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Covid-19 information disorders on WhatsApp and non-compliance to Covid-19 prevention measures

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Abstract

The impact of social media on communication and information sharing is undeniable. However, it has also become a breeding ground for sensationalism, misinformation, and falsehoods. This has been argued in literature to have a significant impact on public opinion and decision-making. Social media platforms such as WhatsApp are prominently used for news dissemination. However, the ease of sharing information that these platforms have provide has led to the proliferation of information disorders such as misinformation and disinformation. Information disorders affect public opinion and decision making, shaping sentiment and influencing policymakers. Guided by Rothkopf's (2003) concept of 'information disorders' and Stuart Halls reception theory, this study uses content analysis and interviews to explore the nature of Covid-19 misinformation and disinformation that circulated on WhatsApp and how it influenced people not to adhere to Covid-19 prevention strategies that were meant to slow its spread. It found out that misinformation and disinformation about Covid-19 varied focusing on issues such as vaccine efficacy, Covid-19 cure and treatment among other issues. This paper argues that misinformation and disinformation influenced some people to not adhere to Covid-19 prevention measures.

Keywords: *Sensationalism; Misinformation; Disinformation; Social media; Public opinion; Clickbait; Fact-checking*.

Introduction

This study looks at Covid-19 misinformation and disinformation that spread via social media and how it influenced peoples' decisions to not adhere to prevention measures that were meant

to slow the spread of the virus. There are two key research questions that guide this study: (1) What types of misinformation and disinformation about Covid-19 circulated on WhatsApp? (2) How did the identified misinformation and disinformation influence peoples' decision not to adhere to Covid-19 prevention measures or strategies in Zimbabwe? Covid-19 is a respiratory disease caused by the coronavirus 2 and in March 2020, it was declared a global pandemic by the World Health Organization (WHO) (Aduloju, 2021). To slow its spread, governments applied several strategies such as physical distancing and vaccination operations (Gemenis, 2021; Scannell et al., 2021). However, misinformation and disinformation on social media platforms undermined these efforts (The Lancet, 2020; Springer and Ozdemir, 2022). Misinformation and disinformation refers to unintentional and intentional false information respectively, that is designed to mislead and erode public trust (Springer and Ozdemir, 2022). It was common during the Covid-19 pandemic. The first case of Covid-19 was reported in Zimbabwe on March 2020 (Muorwel and Vincent, 2020). The government responded by implementing Covid-19 prevention strategies to control the spread of the virus. However, the spread of misinformation and disinformation on social media compromised the effectiveness of these strategies resulting in non-compliance with the Covid-19 prevention measures. Grounded in the concepts of the "infodemic" and reception theory, this study identifies the types of misinformation and disinformation that the public consumed and explores how it influenced people to not comply with the Covid-19 prevention measures.

Misinformation and Disinformation on social media

Globally, there is an intense shift towards technology based communication, resulting in the rapid growth of technology aided communication such as social media platforms. The definition of social media remains broad (McCay-Peet and Quan-Haase, 2017). According to Davis (2016), social media refers to interactive internet applications or digital platforms that empower users to create, share, and engage with content, fostering participation in virtual communities. Alternatively, Carr and Hayes (2015: 49) describe social media as internet-based channels that facilitate mass personal communication, where users benefit from content generated by other users. Generally, social media refers to interactive media technologies such as social networking platforms like Facebook, Twitter and WhatsApp and websites, (Kietzmann and Hermkens, 2011. These platforms have transformed the process of sharing

information and the consumption patterns, with subsequent impact on public opinions and decision making processes particularly on health related issues. These technologies have enabled global communities to communicate and share information faster and effortlessly. Digital technologies have their disadvantages such as contributing to the spread of misinformation and disinformation. Information on social media platforms uses sensational tactics such as exaggeration to capture attention and boost engagement (Vosoughi et al., 2018). As such, due to the pursuit of reaching as many audiences as possible, accuracy is compromised leading to the spreading of misleading or false information. Furthermore, the fact that on social media, people can easily share information quickly enables users to quickly spread information without verifying its truthfulness thus making social media a fertile ground for the rapid spread of misinformation.

It is widely agreed that social media provides individuals and organisations with a means to communicate, collaborate, and engage through user-generated content, including text, images, videos, and links. Users of social media platforms share and exchange information, opinions, and knowledge (Deshpande and Whiting, 2016). Social media platforms enable people to communicate in real time. This investigation takes into account the interactive nature of social media, which facilitates rapid information dissemination (Kwon et al., 2021). The study's primary focus is to examine the prevalence of misinformation and disinformation on a specific social media platform, WhatsApp, and its implications for responses to health crises. The Covid-19 pandemic led to the rise of an infodemic where "an overwhelming amount of information about the disease is available" (Ranjit et al., 2021: 2). In other words, due to the extensive use of social media for the dissemination of information, Lim (2023) notes that there now is a pandemic of information which is characterised by the presence of information disorders namely misinformation, disinformation and malinformation. These information disorders undermine truth and fact (Perez-Escolar et al., 2023).

Misinformation refers to false information that is unintentionally disseminated (Wu et al., 2019). In other words, misinformation misleads and is usually shared or spread by individuals unknowingly or unintentionally. Disinformation is the deliberate sharing of false and inaccurate information (Hussain and Soomro, 2023). These information disorders are widespread particularly on social media platforms and they influence public opinions and decision making processes. Their spread has resulted in negative impacts on public health, for example vaccine hesitancy, noncompliance with disease prevention measures, and scepticism

towards scientifically supported guidelines. To reduce the spread of the Covid-19 pandemic, various strategies such as the wearing of masks, social distancing and sanitising were implemented. However, the spread of misinformation and disinformation undermined these strategies (Gisondi et al., 2022). Complications arose from harmful and contagious online misinformation and disinformation surrounding the virus. As the community faced the Covid-19 pandemic, they also had to deal with the problem known as the COVID-19 infodemic.

Social media's ability to amplify false health information existed before COVID-19, particularly regarding topics such as national elections, tobacco use, vaping, and recreational drug use (Gisondi et al., 2022; Ncube and Mare, 2022; Madrid-Morales et al., 2021). Tsfati and Cappella, (2003) argues that besides the direct effects of information consumption, social media platforms possess the ability to shape public sentiment and influence on policymakers, extending beyond. Misinformation can affect response to critical issues such as health crises and even contributing to the propagation of harmful ideologies. In the field of public health, the circulation of false information about the effectiveness and safety of prevention measures and vaccines can result in vaccine hesitancy and the unwillingness to comply with public health guidelines (Lewandowsky et al., 2022).

The impact of information disorders on public perception cannot be undermined. Exposure to misinformation and disinformation, as Pennycook and Rand (2019) argue, can influence the behaviour of an individual resulting in significant implications on public health crises such as the Covid-19 pandemic. Furthermore, the consequences of misinformation and disinformation extend beyond shaping public opinion to also undermining public trust in institutions such as the government and harm individuals. It is for this reason that Bode and Vraga (2018) argue that misinformation and disinformation have detrimental effects on public trust. It is argued that misinformation and disinformation perpetuate fear and panic, during health a health crisis (Depoux et al., 2020).

The dissemination of news through social media platforms contributes to the spread of misinformation raising concerns about its potential negative impact on reshaping societal perceptions (Madrid-Morales et al., 2021). It is important to recognise that health misinformation is not exclusive to Covid-19. These challenges go beyond causing confusion and also involve issues such as apathy and cynicism. As a result, society becomes fragmented into distinct 'truth publics', each residing within their separate realities and narratives within the online domain. It is worth acknowledging that individual responses to Covid-19 were

influenced by the information they received through various media channels. In some cases, people particularly in developing and underdeveloped countries such as Zimbabwe disregarded the guidelines provided by recognised national and international health organisations due to a lack of awareness among other various reasons (Mututwa and Mare, 2022). Covid-19 misinformation has resulted in the adoption of inappropriate precautionary measures by the public and has misled healthcare professionals to prescribe treatments that deviate from scientifically approved usage and intended targets of medications (Ying and Cheng, 2021).

In Zimbabwe, the relationship between social media, misinformation, and public perceptions during the Covid-19 pandemic has drawn considerable attention. Debates on the relationship have shown that although social media platforms like WhatsApp emerged as significant sources of information, they also facilitated the spread of misinformation. In their study investigating how misinformation on WhatsApp influenced public understanding, Bowles et al. (2020) argued that social media significantly shaped behaviour during the pandemic. Their findings revealed that WhatsApp served as both a crucial source of Covid-19 updates and a hub for false narratives about the virus and its treatment. WhatsApp is defined as a social media application which provides instant messaging abilities to people cheaply (Madamombe, 2017). It facilitates the instant sharing of mainly text, photos, videos and voice notes (Thota and Divatia, 2015) on smartphones (Chiridza et al., 2016). WhatsApp, unlike other social media platforms, is affordable and accessible (Seufert et al., 2016). According to (Chiridza et al., 2016: 46) WhatsApp "seems to be more accessible to many Zimbabweans because it is easy to use on the weak internet provided by mobile phone operators". This therefore made it easy for misinformation and disinformation to spread via WhatsApp.

The spread of misinformation and disinformation on WhatsApp, therefore, is argued to have undermined the efficacy of public health campaigns, as citizens were swayed by non-scientific narratives. The lack of trust in information communicated by the government worsened the spread of misinformation and disinformation (Bowles et al., 2020) subsequently negatively affecting vaccine uptake. According to an analysis by Bowles et al. (2020), conspiracy theories and fabricated claims about vaccine safety proliferated on platforms like WhatsApp, resonating with historical distrust in government initiatives. As such, the lack of trust in public institutions globally contributed to the spread of misinformation and disinformation (Agley and Xiao, 2021). In the case of Zimbabwe, misinformation and disinformation was also being uniquely influenced by local political dynamics (Brodie, 2020).

Other factors that complicated public reception of COVID-19-related information were political factors and a lack of digital media literacy. Politically, misinformation was often framed as an alternative to state narratives, reflecting deeper societal mistrust of the Zimbabwean government's handling of the pandemic (Chingono, 2021). The use of lockdowns and other measures, by the government, raised a lot of skepticism about its ability to handle the pandemic. This aligns with findings by Agley and Xiao (2021), who demonstrated that distrust in government institutions significantly affects compliance with public health campaigns. The intersection of political mistrust and digital misinformation thus created a volatile information ecosystem. It can be argued that the authoritarian nature of the Zimbabwean government, together with the use of pandemic related restrictions to suppress dissent, worsened skepticism towards official information about Covid-19. Research by scholars such as Bowles et al. (2020) noted that users struggled to critically evaluate the reliability of the information they consumed particularly on online platforms. This resulted in consistent suggestions by scholars such as Agley and Xiao (2021) for digital literacy initiatives to be expanded particularly in low to middle income countries so as to slow the spread of the infodemic. While targeted interventions such as WhatsApp based community campaigns demonstrated promise in improving public knowledge and reducing harmful behaviours by addressing key myths and misconceptions the interventions remain underfunded and insufficient given the scale of the problem.

Theoretical Premises

This study uses Rothkopf's (2003) concept of 'infodemics' and Stuart Hall's Reception Theory to make sense of the impact that misinformation and disinformation have on public opinion and decision making. The term 'infodemic', according to the World Health Organisation (2021) refers to the overabundance of misleading information and false content, during an epidemic. It spreads rapidly through social networks, resembling a virus (Crocchi, 2020). The concept of infodemics encompasses various forms of misinformation, such as rumours, conspiracy theories, clickbait headlines, and manipulated content. Understanding the nature of the infodemic is crucial for examining its implications for public opinion and decision-making, particularly in the context of COVID-19 prevention strategies. The study utilised the concept of 'infodemics' to analyse misleading COVID-19 information and how it influenced people's perceptions of the pandemic.

The study also specifically incorporates Stuart Hall's Reception Theory. According to this model which argues that audiences actively interpret specific features of media texts to derive meaning (Hirzalla and van Zoonen, 2017). Hall (1993) proposes three different reading positions that audiences can adopt when decoding meanings namely preferred, negotiated, and oppositional readings (Hall, 1993; Havemann, 1998). According to Hall (1993), a preferred reading is when the audience aligns with the dominant point of view, while a negotiated reading is when audience understands and accepts the dominant perspective. An oppositional or resistive reading, as argued by Hall (1993), occurs when the reader challenges the dominant position offered by a specific media text. This study uses the reception theory to analyse how audiences on social media received and interpreted misinformation and disinformation that they engaged with on WhatsApp.

Methodology

To investigate the impact of Covid-19 misinformation and disinformation on decisions to not comply with Covid-19 prevention measures, this study was underpinned by the interpretivist paradigm and employed a qualitative approach. To identify Covid-19 misinformation and disinformation, was gathered from content of Covid-19 misleading information documented by the Centre for Innovation and Technology (CITE) FactCheckZw page. The researchers purposefully sampled out information that had been labelled as either false, misleading, incorrect or unproven. This information helped in providing an insight on the nature of Covid-19 misinformation that circulated on WhatsApp.

To understand how the identified misinformation and disinformation influenced decisions, in-depth interviews were conducted. Interpretivism appreciates that understanding of phenomena differs from one person to the other (Lincoln and Guba, 1994). In this study, researchers acknowledged that misinformation might have influenced people differently in terms of not adopting Covid-19 prevention strategies. As such, data was also collected through interviews with 10 purposively selected individual who were misled by infodemics into not adopting the WHO preventative measures for Covid-19. Prior to their selection for interviews, they were asked if they never complied with the Covid-19 prevention methods such as vaccination, wearing of masks, social distancing, since the purpose of this study is to understand how misinformation might have influenced their decision not to. As such, the authors intended to

find out if misinformation could have, in any way, influenced their decision not to adhere to the Covid-19 prevention methods and understand how they were influenced. Therefore, the primary aim of this methodology is to address the following research questions: what types of false information about Covid-19 circulated on WhatsApp, and how this information influenced individuals not to adopt Covid-19 prevention measures or strategies? Data generated from the content analysis and interviews was analysed using thematic analysis. Authors derived the themes from the research questions and coded the data according to the themes.

COVID-19 Misinformation and Disinformation

Categories	CLAIM	VERDICT
Safety of Covid-19 Prevention methods	Prolonged use of face masks can cause carbon dioxide intoxication, dizziness, or other health challenges.	Incorrect
	The Sinovac COVID-19 vaccine can cause poor blood circulation to one's feet and hands. A Bulawayo woman claimed that she developed gangrene on her feet and hands after receiving her COVID-19 vaccine on 27 July 2021.	Incorrect
	A Twitter user claimed that his mother was forced to get the COVID-19 vaccine by her doctor and eight weeks later developed a cancerous tumour on her cheek.	Misleading
	COVID-19 vaccines alter women's menstrual periods.	Unproven
	COVID-19 vaccines were developed too fast therefore are not safe	Incorrect
	COVID-19 vaccines can stop fertility in females and can be used as a contraceptive. "We are being vaccinated at work but there are rumours that vaccines stop fertility in females and can act as a contraceptive," read the claim which was posted on social media.	Incorrect
	Why are we accepting a vaccine that the Chinese are not using themselves	Misleading

	Prolonged use of a face mask causes hypoxia and "breathing over and over exhaled air turns into carbon dioxide, which is why we feel dizzy".	Incorrect
	Wearing a mask for a long period may reduce the amount of oxygen in the brain which may lead to death.	False
	A COVID-19 vaccine can make a penis grow by three inches.	Incorrect
	Does the sanitisation of hands and spraying of surfaces guarantee safety from COVID-19?	Incorrect
	Does the COVID-19 vaccine cause erectile dysfunction and low libido?	Unproven
Covid-19 Cures, Remedies	There is no need to vaccinate against COVID-19 when it is hot as the heat kills the virus.	Incorrect
	If sick with COVID-19 you must go vaccinate immediately	Incorrect
	Drinking 35 percent of Hydrogen Peroxide can kill Covid-19.	Incorrect
	Self-medicating with Azithromycin drugs will prevent COVID-19	Incorrect
	Hot drinks can prevent COVID-19.	Incorrect
	Vaccination against COVID-19 guarantees one lifelong immunity	Incorrect
	A report by Riante Padayachee entitled 'Study finds COVID-19 increases chances of diabetes' claimed that COVID-19 causes diabetes in up to 60 percent of those who recover from it.	Misleading
	Steaming can kill Covid-19	Incorrect
	Face shields can protect against Covid-19.	Incorrect
	A message circulating on WhatsApp claimed that a person vaccinated against Yellow Fever is immune from Coronavirus (COVID-19).	False

	Drinking lemon and warm water does not prevent COVID-19	False
	You can tell if someone has Covid-19.	Incorrect
Political and Economic motives	Victoria Falls has achieved Herd Immunity.	Misleading

Table 1: Types of Misinformation and Disinformation that spread on social media platforms (Source: Centre for Information and Technology, 2024)

The table above presents some of the documented misinformation and disinformation about Covid-19 that spread on social media platforms. What can be deduced from the document is that the misinformation and disinformation that circulated on WhatsApp can be categorised on WhatsApp into three categories namely the safety of Covid-19 Prevention methods, Covid-19 cures and remedies, and political and economic motives. Generally, misinformation and disinformation predominantly revolved around the vaccine, masks, and alleged Covid-19 cures and treatments. However, it should be noted that the list of misinformation and disinformation in Table 1 is not exhaustive. There are some misinformation and disinformation that circulated on WhatsApp but were not documented. This includes myths and conspiracy theories around the origins of Covid-19 and the purpose of its prevention measures and strategies.

Some of the myths that circulated on social media include that there is no Covid-19, vaccines are dangerous, Covid-19 does not pose a serious threat to Africans, Covid-19 does not affect young people, Covid-19 is being used by powerful countries to shrink the African population, and that traditional medicine, instead of vaccines, can be used to cure Covid-19 (Africa Centre for Strategic Studies, 2021). These myths are similar to some of the misinformation presented in Table 1. In addition to the types of misinformation and disinformation identified above, interviewees in this study also identified conspiracy theories as another form of misinformation that circulated on social media, thus confirming findings by Gemenis (2021). According to Keeley (1999) cited in Uscinski et al. (2016: 58), a conspiracy theory refers to "a proposed explanation of events that cites a small group of people (the conspirators) acting in secret for their benefit against the common good" as the main causal factor. Liang et al. (2023) observed that during the early stages of the virus, unfounded claims about the virus's origin emerged. Conspiracy theories regarding Covid-19 noted that the virus was "created in laboratories to harm a specific country or group of people" (Gemenis, 2021: 230) China and Western countries

being the alleged conspirator and Africa and black people being the victims. Concerning the virus's origins, participants in this study disclosed that conspiracy theories circulating on social media suggested that China was the conspirator and the primary source of Covid-19. One participant said:

> *Ihunga hunga esalizwayo lalisithi iCovid-19 ngumkhuhlane owadalwa ngamaChina* (One rumour we heard is that the Chinese created Covid-19)

As noted before by Hao et al., (2022), the coronavirus was discovered in China in 2019. However, other scholars argue that while China announced the outbreak first, it is unlikely that it was the "true birthplace" (Hao et al., 2022: 5). Participants indicated that the above conspiracy theory resulted in youngest people thinking that the Covid-19 virus only affects Chinese men and/ or white men. In these conspiracy theories, the group of people targeted for harm were the African race or black people. Another interviewee in this study concurred noting that conspiracy theories that spread on WhatsApp alleged that: "*iCovid-19 iyenzwe ngamaChina to punish black people* (Covid-19 was created by the Chinese to punish black people)". China, as the conspirator, was being accused of creating the coronavirus so that they benefit by killing black people. The conspiracy theories resulted in more misleading information circulating on social media alleging that the Chinese themselves are not using their own vaccines (See Table 1, Category 1). One participant noted that: "*Abantu abamnyama abafanga ngobunengi ngoba igazi labo liImmune* (Black people did not die in huge numbers because their blood was immune)". As such, people would then believe that they are immune from Covid-19.

Another conspiracy theory about Covid-19 that participants identified is that it was a strategy for governments to make money. Covid-19 statistics circulated by the government, true as they may have been, resulted in the circulation of rumours on social media alleging that the virus was created for purposes of making money. One participant said:

> *Kwathiwa iCovid-19 yindlela yokungenisa imali elizweni ngoba umuntu obanjwe iCovid-19 kulemali ayiphiwayo* (It was said Covid-19 was a way of making money by the government because a person who tests positive for Covid-19 gets money)

As noted by Achimescu et al. (2021: 300), such "conspiracy beliefs can have behavioural implications". Associating the origins of the virus with China and the Chinese had serious implications on peoples' adherence to Covid-19 prevention strategies proposed by the World

Health Organisation (WHO). Due to the rumours describing the virus as only affecting the Chinese, many people from rural areas where not really worried about social distancing and wearing masks. One participant said: "*Emakhaya sasingakulandeli kangako okuyinto kwakhona* (In rural areas we did not follow those things that much)". Regarding rumours alleging Covid-19 to be a money-making strategy for the government, one participant noted that rumours alleged that "*Ukwengeza inani labantu abale Covid-19 kwakuyindlela kahulumende yokuthi imali ingene kweleZimbabwe* (Rising Covid-19 cases was a way of the government getting money). People from rural areas therefore did not even trust the Covid-19 statistics they also got from the government. As argued by Bode and Vraga (2018) false information has detrimental effects on public trust of institutions. As such, Kugarakuripi and Ndoma (2022: 3) argues that "this might have affected citizens' reception of the vaccine". This shows that the racialisation of Covid-19 made people reluctant to follow WHO Covid-19 preventative measures.

Besides conspiracy theories, some misinformation focused on the general health safety of the Covid-19 preventative measures as well as alleged cures and treatments for the virus. For example, some of the misinformation as indicated in the table alleged that prolonged use of face masks can cause carbon dioxide intoxication, dizziness, or other health challenges or that Covid-19 vaccine causes cancer (See Table 1). One interviewee confirmed this saying that one of the misleading information she encountered said, "wearing of masks can cause oxygen deficiency". Misleading information about the efficacy of the Covid-19 prevention methods fuelled the spread of more misleading information about alleged cures of Covid-19 (See Table 1). This confirms argument by Chavda et al. (2022: 62892) who noted that "during the Covid times, many such myths, medicines and home remedies surfaced that claimed to cure Covid-19 symptoms". This misleading information was not based on evidence and as such, people relied heavily on their own beliefs "which is detrimental to both their own health and public's health" (Reihani et al., 2021: 221). As will be demonstrated below, these misinformation and disinformation influenced some sections of the society to not adopt Covid-19 prevention strategies.

'We thought we would die': Influence of Covid-19 Misinformation on Decision Making

Social media platforms such as WhatsApp were "an effective vehicle for misinformation and disinformation about Covid-19" (Baum et al., 2020 cited in Kugarakuripi and Ndoma, 2022: 6). Because social media became a major source of Covid-19 related information, people easily believed the information that they were getting (Chavda et al., 2022). This study discovered that misinformation and disinformation identified in Table 1 was amplified by pre-existing fears which gave it mileage to easily influence people's opinions and subsequent decision making on adopting Covid-19 preventative strategies. Loomba et al. (2021: 337) confirms this noting that misinformation and disinformation built "on pre-existing fears, seeding doubt and cynicism over new vaccines". For instance, as this study discovered, factors such as fear of death, religious beliefs, lack of digital media literacy among others augmented misinformation and disinformation making it believable in communities. As indicated in the previous section, one mis-information that circulated on WhatsApp is that the Covid-19 virus and the vaccines are meant to depopulate the African Race. These conspiracy theories alleging that the purpose of the virus and the vaccines is to kill black people resulted in increased hesitancy to adopt Covid-19 prevention strategies in fear of losing lives. One participant corroborated this noting that misinformation that spread alleged that:

> *Ungahlaba i Covid-19 vaccine, uyafa after 2 years njalo uyaba paralysed ubeyisilima* (When you get vaccinated against Covid-19, you die after 2 years or become paralysed and be disabled).

Another participant averred: "*Ijekiseni yeVaccine sezwa kuthiwa yenza ukuthi umuntu afe ngemva kweminyaka emibili* (We heard that the vaccine injection kills people in 2 years)". This type of misinformation, according to Salmon et al. (2015), resulted in increased suspicions about vaccines. A participant who did not vaccinate attributed her hesitancy to vaccinate to such misinformation saying "*I did not vaccinate because I thought I would die*". Death is one social reality that human beings face on a day to day basis. Fear of death compels individuals to adopt certain practices. Findings from this study noted that misinformation utilised the pathos mode of persuasion (appeal to people's emotions) by appealing to their inherent fear of death making them easily believe that they will die if they vaccinate. This therefore compromised the adoption of Covid-19 prevention strategies, particularly vaccination. Furthermore, everyday observations that individuals observed in their communities made them to easily believe misinformation that they encountered on WhatsApp. One participant noted that according to some misinformation and disinformation they engaged with on WhatsApp,

people, even those that had vaccinated, were still dying or developing serious health complications. As such, because of such information, she said, "I therefore did not see the importance of vaccinating". These findings explain why, in the case of Zimbabwe, about 51% of the Zimbabwean population were reluctant to take the vaccine (Kugarakuripi and Ndoma, 2022). Therefore, conspiracy theories around Covid-19 vaccines being there to depopulate the African race influenced some individuals into not vaccinating.

The aspect of death was also associated with political reasons with misinformation alleging that the virus itself and the vaccines were being used to kill the African populations. According to the African Centre for Disease Control cited by the African Centre for Strategic Studies (2021), "half of Africans believe that COVID was planned by foreign powers". One participant in this study confirmed this when she said that she did not vaccinate because she heard rumours on WhatsApp that, "white people wanted to kill African people". This confirms argument by Mphahlele (2021) that conspiracy theories that made people, particularly Africans, to be hesitant to adopt the Covid-19 vaccines are that, "the vaccine will be used to kill Africans as part of an age-old population control plan". Perceived differences between the White race and Black race made it easy for misinformation to persuade people into not vaccinating. The participant noted that because of such politically motivated misinformation, she was "afraid to vaccinate".

Religious beliefs, for example Christianity, influenced people to take action on some of the misinformation that they encountered on WhatsApp. Misinformation on Covid-19 vaccine made individuals, with strong religious beliefs, adopt other preventative measures such as wearing Masks while hesitating to vaccinate. One participant in the focus group discussion said:

> *Ihunga hunga engalizwayo yikuthi iCovid-19 vaccine luphawo lwesilo.* (One rumour I heard was that the Covid-19 vaccine was the Devils mark.)

According to Razal et al. (2021: 4) one of the reasons for Covid-19 vaccine low uptake was "concerns about vaccine' incompatibility with religious beliefs". For instance, in 2020, South African Chief Justice Mogoeng Mogoeng gave a prayer where he said "I lock out every demon of Covid-19, I lock out any vaccine that is not of You [God]. If there be any vaccine that is of the devil, meant to infuse 666 in the lives of people" (Nyathi, 2020). This prayer suggested a perceived link between Covid-19 and the mark of the devil (666). As such, many Christians

were reluctant to get vaccinated. Misinformation tapped into individuals' religious beliefs so as to easily persuade them into not vaccinating. As argued by Olagoke et al. (2020: 67), "higher levels of engagement in religious practices may unintentionally spread misinformation, yielding unsafe practices". The same participant in the focus group discussion said, "*Izinqumo engazithathayo yikugqoka iMask ngoba ngingafuni ukujova* (The decision I therefore took was to wear a mask*)*". Therefore, this shows that misinformation that circulated on WhatsApp had religious connotations that criticised the efficacy of some of the Covid-19 prevention strategies, hence influencing individuals with strong religious beliefs into not preventing at all.

Conclusion

The findings of this study highlight the persistent threat that misinformation and disinformation have particularly among vulnerable communities. This research specifically examined the influence of conspiracy theories surrounding the origins and purpose of COVID-19, as well as theories related to the COVID-19 vaccine, on individuals' adherence to preventive strategies. Future research should incorporate a broader range of qualitative inquiries to gain a deeper understanding of how information disorders affect public opinions and decision-making processes. In conclusion, the study highlights that misinformation and disinformation significantly undermine the efforts of authorities in combating pandemics. This study therefore suggests that a multi-layered approach that includes education, awareness campaigns, and robust information verification among other measures to counteract the negative effects of 'infodemics'. By fostering a more informed citizenry, we can enhance resilience against misinformation and improve public health outcomes.

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