate is that the basic structure of international politics is anarchical because sovereign states believe that they themselves are their own highest authority and claim that there is no other authority above them.

Realists conclude that a state's first and most important priority is its survival. According to Thucydides (1954) realists proclaim that every state wishes to preserve its existence. The core national interest of all states must be survival (Thucydides, 1954). States have various interests such as economic, environmental and humanitarian however these interests will not gain any recognition if the state did not exist. Finally, self-help, which is “the principle of action in an anarchical system where there is no global government” (Pashankanlou, 1954). The theory of realism claims that all state actors are accountable for their own well-being and survival. Realists do not agree with the notion that states should assign other actors of international institutions such as the United Nations with its safety and survival and should not rely on these actors and institutions for their own security.

The theory of realism in international relations concerns itself with how the world actually is rather than what it should be. Realism is an empirical paradigm that is rather pessimistic and places emphasis on the recurrent patterns of power politics which are a result of on-going

conflicts, rivalries and wars (Pashakanlou, 2009). Realism proclaims that the state is the principal actor and great powers (wealthier economies and economies that are thriving) receive great attention as they are considered to have the most influence in the international stage. Realists state that national interest influences state behaviour as states are fundamentally rational egoists.

Classical realism

In the last couple of years, there have been various alternative thematic classifications that have been offered to place the theory of realism into different categories. Realism is differentiated into three historical periods namely: classical realism, structural and neo-realism. Classical realism is still relevant and applicable in the twentieth century and is understood as the beginning of Thucydides (1954) texts on the Peloponnesian war between Athens and Sparta. The other classifications of realism, structural or neo-realism date from 1979 onwards and officially entered the picture after the publication of Kenneth Waltz's landmark text "Theory of International Politics" (Thucydides, 1954). This research will be focusing on classical realism as one of its key theoretical frameworks.

Hans Morgenthau is the founding father of classical realism alongside Thucydides and Niccolo Machiavelli. Morgenthau (1948) proclaims that classical realism places emphasis on the role of human nature in international politics. He argues that the need for power is typical and is in fact a part of human nature (Morgenthau, 1948). Classical realism believes that people are covetous and also compete for resources and because of the desire to maximise their gains, act selfishly. This theorist states that people tend to act irrationally and base most of their decisions on this irrationality. Classical realism helps in understanding the behaviours of a state. Morgenthau (1948) believes that states seek power which is driven by the desire to achieve national interests. Power is the key concept of classical realists and theorists believe that in order for a state to survive, it needs to increase its power (preferably by internal development such as in the economic system, technological, diplomatic and military means) (Morgenthau, 1948). The theory argues that everything that a state does is in the name of power accumulation.

The key principles of classical realism are characterized by self-interest, which will be used in this research report. Significant importance is placed on power, national security and the assumption on anarchy regarding the international system (Fay, 2021). Classical Realism also emphasises that obligations to the international community do not exist. According to this theory, vaccine nationalism is no surprise. High-income countries competing to be the first to

receive vaccinations regardless if the rest of the world has received is predicted by classical realism. Under this theory, countries should do whatever is possible to obtain the most vaccinations as fast as possible. This is understandable as it is the states need for power. Classical realism predicts that vaccine nationalism will persist with individual countries placing importance on their own citizens above all. This theory helps in understanding the hindrance of vaccine access on the African continent by reviewing states behaviour. According to classical realism, states are not obliged to help countries outside of their own and it is reasonable to behave the way they do.

The literature in this research report has gone on to show that richer countries' developing a vaccine has led to vaccine nationalism. This theory helps in explaining the reason behind this vaccine nationalism as it has led to the hoarding of vaccine and poor distribution to the rest of the world. Classical realism accounts this behaviour to the nature of a human being and states to act in their own self and national interest. Classical realism also helps in understanding some of the core reasons for the poor access of vaccines on the African continent, under the assumption that significant importance has been placed on power and national security. Many richer countries felt the need to preserve vaccines for their own nations before others and to be the first to acquire vaccines.

Institutional liberalism

Robert Keohane and Joseph Nye are the two founding fathers of the institutional liberalism theory. Institutional liberalism argues that in order to explain and understand international relations, emphasis should be placed on global governance and international organisations (Devitt, 2011). This theory believes that international organisations play a role in getting states to cooperate. Liberal institutionalism maintains that it is indeed possible for there to be peace in international affairs. States must cooperate with one another and rid the idea of sovereignty to help and create a more integrated community that will help promote economic growth and respond to regional and international security issues (Devitt, 2011). Robert Keohane (1984) and Joseph Nye (1970) believe that liberal institutionalism focuses on the idea of complex interdependence.

The theory of institutional liberalism focuses on the effects and the benefits of international organizations and NGOs in promoting cooperation and mutual gains from membership and involvement (Fay, 2021). In this particular context (Covid-19 vaccine access) the most important institution is the World Health Organisation (WHO) and its combined efforts with

Gavi, the Vaccine Alliance in establishing COVAX (the global access facility). The theory of institutional liberalism predicts that nations would choose to buy into the initiative in order to reap the benefits that membership would provide. According to this theory, the benefits that come with these institutions should help facilitate cooperation within the international system. Some of these benefits include safety nets should a country need an additional supply of vaccines at a later stage. Another benefit is the ability for low-income countries to gain access to sufficient vaccine doses that they might not have been able to secure. Institutional initiative believes that countries of the world have shared interests in containing the virus around the globe. The theory of institutional liberalism places faith in human rationality and the ability of humans to cooperate when necessary in order to facilitate progress.

This theory predicts that NGOs such as COVAX and other institutions can help avoid states behaving selfishly by encouraging cooperation and human rationality. Assuming that the poor access of vaccines on the African continent is due to a state's selfish nature, institutional liberalism argues that this can be avoided by introducing institutions that will facilitate cooperation within the international system. These institutions play an important role in the distribution of these vaccines after they have been developed. Majority of rich states are manufacturing vaccines because they have the resources, which in turn leads to hoarding of and greed for vaccines. The theory of liberal institutionalism believes that NGOs and international organisations can combat this by ensuring that there is an equal distribution of vaccines to both high income and low-income states.

Institutional liberalism

The most appropriate theory for this research report is the theory of Institutional Liberalism. Robert Keohane and Joseph Nye are the two founding fathers of the institutional liberalism theory. Institutional liberalism argues that in order to explain and understand international relations, emphasis should be placed on global governance and international organisations. This theory asserts that international organisations play a role in getting states to cooperate. Liberal institutionalism maintains that it is indeed possible for there to be peace in international affairs. States must cooperate with one another and get rid of the idea of sovereignty to help and create a more integrated community that will help promote economic growth and respond to regional and international security issues (Devitt, 2011). An example of the theory of International Liberalism being applied and practiced in my research is the COVAX initiative as well as GAVI and the World Health Organisation. These international

organisations helped in getting both African countries and countries outside of Africa's border cooperate with one another in regards to a fair distribution of Covid-19 vaccines which curbed vaccine nationalism and the exploitation of African countries by the West. This helped states cooperate with one another to ride the idea of sovereignty.

Chapter 3:

Methodology

Introduction

Methodology in International Relations can be understood as the tools of research and the practical techniques that are used to collect and analyse data (Lamont, 2022). Methodology helps and informs the reader of the methods of research and how the research will be conducted. In international relations there are crucial distinctions in how researchers think about global politics. There is positivist and interpretive research. The positivist approach to research believes that it is possible to identify and test causal phenomena for generalizable law-like

regularities (Lamont, 2022). For instance, if certain conditions are met, certain outcomes can be predicted.

The other approach to research is an interpretive approach which suggests that claims about IR are “tied to a particular context of time that gives them meaning which may change, making it impossible to generate hard-and-fast, generalizable laws” (Lamont, 2022). The interpretive approach to research places emphasis on the importance of ideas, concepts and ethical standards (Panke, 2018). This research report uses an interpretive approach which believes that social sciences deals with ‘social facts’ which are social constructions (for instance state, society and power) often based on human behaviour which can change based on the situation (for instance due to emotions or in this case, global panic and pandemics) (Panke, 2018).

This chapter will focus on using different methods in research to find the answers to our main research question which is “What are the reasons and explanations behind the poor access of Covid-19 vaccines in Africa?” This research report will be conducted by using a desktop research approach to answer the proposed research question as well as the four subsidiary questions which are:

- Why has the rollout and access of the Covid-19 vaccine to Africa been poor?
- What has been the role of international organisations such as the WHO (including COVAX) in vaccine rollouts?
- How has the concept of vaccine diplomacy and vaccine nationalism contributed to the poor supply of vaccines in Africa?
- how do internal factors and external factors contribute to the poor access?

A desktop research is a research method that is done by spending majority of the research process at a desk (MSG, 2022). The research being done here does not necessitate any interviews or questionnaires nor being on the field. Data will be collected from existing resources.

This research makes use of an array of possible sources to obtain data such as reports, government documents, laws, newspaper articles, websites as well as other secondary sources such as journal articles, scholarly articles as well as various data and statistics from Statista and stats SA. The World Health Organisation (WHO), Africa Centre for Disease Control and Prevention are some key primary sources that will also be used. This research is a qualitative

project which Panke (2018) explains as a small-N project because the numbers of observations that are empirically studied are limited to a few cases.

This research will be using a single case study analysis. Africa is a vast continent with many different countries and in order to narrow down the paper there will be focus on a single country, South Africa. The use of a case study helps to provide a much deeper level of detail and understanding to the research (Willis, 2014). Single case studies delve into the deeper and more particular parts of cases and can be useful for testing theoretical frameworks. Single case studies are used when the research is unique, a new case, and allows for thick empirical analyses (Panke, 2018).

Alongside the single case study analysis, this research report will also be using the congruence method for theory application. The method of congruence looks at a theory's prediction and actual outcomes (George and Bennett, 2005). This research looks at how the theories of classical realism and institutional liberalism have led to poor access of Covid-19 vaccines in Africa. George and Bennett (2005) describe the congruence method in research as a method that assesses a theory's leverage, what it is explaining and what it is trying to predict.

Limitations of this research

Researchers such as Hassan (2021) and Ayengbara (2021) investigate some of the internal challenges that Africa has faced which have contributed to the poor access of Covid-19 vaccines. These scholars believe the reasons behind the delay are due to endogenous challenges such as economic concerns, manufacturer demands, state procurement as well as price determination. Hassan (2021) looked at some internal influences on delayed vaccine rollouts such as vaccine hesitancy and misinformation in society. However, this literature does not explore some of the political and governmental issues such as corruption, looting of vaccine funds and poor governance. Moreover, how this might have contributed to the poor uptake of Covid-19 vaccines in Africa.

Other academics such as Usman (2021) and Pratt (2021) look at some of the external reasons behind the poor uptake of Covid-19 vaccines in Africa. These academics believe that some of the main reasons behind the delay are because developed countries are hoarding vaccines for their nations. Africa has a poor access to vaccines because of global supplies. Researchers investigating the external challenges analyse the importance of international organisations such as the WHO and COVAX in ensuring an equal distribution of vaccines globally. Nonetheless,

this research fails to examine the relationship between continental bodies and global bodies in securing the vaccine.

This research is a desktop study and its lack of fieldwork can be limiting because the sources used will not be as reliable as primary sources. Additionally, there is great limitations to single case studies because of weak theory testing, selection bias, difficulty in generalising and possibility of over-generalisation. Single case studies are prone to selection bias and do not provide strong tests (MSG, 2022). Another limitation to this study is that it is a qualitative research which makes generalisations more limited compared to quantitative projects (Panke, 2018). This study is fairly new and there isn't much research being done, the research is fairly new and articles tend to be quiet repetitive.

Chapter 4

Findings

Evidence by researchers suggests that SARS-Cov-2 virus originated in bats (WHO, 2022) The SARS-Cov-2 virus began spreading from civets that have been infected to people. There is disputed evidence and varying theories on the origin of SARS-Cov-2 which caused the Covid-19 pandemic, however scientific evidence so far suggests that SARS-Cov-2 likely resulted from viral evolution in nature and hurdled to people or through an unidentified animal host (NIH, 2022). The disease spreads from person to person through infected air droplets that occur when one sneezes or coughs. The disease can also be transmitted when people have contact with hands or surfaces that contain the virus and touch their eyes, nose or mouth with their contaminated hands (ACDC, 2022).

The necessary measures and precautions were put into place to ensure that the disease does not spread any further. These measures included the wearing of masks, regular washing of hands, lockdowns, non-pharmaceutical interventions as well as vaccinations (ACDC, 2022). The most viable of these were vaccinations as they are effective in the prevention of severe disease and

death. The purpose and the intention of the Covid-19 vaccine is to provide immunity against Covid-19 (SAG, 2023). Generally, vaccines contain weakened or inactive parts of a specific organism that triggers an immune response in the body and does not cause the disease but instead stimulates the immune system to respond. Multiple doses are required for vaccines as this is necessary to allow for the production of long-lived antibodies and development of memory cells, this allows the body to fight the particular disease-causing organism which then builds up memory against the pathogen so that it can fight it in the future (SAG,2023). A community that has a large amount of vaccinated people would make it less likely for the pathogen to spread because most people are immune. This is known as herd immunity, the more others are vaccinated the less likely those who are unable to be protected by vaccines will be exposed to the dangerous pathogens (ACDC, 2022) Herd immunity means extensive protection due to those around them who are already vaccinated.

Global efforts and initiatives to ensure the fair and equal distribution of Covid-19 vaccinations were put into place. One of the well-known initiatives is COVAX. COVAX is collaboration between CEPI , the Coalition for Epidemic Preparedness Innovations, Gavi, the Vaccine Alliance and the World Health Organisation (CEPI, 2020). COVAX coordinates the global effort to develop safe and effective Covid-19 vaccines, and making sure that there is rapid, fair and equitable distribution of vaccines (Gavi, 2020). COVAX, the vaccine pillar of the ACT Accelerator, works towards supporting countries to achieve their individual vaccination goals through delivering fair, equitable access to vaccines for every country that participates (Gavi, 2020). Despite the COVAX initiative, Africa remains the least vaccinated continent and the distribution of Covid-19 vaccinations on the continent can be considered as unfair and unequal.

Data of vaccine access in Africa

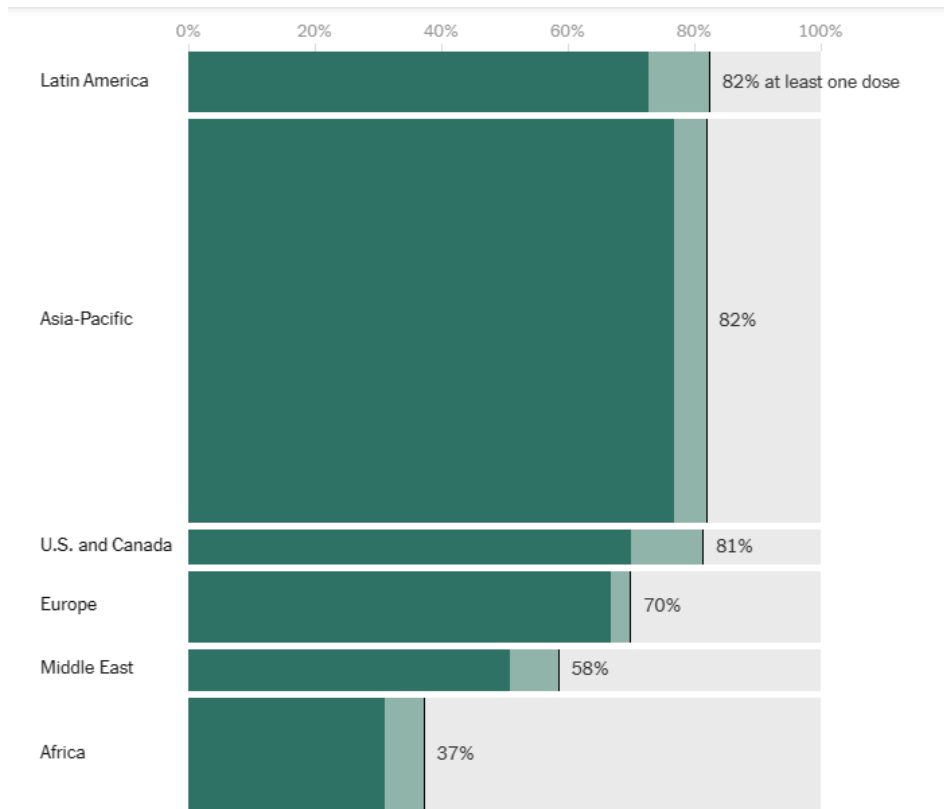
As shown in the graph in annexure 1 below. There are some noticeable differences in the percentage of vaccinated persons in various continents of the world. Africa has the lowest vaccination rate of all the continents. Africa has achieved just 37% of its population receiving at least one dosage of the Covid-19 vaccine whilst Latin America has achieved 82% of its population receiving at least one dose of the covid-19 vaccine (Holder, 2023).

Annexure 1

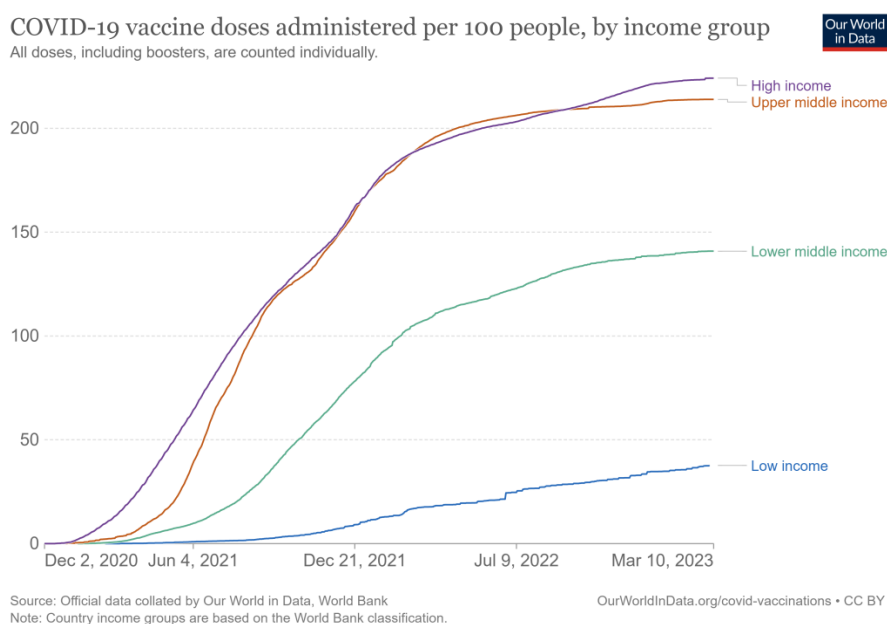
Vaccination rates by region

As a share of total population. The height of each bar is proportional to the region's population.

● Partially vaccinated ● Fully vaccinated



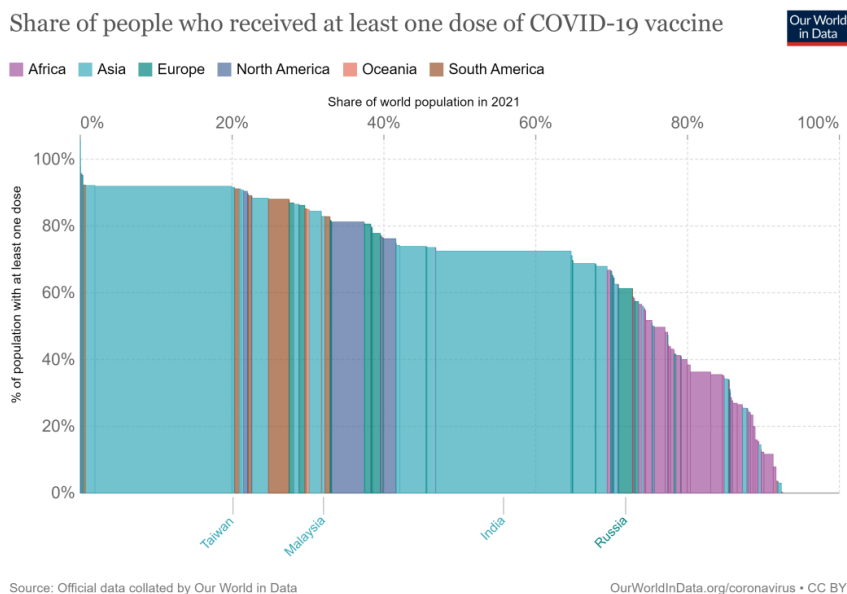
Annexure 2



Annexure 2 above is a chart showing the Covid-19 vaccine doses administered per 100 people by income group. This chart shows that from Dec 2, 2020 to March 10, 2023, low-income countries have vaccinated less than 50% of their populations including booster vaccinations. Low-income countries are also known as least developed countries (LDCs) and are described by the United Nations as “countries confronting severe structural impediments to sustainable development” (UN, 2022). Low-income countries are highly vulnerable to economic and environmental shocks and have low levels of human assets. There are 46 countries that have currently been listed on the list of LDCs with majority of these being found on the African continent.

Annexure 3

Share of people who received at least one dose of COVID-19 vaccine

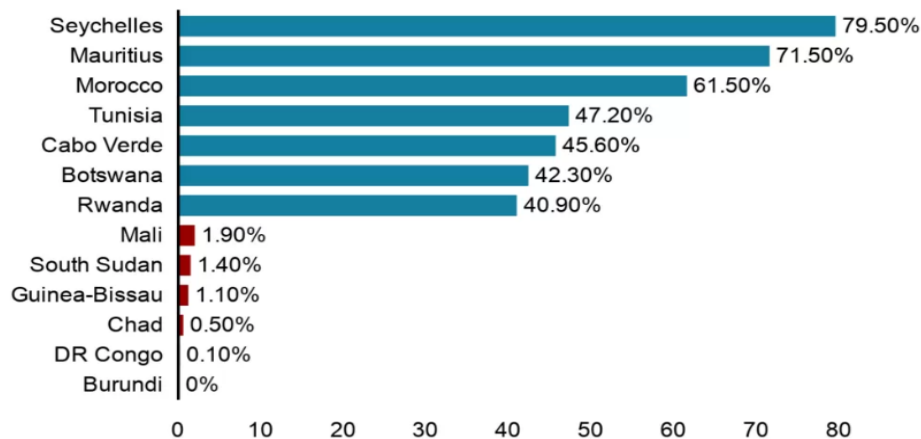


Annexure 3 above is a chart that illustrates the share of people who received at least one dose of Covid-19 vaccines in the year 2021. This chart demonstrates the percentage of population with at least one dose of the Covid-19 vaccination and the share of the world population in 2021. The countries on this chart include Africa, Asia, Europe, North America, Oceania and South America with Europe having the highest percentage of populations with at least one dose sitting between 80% and 100% whilst Africa has the lowest percentage of population with at least one dose sitting between 0% and 20%. This chart also shows us that 80%-100% of Africa's population have not received between 0% and 20% of Covid-19 vaccine doses whereas Asian and South American countries have received the highest percentage of vaccine doses for their population with 80%-100% being vaccinated.

Annexure 4

Most and least vaccinated countries in Africa

Share of total population who received a full dose schedule

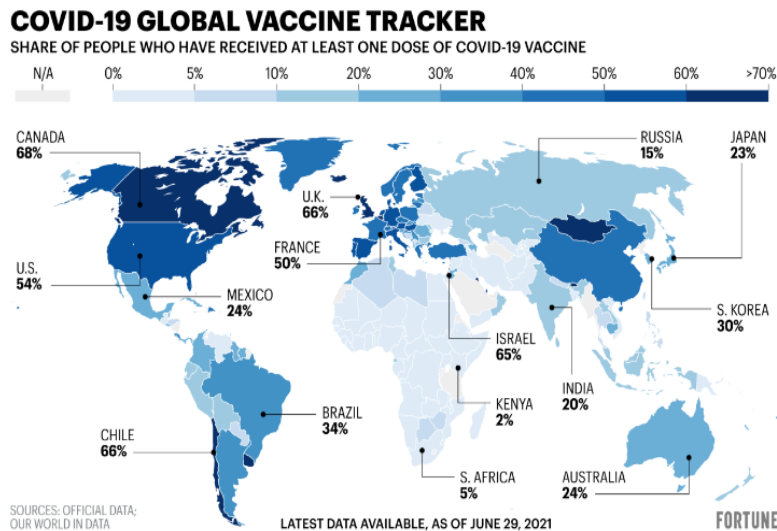


Source: World Health Organization (WHO), data as of 30 December

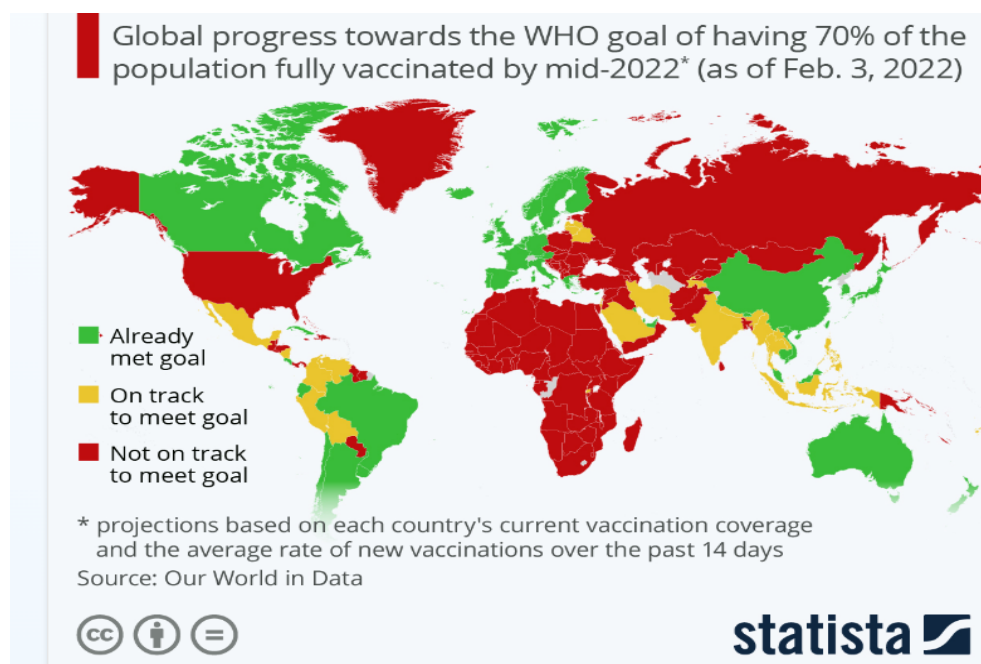
BBC

The data shown in annexure 4 is an illustration of the most and least vaccinated countries in Africa collected by the World Health Organisation. The WHO had set a target to vaccinate 40% of the African continent by December 2021 but as proven in this graph, the target was missed across most of the continent. An estimated 9% of people in Africa were fully vaccinated against Covid-19 in the year 2021 (Mwai,2021). As shown in table 4 above, Seychelles and Mauritius have fully vaccinated more than 70% and Cape Verde has vaccinated about 45%. On the African continent, Morocco, Tunisia, Botswana and Rwanda are the only countries on the mainland of Africa that have exceeded the World Health Organisation's vaccination target. In December 30 2021, less than half of the countries on the continent had achieved more than 10% of the population fully vaccinated. Many countries in Africa have vaccinated less than 5% of their population, Mali has vaccinated 1.90%, South Sudan at 1,40% and Chad at 0,50% (WHO,2021).

Annexure 5



Annexure 6



Annexure 5 and 6 above are two different maps of vaccination access in Africa from 2021 to mid-2022. Annexure 5 shows the Covid-19 global vaccine tracker, the share of people who have received at least one dose of Covid-19 vaccine as of June 29 2021. It shows the rates of vaccinations between 0% and 100%. The map indicates that of all the continents in the world Africa is the least vaccinated with Kenya at a 2% vaccinated population followed by South Africa with a 5% vaccinated population. Annexure 6 is also an illustration of the world map and the global progress towards the WHO goal of having 70% of the population fully vaccinated by mid-2022 (as of Feb 3,2022). This map displays the different countries in the

world that have already met their vaccination goal, are on track to meet their goal and the countries in the world that are not on track to meet their goal. As shown on the map retrieved from statista by Richter (2022), Africa is one of the continents that are not on track to meet their goal. This map illustrates that 122 countries have missed the World Health Organisation's 70% vaccination goal.

Covid-19 and the measures that were taken to prevent the disease from spreading further into the African continent (such as social distancing and travel bans and restrictions) have led to socioeconomic disorder in Africa's economies (Anyanwu, Salami, 2021). The Covid-19 pandemic has had a devastating effect on the lives of individuals. The number of deaths caused by the pandemic on a global scale reached 2,593,210 by 7 March 2021 105,713 in Africa and South Africa had recorded 54,6% of these deaths. South Africa reported 50,678 number of deaths due to Covid-19 making it one of the highest recorded on the continent alongside Egypt, Morocco , Tunisia and Algeria. The African Development Bank estimated that the economic growth in Africa went down by 2,1% in 2020 and the hardest hit was the South African economy whose growth fell by an estimated 7,0% in 2020 (Anyanwu, Salami, 2021).The Covid-19 pandemic brought about a significant decline in the living standards of citizens. This decline in living standards resulted in extreme poverty headcounts in low-income countries.

Covid-19 vaccines in South Africa

The next sub- section of this chapter will be looking at the case of South Africa and its experience with access to Covid-19 vaccines. South Africa is the Southernmost country on the African continent and is home to an estimated 59 million people. The country is bordered by the Atlantic Ocean on the west, the Indian Ocean on the south and east. Along its borders lie Namibia,Botswana and Zimbabwe, Mozambique, Lesotho and Swaziland (Hamilton,1993) South Africa reported its first case of Covid-19 in early March, 2020. The rise in Covid-19 cases and infections prompted the president of South Africa to declare a national state of disaster to alleviate the impact that the Covid-19 pandemic could potentially have (SAG, 2022). The South African government implemented strict measures in addition to those of the World Health Organisation recommendations and Africa CDC mitigation strategies and guidelines (Mbunge, 2020). These measures included scaling up the testing process, lockdowns, travelling restrictions both internally and locally, bans on large gatherings as well as bans on selling alcohol and cigarettes.

It is important to note that South Africa is a different and special case study as compared to other African states. South Africa happened to experience better access to Covid-19 vaccines than other countries in Africa. South Africa was well placed to make major contributions towards Covid-19 research mainly due to many years of investments by national and international funders in HIV prevention and treatment (Moore, Gray, 2023). This meant preparedness for South Africa putting them at the forefront of Covid-19 vaccine research and access. It is believed that South Africa grappled with the continent's largest share of Covid-19 infections since the beginning of the pandemic ensuing the country ramping up pandemic control measures in order to prevent Covid-19 from spreading any further leading to a high number of deaths and making them the most at need for Covid-19 vaccines. The WHO deployed a 35-member expert team to help bolster South Africa's response at provincial and district levels. South Africa kicked off Covid-19 vaccinations in February 2021, initially by targeting high-risk populations such as health-workers; people aged 50 years and those with comorbidities (WHO, 2023).

The Covid-19 pandemic and its high infection rates have had devastating effects on South Africa, its citizens as well as its economy, this can be seen in the increase of unemployment, poverty and crime in the country (ASG, 2023). South Africa already faces high levels of poverty and lockdown during the Covid-19 pandemic worsened poverty in the country, no economic activity meant that there were no income-earning opportunities (Sekyere et al, 2020). The formal productive sector in South Africa is under pressure from the Coronavirus response measures. For instance, the costs that were needed to mitigate the spread of the Covid-19 disease such as testing equipment and treating those that are infected placed additional burdens on the national treasury. As more infections emerged, there was great pressure on health facilities in South Africa as well as an increase in the demand for intensive care beds and ventilators as more people became infected (Sekyere et al, 2020). Covid-19 vaccines are necessary and important to ensure that Covid-19 does not spread any further affecting not only the economy but the lives of South Africans as well.

The South African government has worked closely with the South African Health Products Regulatory Authority (SAHPRA) to make sure that there is no delay in approving the usage of the Covid-19 vaccine (SAG, 2023). The Oxford Astra-Zeneca vaccine, which is one of the Covid-19 vaccines that had been manufactured, had been approved in the year 2021 and was rolled out in other countries around the world. South Africa began by vaccinating an estimated 1,25 million of the country's health care workers. The first doses of Covid-19 vaccines in South

Africa were from Johnson & Johnson, which is another make of Covid-19 vaccines, due to its effectiveness against the Covid-19 501Y.V2 variant. South Africa secured 11 million doses of the Johnson & Johnson vaccine and out of these 11 million doses, 2,8 million doses have been delivered in the second quarter of the year and the rest were delivered throughout the year (SAG,2023). South Africa is the member state of the COVAX facility and agreed to securing 12 million Covid-19 vaccine doses.

This agreement has been accompanied by other vaccines that are available to South Africa through the African Union's African Vaccine Acquisition Task Team Facility. Pfizer is another product of Covid-19 vaccines and has agreed to 20 million vaccine doses beginning with deliveries at the end of the first quarter of 2021. The South African government aims to vaccinate 67% of the population by the end of 2021 and is continuously working with various pharmaceutical companies to ensure they meet this target (SAG,2023). In order to successfully distribute the Covid-19 vaccine the South African government vaccination rollout has a three-phase approach beginning with those who are most vulnerable. Phase one began by focusing on frontline healthcare workers, phase two vaccinated essential workers, person in congregate areas as well as persons over 60 years old and persons over 18 years old with co-morbidities. Phase three, the final phase, focused on persons older than 18 years old, aiming for 22,500,000 of the population (SAG,2023). The South African government has sourced, distributed and made sure that the rollout of vaccinations is successful and is distributed to the provincial governments as well as the private sector. A national register for Covid-19 vaccines by citizens has been established and the vaccination system has been based on a pre-vaccination registration and appointment system. A vaccination card has been provided to all those who have been vaccinated.

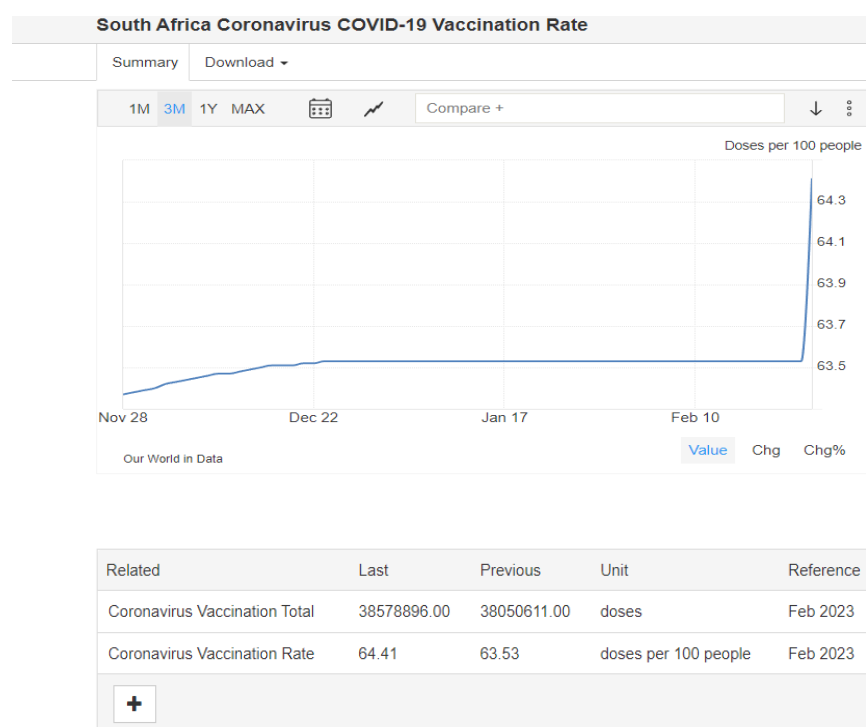
National and international processes for vaccines

Before the Covid-19 vaccine can be administered to South Africa's population, process needs to be followed. First, the vaccine needs to be proven safe and effective in large clinical trials as per standard practice. Second, evidence of the efficacy and safety of the vaccine is required. Third, the evidence needs to be reviewed to create policy recommendations on vaccine usage. Fourth, an external panel of experts assembled by the World Health Organisation which are known as the Strategic Advisory Group of Experts on Immunization (SAGE) takes a look at the results from clinical trials and analyses them (SAG,2023). Fifth, the SAGE panel recommends whether and how the Covid-19 vaccines should be used and finally officials and leaders in different nations either approve or disprove the usage of the vaccine nationally and

develop policies on how to use the vaccines in their individual countries based on the World Health Organisations recommendations (SAG,2023). The Covid-19 vaccine goes through a laborious testing process to detect any common side effects or other safety concerns. After these clinical trials can prove the safety of Covid-19 vaccines, before the WHO can consider a vaccine product, a succession of independent reviews of the efficacy and safety of the vaccines is required alongside regulatory review and approval in the country where the vaccine is manufactured. Vaccines undergo laborious trials and a comprehensive approval process by medical regulators to make sure that they are safe and effective.

Poor vaccine access in South Africa

Annexure 7



As illustrated in annexure 7 above retrieved from Trade Economics (2023), South Africa has missed its 67% vaccination target by an estimated 3% in 2023. Despite the protocols taken by South Africa, the country remains the least vaccinated compared to higher income countries in the world to date. Throughout this paper we have given possible reasons behind the poor access of vaccines in Africa and the next sub-section will look at some of the internal and external reasons in South Africa.

Internal reasons

It has been over a year since South Africa began rolling out its Covid-19 vaccination programme and has missed its target to vaccinate 67% of the population (Cooper et al, 2022). Cooper et al (2022) believe that this is due to the vaccine hesitancy in the country. There has been a constant and ongoing fear and uncertainty about the safety and effectiveness of the Covid-19 vaccine. The misinformation and influx of fake news on the Covid-19 vaccine has led to mistrust and hesitation amongst citizens. There has been misinformation on the virus and how it is spread, about Covid-19 vaccines and what they can and cannot prevent as well as dishonesty about the duration of vaccine immunity. Corruption scandals alongside impractical and inequitable bans have also damaged South Africans' trust in their authorities. According to Cooper et al (2022) the hesitancy of Covid-19 vaccines in South Africa is due to a number of possible demographic and socio-psychology root causes such as access and logistical issues relating to vaccination services are significant contributors to the poor access of Covid-19 vaccines in the country. There have been questions of geography amongst citizens as well as transport and other costs that are related to accessing vaccination services. The long distances have made it difficult for those who cannot afford to travel access Covid-19 vaccines. The challenges of navigating the online registration system for the Covid-19 vaccine in South Africa have also contributed to people's hesitancy to get vaccinated (Cooper et al, 2022).

External reasons

The ongoing geopolitics surrounding Covid-19 vaccines are another reason behind the poor access of vaccines in South Africa. These include; vaccine nationalism and vaccine diplomacy, donor dependency and patent laws. These have produced inequities in the access to Covid-19 vaccines between the global North and the global South (Cooper et al, 2022). Vaccine nationalism is a popular term coined during the Covid-19 pandemic and refers to prioritising the interests of one country when it comes to obtaining and governing vaccines. Vaccine nationalism became a popular term in the pandemic as wealthy countries purchased and stockpiled more Covid-19 vaccines than they needed leaving poorer countries to scramble for enough vaccines for their citizens (de Jong, 2021). In South Africa,

Vaccine nationalism plays a role in the insufficient access of Covid-19 vaccines in South Africa as it results in a shortage of vaccines for the country. Organisations such as the World Health Organisation and the African Union through Africa's Centre for Disease Control and Prevention (Africa CDC) have made great effort in acquiring Covid-19 vaccines for the continent as part of its approach in tackling the pandemic however there was not much help

from the international community. The continent experienced vaccine nationalism explicitly and implicitly, there are countries who were ahead in vaccinating the vast majority of their population while the most vulnerable in many countries did not receive any vaccine shots (de Jong, 2021). The World Health Organisation calculates that Africa administered only 2% of the global Covid-19 vaccines jabs. The International Monetary Fund (IMF) noted that almost half of the United Kingdom and a third of the United States population received one dose and could look forward to strong economic recoveries (WHO, 2021). However, South Africa has vaccinated only 0,5% of its population according to the Africa Data Hub's Vaccine Tracker. Namibia has vaccinated 0,08% of its population and Mozambique 0,18%. The Africa CDC acquired 220 million doses of the Johnson & Johnson vaccine with an option for another 180 million which would enable the continent to vaccinate 400 million people but these would not be enough to meet Africa's target of vaccinating 750 million or 60% of its population by the end of 2022. It is necessary to note that the South African government contributed to the country's poor vaccination uptake as it allowed vaccines delivered to them by Africa CDC to expire, it was deplorable after the country's extraordinary efforts to get vaccines. Nevertheless, the overall figures have been low.

In 2021, Pfizer, BioNTech and Moderna made profits of up to \$54 billion and supplied less than 2% of their vaccines to low-income countries. The distribution of vaccines in South Africa was incredibly slow which ignited fears of deepening poverty and prolonged economic recovery. Africa holds the lowest vaccination rate in the world with less than 8% of the population on the continent fully vaccinated by the end of 2021. There have been insufficient supplies provided to Africa through the COVAX facility. Wealthy nations alongside corporate giants gave false promises of recovery from the Covid-19 pandemic. Many people from Africa were denied life-saving Covid-19 vaccines (DH, 2020) and a large portion of African countries have had a difficult time recovering from the Coronavirus pandemic due to high levels of inequality, poverty and unemployment worsened by unequal distribution of vaccines. Deprose Muchena, Amnesty International's Director for East and Southern Africa states that "Covid-19 should have been a decisive wake-up call to deal with inequality and poverty. Instead, we have seen deeper inequality and greater instability in Africa exacerbated by global powers, especially rich countries, who failed to ensure that big pharma distributed vaccines equally between states to ensure the same level of recovery from the Covid-19 pandemic,"

Chapter 5

Discussion of findings and Conclusion

Introduction

Our findings in chapter four tell us that Africa remains the least vaccinated continent when compared to other continents in the world. The data and statistics collected show us that Africa and its nations maintain the lowest vaccination rate due to the poor access of Covid-19 vaccines (Holder, 2023). In light of the information gathered from the case study, it is evident that the rest of the world has overlooked the African continent's need for Covid-19 vaccines and its recovery from the Corona Virus pandemic. Throughout this study, there have been multiple arguments and reasons for the poor access of vaccines in Africa. These include both internal and external reasons and have resulted in a much slower vaccine rate in Africa compared to the rest of the world. According to Ayangebara (2021) one example of an internal reason for poor vaccine access are the challenges of vaccine hesitancy which caused poor uptake of Covid-19 vaccinations. African countries also lack the infrastructure to store and support Covid-19 vaccines (Ayengbara, 2021).

Loembe' et al. (2021) uses vaccine hoarding by wealthy nations as an example of an external reason, resulting in poorer nations such as South Africa having limited access to Covid-19 vaccines. These countries enacted pre-purchase arrangements with manufacturers in order to stockpile vaccine doses for their populations. This resulted in wealthy regions such as the United States of America and Europe having sturdier vaccine access and a higher percentage of vaccinated population while Africa suffered in comparison (Loembe' et al., 2021). This mirrors what happened during the HIV/AIDS and H1N1 Influenza pandemic in the mid-1990s when high prices of treatment left Africa vulnerable to these diseases (Nkengasong et al., 2020). Based on this evidence, it is indicated that between the mid-1990s and contemporarily, there have been few amendments to vaccine policies and the Covid-19 pandemic has been reminiscent of past events of poor vaccine access on the continent.

The previous chapter of this research report shows collected data, info graphics and statistics to help in answering the research question on Covid-19s poor vaccine access in Africa which is "what are some of the reasons and explanations behind the poor access of covid-19 in Africa?". The final chapter will be an attempt to answer the main question along with the subsidiary questions which are:

- Why has the rollout of the Covid-19 vaccine to Africa been poor?

- What has been the role of international organisations such as the WHO (including COVAX) in vaccine rollouts?
- How has the concept of vaccine diplomacy contributed to the poor access of vaccines in Africa?
- How do internal factors and external factors contribute to the poor access?

This chapter will be giving some of the possible reasons and explanations behind the poor access of Covid-19 vaccines on the African continent. This chapter aims to give a discussion on the information gathered in chapter 4 and the literature review in chapter 2 and look at the meaning of findings in the context of the bigger question of this research report.

Why has the rollout of Covid-19 vaccines to Africa been poor?

In December 2021, the Covid-19 vaccination drive, which has been the biggest in Africa, commenced. A total of 54 nations in Africa were rolling out Covid-19 vaccines and an estimated 250 million doses were given on the continent (WHO, 2021). In comparison, only 3% of the 8 billion doses given globally has been distributed in Africa and only 8% of the African population has been fully vaccinated, whereas, 60% of high-income countries' population has been vaccinated. As shipments of vaccines continue to arrive in Africa, the World Health Organisation has been helping African countries review and improves their Covid-19 vaccine rollouts. However, the question still remains, why has the rollout of Covid-19 vaccines to Africa been poor? According to the World Health Organisation, one of the greatest challenges facing Africa in relation to vaccine rollout and vaccine access are limited funds and commodities (WHO, 2021).

The African continent faces a shortfall of 1,3 billion in American dollars for operational costs, including cold-chain logistics, travel costs and payment for vaccinators and supervisors as well as a pending shortage of syringes and other crucial commodities. Reliable funding would help Africa deal with its challenges of poor Covid-19 vaccination and help with training vaccinators, making sure there is enough support from staff and healthcare workers, improving software for data capture and ensuring that African countries have enough freezers and logistics elements (WHO, 2021). Another prevalent reason the uptake of Covid-19 vaccines to Africa has been poor is the spreading of misinformation in various countries in Africa. The spreading of misinformation and fake news on the Covid-19 vaccination leads to mistrust and vaccine hesitancy which drives down demand "Misinformation is omnipresent and when vaccine

hesitancy affects uptake, countries face the logistical nightmare of having to quickly redistribute doses so that none are wasted” (WHO, 2021).”Low demand is contributing to low uptake” says Dr Gilson Palaku, an immunization officer in the World Health Organisation covering central African countries (WHO, 2021).

The spreading of misinformation through social media platforms has diminished confidence in the Covid-19 vaccine to a great extent. Misinformation has spread rapidly around the world and by the time Covid-19 vaccines arrived in Africa and became available for use by nations, it had already affected the vaccination rollout on the continent. A pressing example of misinformation spread around the vaccine is that vaccines allegedly contained a detectable microchip that attracts metallic objects to the injection site of vaccinated individuals (Hassan, 2022). Fortunately, this fake news was debunked by the appropriate authorities. Misinformation on the vaccine had spread significantly and began to create scepticism of the routine vaccines amongst citizens which resulted to anti-vaccine distress, making anti-vaccine voices louder (Kagina, 2022). The World Health Organisation Director-general highlighted that between May 2021 and January 2022, only 10 countries account for more than 75% of all vaccines that have been given out on a global scale (Hassan et al., 2022). Data that had been collected in early 2020 in table two of chapter four of this research suggests that the vaccination rates in high income countries and regions is more than 10 times faster than in lower income countries and regions.

More than 9,5 billion doses of the Covid-19 vaccine have been ordered and distributed globally with just 3,4% of these vaccines (321 million) being administered to Africa and its nation states (Africa CDC, 2022). Hassan et al. (2022) gives an alternative reason for the poor rollout of the Covid-19 vaccine by stating that Africa does not produce its own vaccine and relies heavily on imports from countries that produce the Covid-19 vaccine. Hassan et al. (2022) alludes that this situation has been made worse due to African countries failing to pre-order Covid-19 vaccines from the manufacturers during the early development stages of the vaccine allowing for higher income countries to have further access. Africa had to rely profoundly on the World Health Organisations COVAX initiative, bilateral donations and a late procurement drive from the African Union (AU) which includes UNICEF’s commitment to supply 220 million doses of vaccines to support the African Vaccine Acquisition Trust (AVAT) for the 55 AU member states.

What has been the role of international organisations such as the WHO (including COVAX) in vaccine access and uptake?

Based on data collected in table six of chapter four of this research, the World Health Organisation has failed to reach its 67% vaccination target in Africa; therefore, the continent remains least vaccinated. This question will help us understand the findings of this research by analysing the role of international organisations such as the World Health Organisation and the Africa Union in ensuring fair and equitable vaccine access and their possible roles in the poor access of Covid-19 vaccines and low vaccination rates on the African continent. Vaccines are important health tools for combatting the spread of the Covid-19 disease, yet, as indicated by our findings in chapter four, low-income and middle-income countries have had inadequate access to Covid-19 vaccines (Ramchandani, 2021). As indicated in table two of our findings, from Dec 2, 2020 to March 10, 2023, low-income countries have vaccinated less than 50% of their population including the booster vaccinations.

The Access to Covid-19 Tools Accelerator (ACT-A) is a multilateral coordination mechanism which has been set up to “accelerate development, production and equitable access to covid-19 tests, treatments and vaccines globally” (Ramchandani, 2021). Another international organisation alongside ACT-A which has played a significant role in vaccination rollout, is the COVAX initiative. COVAX, the vaccine pillar of the ACT Accelerator, works towards supporting countries to achieve their individual vaccination goals through delivering fair, equitable access to vaccines for every country that participates. The ACT-A and COVAX are initiatives that bring together governments, scientists, businesses, civil society, philanthropists and global health organisations. However, despite its efforts and initiatives, data and statistics collected in chapter four indicate that the World Health Organisation alongside ACT-A and COVAX have fallen short of its expectations. The WHO struggled with its strategic prioritisation despite the importance and need for these facilities. COVAX and ACT-A received political attention but has unfortunately been held up in many countries.

From the data and statistics gathered, we can conclude that international organisations have played a role in the poor access of vaccines in Africa despite their great efforts. According to the theory of institutional liberalism, countries of the world have a shared interest in containing the Covid-19 virus around the world; however the hoarding of vaccines by richer countries proves otherwise, the cooperation between richer and poorer nations has been unsuccessful. The World Health Organisation alongside ACT-A and COVAX have been said to be supply driven and not having enough focus on inclusivity and transparency by other countries and

civil society organisations (Ramchandani, 2021). According to the theory of liberal institutionalism, The ACT-A has struggled being accepted as a global mechanism due to its lack of engagement with Africa, Russia and other lower income countries. Ramchandani (2021) believes that COVAX and ACT-A were unsuccessful in reaching their target in Africa and other lower income countries because they were established during the global pandemic in a series of distinct stages instead of establishing themselves right from the beginning of the pandemic in a more consistent and continuous fashion. He proclaims that “the process was based on a standard market model-that is, development, trials, emergency use authorisation, selling to high income countries then redistributing to lower income countries rather than with an end-to-end view whereby equitable access is considered from the beginning, during product design and allocation, research and development, manufacturing and procurement processes” (Ramchandani, 2021).

Furthermore, the World Health Organisation and its initiative to deliver fair and equitable Covid-19 vaccines was unsuccessful in ensuring fair and equal Covid-19 vaccine access in Africa as it had intended. International organisations and corporations developed and sold exclusive vaccines designed for wealthy countries which left poorer countries heavily reliant on donors, development assistance and charity. COVAX also failed to compete with these very high income countries that had great purchasing power and hosting big manufacturers. Insufficient and delayed financing is one of the crucial reasons behind COVAXs and the World Health Organisation’s failure to secure global access to Covid-19 vaccines and lifesaving health technologies (WHO, 2022). The development of Covid-19 vaccines has been a success; however, the global effort of the COVAX initiative to make the vaccines available on a global scale had no clear global strategy. For instance, there were more efforts put into making sure that Covid-19 vaccines were available and ready as fast as possible but there was no adherence to target product profiles that consider use in lower income countries (for example not requiring ultra-cold chain holding) (Ramchandani, 2021). The lack of a clear strategy hindered the successes of COVAX and its 67% vaccination target in Africa.

How has the concept of “vaccine diplomacy” and “vaccine nationalism” contributed to the access of vaccines in Africa?

‘Diplomacy’ can be understood as the art of conducting relationships for gain without conflict. Vaccine diplomacy is defined by Su et al. (2021) as nations’ vaccine efforts that aim to build mutually beneficial relationships with other nations. The production of Covid-19 vaccines has enhanced greatly and more than 12 billion vaccines were manufactured in 2021 alone, however,

as mentioned in previous chapters of this research report as well as the evidence given in chapter four of our findings, majority of these vaccines went to richer and higher income countries. According to table one in chapter four, higher income countries such as Latin America and the Asia Pacific have vaccinated an estimated 82% of their population whereas, lower income countries such as South Africa have only vaccinated an estimated 37% of their population (Holder, 2023). High-income countries combined have managed to secure approximately 5 billion Covid-19 vaccines as of May 2021 and lower income countries have managed to secure only 270 million doses of Covid-19 vaccines (Su et al., 2021).

Amoah and Hinson (2022) offer another definition of vaccine diplomacy which is “a branch of global health diplomacy that relies on the use and delivery of vaccines”. Vaccine diplomacy focuses on humanitarian intervention as a means of improving the standing of a country. Vaccine diplomacy is the act of creating and increasing goodwill in developing nations. An example of vaccine diplomacy is India donating some of its supplies of the Astra Zeneca/Oxford Covid-19 vaccine that it produced to other countries that surround it such as Bangladesh, Myanmar and Nepal. Another example of vaccine diplomacy is when China spent an estimated \$2 billion to help developing countries and making its vaccines available to them. An estimated million doses of China’s Sinopharm Covid-19 vaccine had been exported to countries such as Nepal, Pakistan, Cambodia, Sierra Leone and Zimbabwe by the end of February 2021 (Amoah and Hinson, 2022). Vaccine diplomacy assists and facilitates cross-border flow of capital, goods as well as services that affect vaccine access and positively aiding in more Covid-19 vaccinations globally. Despite Africa being the least vaccinated continent, vaccine diplomacy contributed positively and supported Covid-19 vaccine access in Africa.

Vaccine nationalism, on the other hand, is another concept alongside vaccine diplomacy that was coined during the Covid-19 global pandemic. According to Amoah and Hinson (2021) vaccine nationalism can be described as “taking the form of overt export bans or limits that aim at increasing domestic availability of vaccines at the expense of foreign supply or they can take less transparent but often equally effective forms”. This is a result of poor cooperation and collaboration between countries to help in the timely and equal access of Covid-19 vaccines globally. One of the characteristics of vaccine nationalism is its inward focus on vaccine distribution of producing nations which results in trade barriers and/or delays in the shipment of vaccines. It has been noted that the global economy stands to lose an estimated \$9 trillion if vaccine nationalism perseveres which would leave developing nations such as Africa behind in vaccinating their citizens. Another characteristic of vaccine nationalism is the trends

amongst governments to secure vaccine doses for their nations at the detriments and cost of other, less-developed, nations.

An example of this hoarding was in March 2021 when the European Union and Italy withheld Covid-19 vaccine shipments of 250000 Astra Zeneca vaccines that were headed to Australia with the objective of ensuring that the personal and domestic needs of Italy were catered for first (Amoah and Hinson, 2021). Vaccine nationalism has had great hindrances during the pandemic as well as post-pandemic. Hoarding by richer nations has the potential to undermine harmony and trust between nations and the potential to weaken international collaborations between countries. Above all, the concept of vaccine nationalism contributes greatly to the poor access of Covid-19 vaccines in Africa as these vaccines are being hoarded and kept by wealthier nations leaving none for lower income countries to vaccinate their citizens.

How do internal factors and external factors contribute to the poor access of Covid-19 vaccines in Africa?

In the final subsidiary question of this research report we look at how internal and external factors have contributed to the poor access of Covid-19 vaccines in Africa and help understand the internal and external reasons behind the data and statistics reported in our previous chapter four. Scholars have offered a wide range of data on the shortcomings of the Covid-19 vaccination rollout and both the internal and external reasons behind the poor access of vaccines in Africa.

Internal reasons

Authors such as Ayenbgara (2021) from our literature review explore some of the internal reasons behind the poor vaccines access in Africa and believe that the storage and regulatory hurdles is one of the major reasons. Since the manufacturing of Covid-19 vaccines, Africa and its countries have experienced challenges of inadequate storage system due to limited funds to power provide cold chain and maintain a structured network to monitor the vaccine distributions and these problems are mainly seen in rural communities and villages due to epileptic electricity and frequent power outage, limited cold chain equipment and facilities (Ayengbara, 2021). Many African countries lack the infrastructure to store and transport certain vaccine candidates. Most of the countries on the continent are only equipped with a cold storage chain that can only maintain standard refrigeration temperatures of -8C. This means that vaccines such as Pfizer might go to waste.

Loembe' (et al., 2021) states that another internal challenge for the African continent and developing states is the scarcity of sustainable national investments in domestic vaccine research, development programs and industry. The domestic production of vaccines has been inadequate and has not been appropriately prioritised. The African continent is home to 1, 3 billion people produces only 1% of the doses it uses (Loembe' et al., 2021). African nations have had few incentives to support a local vaccine industry. According to Loembe' et al., (2021), the over-reliance on external suppliers of the covid-19 vaccination helps to explain and understand why most African countries remain the least vaccinated. The reason why the over-reliance on external suppliers causes a delay is because external suppliers act as substitute decision-makers for reviewing trial data and granting approval for new therapeutics and vaccines. There are various processes that occur before vaccines can be issued, these processes then cause a delay. For instance in South Africa, there were complex steps and processes required by the government before the vaccine could be administered to its citizens. Storage, supply and regulatory hurdles meant that there are no any vaccines to rollout, this lack on its own causes a delay in vaccination rollouts in Africa (Loembe' et al.,2021).

External reasons

Usman (2021) explore some of the external reasons behind the poor access of vaccines in Africa. Essentially, these are reasons and factors that go beyond continent's borders and are ultimately out of African control. The third subsidiary question of this research report explores vaccine nationalism and vaccine diplomacy as being a contributing factor to the poor access of Covid-19 vaccines in Africa and these can be considered as an external reason. Usman (2021) proclaims that another external factor behind the poor access is the insufficient global supplies. Usman (2021) looks at some programmes that have been put into place such as COVAX which aims to help poorer countries inoculate about 20 % of their population and how its objectives are quite limited and in essence have not been successful and how there has been a shortfall of vaccine supply. He believes that Africa's challenges accessing covid-19 vaccines are compounded by an unravelling multilateral order marked by heightened great power rivalries. Soft power diplomacy by rising powers is occurring alongside vaccine nationalism by wealthy countries.

Prominent global public health leaders have drawn attention to a trend of hoarding limited medical supplies to the detriment of the vast majority of countries around the world. "We're in a very tough spot when it comes to supply" says Dr Richard Mihigo, World Health

Organisation (WHO) Africa's Immunization and Vaccines Development Programme Co-ordinator (WHO, 2021). Another external reason explored in literature is the funding and pricing of the Covid-19 vaccine. Guzman et al. (2021) argue that the delay in vaccines in Africa is due to the pricing policies for low-income countries. Affordable and equitable access to medical products and technologies has long been a challenge for health systems and the Covid-19 pandemic has further highlighted this challenge (Guzman, et al., 2021). Prices drive health expenditure and ultimately population-wide coverage and access to novel products. Higher prices increase the financial burdens for populations and governments and as part of governments broader policymaking process, one of the roles of a governing body is developing and implementing well-planned pricing policies and guidelines to help ensure affordable and equitable access (Guzman, et al., 2021). Most countries on the African continent are excluded from the competition for doses because of their low purchasing-power.

Pratt and Lewin (2021) write on how vaccines will shape the new geopolitical order. These scholars look at trade relationships between the richer and poorer countries in relation to Covid-19 vaccinations. The pandemic has vastly exacerbated the global north-south divide, with wealthy Western states moving steady toward herd immunity while a majority of African, Asian and Latin American countries wait for vaccines to trickle down. These scholars look at how Africa being non-suppliers of the vaccine has contributed to the poor access on the continent (Pratt and Levin, 2001). Successful vaccine distribution stories can be found in trade-relationships between wealthier states yet in Africa not being so successful due to supply limits and trade disadvantages. Pratt and Lewin (2021) argue that the West seems to be selfish in their supply of the vaccine and this could worsen already unjust trade relationships with the global South. The evidence gathered in this research reiterates that the poor access and uptake of Covid-19 vaccines lies in the hands of richer nations and the external reasons for poor vaccine access. The internal reasons are relevant to the research however Africa was at a great disadvantage from the onset of vaccine manufacturing and distribution. Richer nations such as the United States had an upper hand due to their buying power as well as their superpower status.

Conclusion

We began this research by asking the main question on what some of the reasons and explanations behind the poor access of vaccines on the African continent. This research paper began by looking at the Corona Virus, what it is and where it originated from. Coronavirus Disease is an infectious disease that is caused by the SARS-Cov-2 virus. It is a communicable

respiratory disease caused by a new strain of coronavirus that causes illnesses in individuals (WHO, 2022). Corona Virus soon became a global pandemic and thereafter, necessary precautions were put into place to ensure that the disease does not spread any further. There were lockdowns, campaigns on sanitation as well as social distancing and the encouragement of the consistently washing of hands. Of all these precautions, vaccinations were the most viable. When vaccines started getting manufactured there was a high demand around the world. Various campaigns such as COVAX by the World Health Organisation came into play to make sure that there is a fair and equal distribution of these vaccines.

However, despite these global efforts and the need for Covid-19 vaccines at a dire and strenuous time globally, Africa turned out to be the least vaccinated continent. This research report went on to explore and explain some of the possible reasons, both internal and external to Africa, behind the poor access of Covid-19 vaccines in Africa. The first chapter of the research gave an introduction and overview of the overall report and what it seeks to explore. It gave an insight on what Covid-19 is and what the initiatives are behind getting vaccines to prevent it from spreading. The second chapter gave a literature review on all the possible internal and external reasons that various authors have explored, the third chapter went on to look at the different methods that *were* used to answer the main question. The fourth chapter gave all the findings of vaccine access in Africa and around the world and the final chapter gave a discussion of our findings.

This research report has answered the question on poor Covid-19 vaccine access in Africa by exploring both internal and external reasons. The key findings of this report suggest that Africa, between the years 2020 and 2022, has been the least vaccinated continent and has received the least access to Covid-19 vaccines compared to the rest of the world (mostly European and Western nations). The key findings indicated by statistics in the form of graphs and tables also indicate that the case of South Africa has been poorly vaccinated and has missed its target of 67% vaccinated population in the year 2023. These key findings support the notion that indeed Africa has been poorly vaccinated as compared to the rest of the world. The literature in the report has assisted in understanding what some of the reasons (both internal and external) behind this poor access are. The findings, literature and evidence presented in these chapters help in supporting the claims and the hypothesis of this research report. The theoretical framework ties together the key findings and literature by explaining the reasons and motivation behind the data presented in International Relations. Using a lens of classical realism we find that richer states have hoarded vaccines for themselves leaving an

insufficient amount for poorer countries, the data and key findings shown in chapter 4 supports the theory of classical realism and that vaccine hoarding and nationalism by richer countries is the reason behind the poor access of Covid-19 vaccines in Africa. The theory of Institutional liberalism suggests that there can be a fair and equal distribution of Covid-19 vaccines in Africa as all states share a common and shared interest of containing the virus around the world, this theory believes in human rationality however due to states acting selfishly this made it difficult to achieve a common goal of fair and equal Covid-19 vaccine access.

We can conclude that Africa was indeed the least vaccinated continent in the world and experienced, to this day, the lowest vaccination rates in its population. The internal reasons given in this report are vaccine pricing, funding as well as the lack of storage for the vaccination. External reasons include hoarding of vaccines by richer and wealthier countries. Authors exploring the external reasons behind the poor access of vaccines in Africa believe that the greed of higher income countries played a significant role in Africa receiving an insufficient amount of vaccines. Both internal reasons and external reasons were explored to help understand the poor access of vaccines in Africa. Africa is the least vaccinated continent despite global initiatives and efforts such as COVAX by the World Health Organisation and this has had dire impacts on its economy and the recovery of its citizens. It is essential that Africa, UNICEF, GAVI, COVAX, WHO and the rest of the world revise the vaccination rollout programme to ensure that there is indeed a fair and equal distribution of Covid-19 vaccines for all and in turn a fair and equal recovery for all.

Recommendations

Throughout this study, we have gathered a wide range of data and information on the poor access of vaccines in both South Africa and Africa and the exceptionally low rate of vaccine and vaccinated persons on the continent. As it stands, Africa is the lowest vaccinated continent compared to all the other continents in the world leaving the continent, its countries and its citizens at a great disadvantage and inability to fully recover from the Corona Virus global pandemic. The next sub-section of this research report will be exploring some recommendations for South Africa, Africa and the world and how the alarming issue of poor Covid-19 vaccine access can be resolved and avoided in the future.

The World Health Organisation can begin to increase deliveries from laboratories and pharmaceuticals to Africa which will in turn ease shortages and create the need for countries to speed up the rollout of Covid-19 vaccines. Africa can increase its supplies by revisiting programmes such as COVAX and ACT-A set by global partners such as The World Health Organisation (WHO). The WHO, UNICEF and other partners can scale up efforts to overcome hurdles, improve coordination and speed up vaccination drives (WHO, 2022). There can be more initiatives like COVAX as well as advocacy for increased Covid-19 vaccines procurement and manufacturing in South Africa and other African countries as well as more local Covid-19 vaccine research and testing approaches that are led by South African and African scientists and institutions (Cooper et al., 2021). The World Health Organisation has already begun to deploy technical experts to 20 African countries that are facing challenges with vaccine deployment to form special support teams for three to six months and up to a year if necessary. These support teams are working under the ministries of health to strengthen partner coordination, logistical and financial planning including micro planning, surveillance of adverse events following immunization and the management of data on vaccination uptake and stock (WHO, 2022).

Governments of African nations can create more and better awareness of the Covid-19 vaccine as the misinformation being spread through social media has created ample mistrust. Governments can begin campaigns that engage and empower communities so that they may follow key public health measures and support vaccination. Working with communities and spreading awareness of the Covid-19 vaccine in African communities will strengthen trust and confidence in vaccination. “This year, a lot more needs to be done to gain communities’ trust” (WHO, 2023). When communities are in the driver’s seat, they become vital contributors to finding solutions to the outbreaks of diseases. In South Sudan, community-based Red Cross volunteers tackled the problem of slow vaccine uptake, through improved community trust, and helped prevent vaccine wastage,” said Mr Mohammed Omer Mukhier, IFRC Regional Director for Africa (WHO, 2023)

In South Africa, there has been major mistrust of the vaccine and therefore a need for meaningful communication strategies to help address the communities’ on-going concerns. It is important that communication is done to both communities and individuals within patient-health care worker encounters (Cooper et al., 2022). How this information is relayed is also important in both South Africa and other African countries and communities. A recommendation for effective communication could be communicating in people’s languages

as well as using trusted leaders and reliable communication mediums for example, official government websites rather than relying solely on social media as messengers. Communicating the truth on Covid-19 vaccinations uncertainties and risk factors (such as side-effects) can also help building trust in African communities. South Africa has experience with community engagement and mobilization through years of HIV advocacy and this literacy could be drawn upon for Covid-19 vaccine communication (Cooper et al., 2021).

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