Fears and Knowledge: Views on Susceptibility of COVID-19 Infection for People Living with HIV in Lusaka, Zambia

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ABSTRACT: There is a growing fear of contracting coronavirus disease 2019 among people living with HIV in Zambia. This study was carried out to investigate the fears and knowledge that people living with HIV have on coronavirus disease 2019 in Lusaka Zambia. The views were collected from a WhatsApp group of people living with HIV. Thirty (30) participants, majority (80%) of whom were female (24) and 43.3% were aged 25 to 34 years, consented and filled in a nine-question electronic tool. About 17 (58.6%) participants said they were getting coronavirus disease 2019 information from social media as the main source with 8 (27.6%) relying on government announcements and 4 (14%) banking on television news. About 21 (78%) said they believed they were at a higher risk because of low immunity due to the presence of the HIV, having underlying illnesses, fear of being stigmatized and worries around how they would pick their medication should there be a lockdown. All participants demonstrated a high level of knowledge on how they can protect themselves against coronavirus disease 2019. The study concluded that while Government and all stakeholders need to ensure that every person receiving anti-retroviral therapy for HIV is adherent to treatment to avoid compromising their immunity, ways and strategies need to beformulated to ensure people living with HIV are provided with

knowledge on the transmission of coronavirus disease 2019 and consequently unnecessary fear and panic among them may beeliminated. Stakeholders should leverage the popularity of social media and utilize it for health promotion.

Keywords: COVID-19; HIV; AIDS; Fears; Knowledge

1. INTRODUCTION

The new coronavirus disease 2019 (COVID-19) caused by severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) continue to ravage the world(Wan, 2020). The first reports of the novel pneumonia emerged from Wuhan, Hubei province in China (Kristian G 2020). This is the third introduction of a very pathogenic and large-scale epidemic coronavirus into the human population in this century since the severe acute respiratory syndrome coronavirus (SARS-CoV) in 2002 and Middle East respiratory syndrome coronavirus (MERS-CoV) in 2012 (Guo, 2020). The outbreak was declared a Public Health Emergency of International Concern on 30 January 2919 and later on 11 March 2020 declared a pandemic by the World Health Organization (WHO, 2020). As of 30 March 2020, as per Situational Report Number 70 of the WHO, the coronavirus COVID-19 was already affecting 200 countries and territories around the world and twointernational conveyances, infecting a global total of 693 224 and 33 106 deaths, though other sources such as Worldometerwere, as of 31 March 2020, already reporting 789,787 and 38,101 global cases and deaths respectively.

Meanwhile, it only tooka few weeks after China'sWorld's first casefor Africa to record its first case on 14of February 2020 in Egypt (WHO, 2020). Since then, according to Worldometer, (https://www.worldometers.info/coronavirus/, 31 March 2020, 10am) Africa had recorded close to 5,000 cases as of 31 March, 2020. Zambia, a country in the Centre of the Southern African Region only had its first two cases reported on the 18th of March 2020 (WHO, 2020).Conditions that tend to compromise immunity, and hence could lead to fatalities in COVID-19 include chronic lung disease or moderate to severe asthma, serious heart conditions, cancer, severe obesity, diabetes, renal failure, liver disease, pregnancy and poorly controlled HIV/AIDS (CDC, 2020a). In other instances, cancer treatment, smoking, bone marrow or organ transplantation, and prolonged use of corticosteroids and other immune weakening medications can compromise one's immunity (CDC, 2020b).

Table 1: COVID-19 Fatality Rate by AGE

AGE	DEATH RATEconfirmed cases	DEATH RATE all cases
80+ years	21.9%	14.8%
70-79 years		8.0%
60-69 years		3.6%
50-59 years		1.3%
40-49 years		0.4%
30-39 years		0.2%
20-29 years		0.2%
10-19 years		0.2%
0-9 years		no fatalities

(Source: Worldometer Coronavirus Update, 31 March 2020)

A significant number of those aged above 65 years and those with other underlying high-risk pre-existing conditions hasbeen most affected and globally now accepted that such should be given extra preventative care (CDC, 2020a).

Table 2: COVID-19 Fatality Rate by COMORBIDITY

PRE-EXISTING CONDITION	DEATH RATE confirmed cases	DEATH RATE all cases
Cardiovascular disease	13.2%	10.5%
Diabetes	9.2%	7.3%
Chronic respiratory disease	8.0%	6.3%

Hypertension	8.4%	6.0%
Cancer	7.6%	5.6%
no pre-existing conditions		0.9%

(Source: Worldometer Coronavirus Update, 31 March 2020)

An analysis done by Worldometer shows that as of 31 March 2020, 46.4% of those who died of the COVID-19 had one of the pre-existing conditions as indicated in table 2.Most African countries may not worry so much about having too many aged citizens. They have an expansive populationpyramid**.** Expansive Pyramids typically have broad bases and with successive and steady decline among the population of higher age groups. According to Saroha (2018)this pyramid (as shown in figure 1) is characterized by high fertility but low life expectancy at birth, withhigh mortality and higher population growth rates. Due to low life expectancy, there arefew old age persons. Hence Africa has a very young population, as is typical of some Asian and European countries.
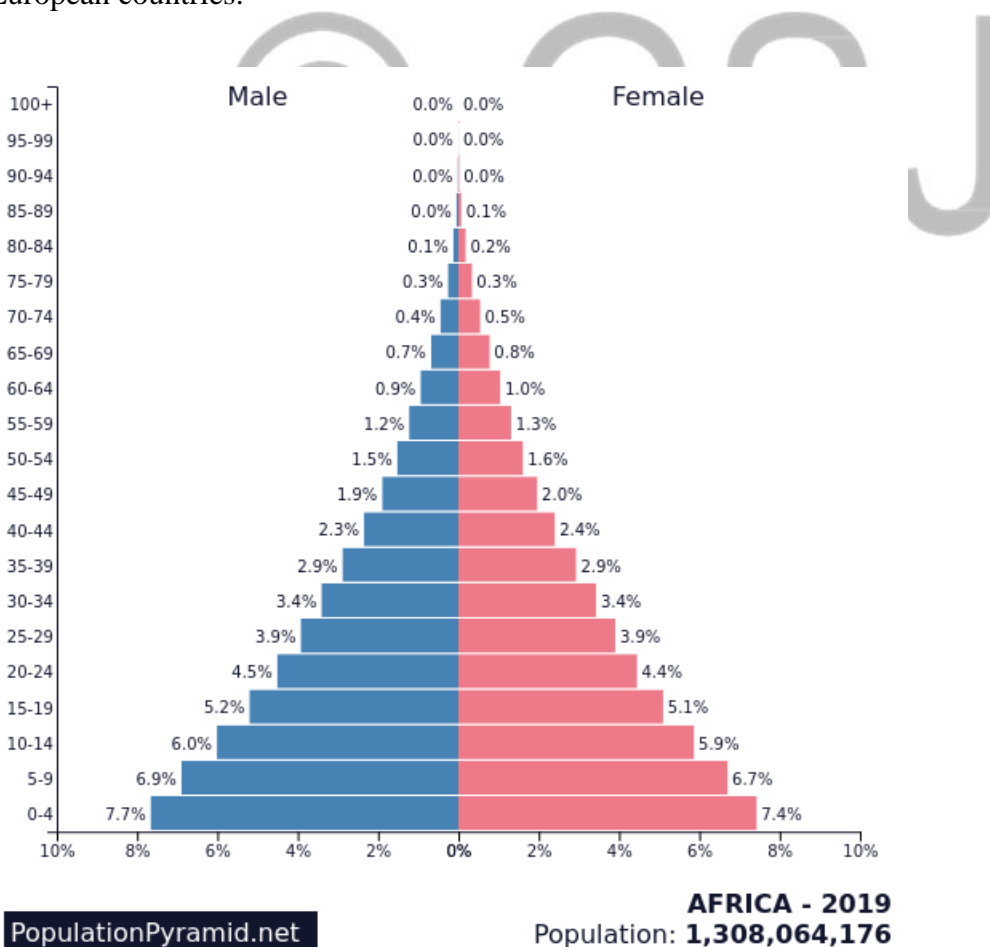

AFRICA - 2019
Population: **1,308,064,176**

PopulationPyramid.net

Figure 1: Africa Population Pyramid.

(Source: https://www.populationpyramid.net/africa/2019/)

Nevertheless, Africa worries more about HIV and other emerging non-communicable diseases. According to the WHO Africa Region, as of 31st December, 2018, about 37.9 million had HIV while new annual infections were 1.7 million globally, two thirds of which were in Africa. Africanshavebeen struggling with HIV for a long time now, which attacks the immunity of a person. With the coming of the novel coronavirus, questions are emerging how Africa will fare given that there are close to 26 million people with HIV on the continent. The annual incidence of HIV among adults aged 15-59 years in Zambia is 0.61% corresponding to approximately 43,000 new cases of HIV infection annually among adults aged 15-59 years, with a prevalence of 12.0% among those aged 15-59 years (MOH, 2019).According to the WHO Africa Report, 64% (16.3 millions) of people in the African Region living with HIV were accessing treatment in 2018 while 52% of those on treatment had a suppressed viral load which gives them strong defense against opportunistic infections. However, this means that 48% of Africans living with HIV do not have their HIV suppressed yet.

In Zambia, UNAIDS reported that in 2018, 78% of all people living with HIV were on treatment and 58% of all people living with HIV had their virus suppressed (leaving an awful 42% with compromised immunity due to lack of viral suppression). While ensuring everyone has a suppressed viral load is vital, ARVs will not stop someone from becoming obese, developing diabetes or having a respiratory abnormality. In fact,HIVpositive individuals were found to be at increased risk for chronic kidney related diseases as well as kidney injury which are as a result oftaking ARVs for a long time or opportunistic infections (Swanepoel et al 2017).

Therefore, the presence of ARVs in the body may not necessarily give someoneassured immunity against other infections. With the coming of the novel coronavirus, there may be a reason to worry, given the millions living with HIV around us. While it is too early to determine the safety of people on ARVs, it is particularly important to start learning what concerns, fears and knowledge this group of people has on the COVID-19.

Hence the objective of this study was to identify and document fears and knowledge of people living with HIV on the Coronavirus disease 2019 in Lusaka Zambia. Specifically, we aimed at collecting their sources of information, their fears and their knowledge on the prevention of the new coronavirus.

The significance of this study based on the logic that while our population pyramid is an expansive one, we need to worry about the fact that not everyone on ARVs has attained viral suppression status. The COVID-19 is new. Knowing the fears that PLWH may have regarding the new pandemic will give us insight on how we should manage HIV. There is very little literature on it. This study will not only contribute to the growing knowledge on the novel virus but will also serve as a basis for future research. Stress and fear responses are deemed natural and likely adaptive or protective in response to infectious diseases (McEwen, 2007). In many cases the triggers of fear are the information being shared especially online. Some of the information has a questionable source and this may give rise to poor knowledge in information on their susceptibility to COVID-19. This paper therefore provides a conceptual overview of COVID-19 fears and establishes knowledge levels of PLWHIV on their susceptibility to the disease. The sources of such information will also be key in designing health communication programs. The study sought out to determine andidentify fears and knowledge that People Living with HIV have on the COVID-19 and specific terms to determine where People Living with HIV are getting COVID-19 related information, to identify the fears that People Living with HIV have regarding COVID-19and determine the knowledge that People Living with HIV have on the COVID-19

2. METHODS

2.1 Design and Sampling

An observational, cross-sectional research was carried out among a group of PLWHIV. These people were reached through a WhatsApp group whose membership is only for those living with HIV. A minimum of 30 volunteers from the group were enrolled in a study and responded to the questionnaire. A convenient and purposive sample was utilized. Participants were recruited in two phases. Firstly, we used the health care giver seeing or attending to these patients or their WhatsApp group administrator. The second phase of recruitment involved introducing the

researcher to the WhatsApp group and introduce and explain the purpose of the study to the members or administrator of the group.

2.2   Data Collection and Data Analysis

A link to an online Survey Monkey questionnaire was shared to the group. Data was analyzed using a STATA version 14. Owing to s smaller number of participants and in order to maintain the idea of using parametric tests for better estimates, data was log transformed if right skewed or square transformed if left skewed. Median and Range were reported for non-normally distributed numerical variables such as age and if normally distributed mean and standard deviation were reported. In order not to inflate a type 2 error, age was categorized or any other numerical variables. Percent and frequency for our categorical data were utilized.

2.3   Ethics

Ethical approval was sort from a National Review Board. There were no risks or concerns that were to come as a result of participating in the study. Consent to participate was deduced once a participant filled in a form. Permission was sort from the administrators of the group and even though this was an electronic survey, we collected no personal identifiers. Issues of privacy and confidentiality did not apply because the questionnaire was online and did not ask for personal details. The data collection methods of the study were clearly stated on the informed consent and was sent to WhatsApp group and made available to each participant, who could ask for more explanations when necessary. Acceptance to participate was assumed when participants filled in the questionnaire. Participants who could not understand the terms on the consent form were free to consult the interviewer via a voice note and shared to WhatsApp group. No identifiers were collected and they had freedom to withdraw from the study at any time. Refusal to participate by would by have any influence on the standard care that the patients were currently receiving.

3. RESULTS AND DISCUSION

The majority (80%)of those who provided their views were female (24) and 43.3% were aged 25 to 34 years. About 8 (16.7%) of them were aged between 35 and 54. By the time of the interview, all of them had already heard of the SARS-Cov-2. Asked where they heard of it for

the first time, 23 (77%) heard from social media while a paltry 5 (17%) heard from television. Only one person heard from a friend and another from government announcements.

In table 3, participants were asked where they are currently getting updates on the new coronavirus, 17 (58.6%) pointed to social media as the main source with only 8(27.6%) relying on government announcements and 4 (14%) banking on television news. Out of the 29 who answered this question, 21 (78%) said they believed they were at a higher risk because of low immunity due to the presence of the HIV, having underlying illnesses, fear of being stigmatized and worries around how they would pick their medication should there be a lockdown. All participants demonstrated a great deal of knowledge on how they can protect themselvesagainst coronavirus. All of them highlighted the need to stay home during the COVID-19 pandemic and only move when necessary, during which social distancing should be practiced. The need to wash hands with clean running water with soap or sanitizing them with an alcohol-based hand sanitizer while avoiding shaking hands, touching one's face and avoiding contact with people who recently travelled was also highlighted. Covering one's mouth with a tissue when coughingor coughing in the elbow was also recommended. Only two recommended wearing masks and gloves while in public.

Table 3: Current sources of information onthe new coronavirus among PLWHIV

What about now, where are you getting updates on the new coronavirus?	Frequency	Percent
Government announcement	8	27.59%
Social media	17	58.62%
TV	4	13.79%
Total	29	100.00%

3.1   Source of Information

All the people who were interviewed had already heard of Coronavirus by the time of the interview and the majority said they heard about it for the first time from special media, the same platform currently providing information on COVID-19 to the majority of them. This presents an opportunity for everyone involved in health communication and awareness drive. In fact,

according to Evariant (2019), platforms like Twitter and Facebook, can be used by physicians and health systems to share relevant health information, receive feedback, and promote their brand. In Zambia, social media has experienced growth over the years. Kemp (2020) reported that there were 4.43 million internet users in Zambia as of January 2020, representing a 16% growth from 2019. This represents a 24% internet penetration in Zambia. There were 2.30 million social media users in Zambia in January 2020, which is a 19% increase from April 2019 (Kemp, 2020). And the Zambia Information Communication and Technology Agency, ZICTA (2019), in their 2018 survey on access and usage of information and communication technologies by households and individuals, report that 78.4% of all the users of the internet had at least one social media account, with a higher proportion (80%) living in urban areas. ZICTA (2019) further report that Facebook was the most prominent social media platform used by internet users accounting for 91.4% of all the internet users that were subscribed to a social media platform. This was followed by WhatsApp constituting of 74.5%. Hence with the current study revealing that the most common source of coronavirus information was social media, it is possible that health communication using Facebook and WhatsApp in urban areas may produce maximum results.Ownership of mobile phones has been on the increase in Zambia, as more and more prefer smartphones. Kemp (2020) reported that by January 2020, there were 16 million mobile connections in Zambia which is a growth by 861,000 from January 2019. In the USA, according to a report by Evariant (2019), 80% of internet users have searched for health information online, and 60% of social media users trust posts made by health care workers such as doctors. This is a call to those doing COVID-19 related health promotion that they put priority over social media, especially Facebook and WhatsApp for the urban population but still use local television stations for the same purpose, as this study has revealed that the second most common source of information after social media is television, which should work better for those in rural areas, as ZICTA advise only 20% of those with a social media lived in rural areas. Social media can be used for interaction and also for revitalizing word-of-mouth referrals, and improve communication.
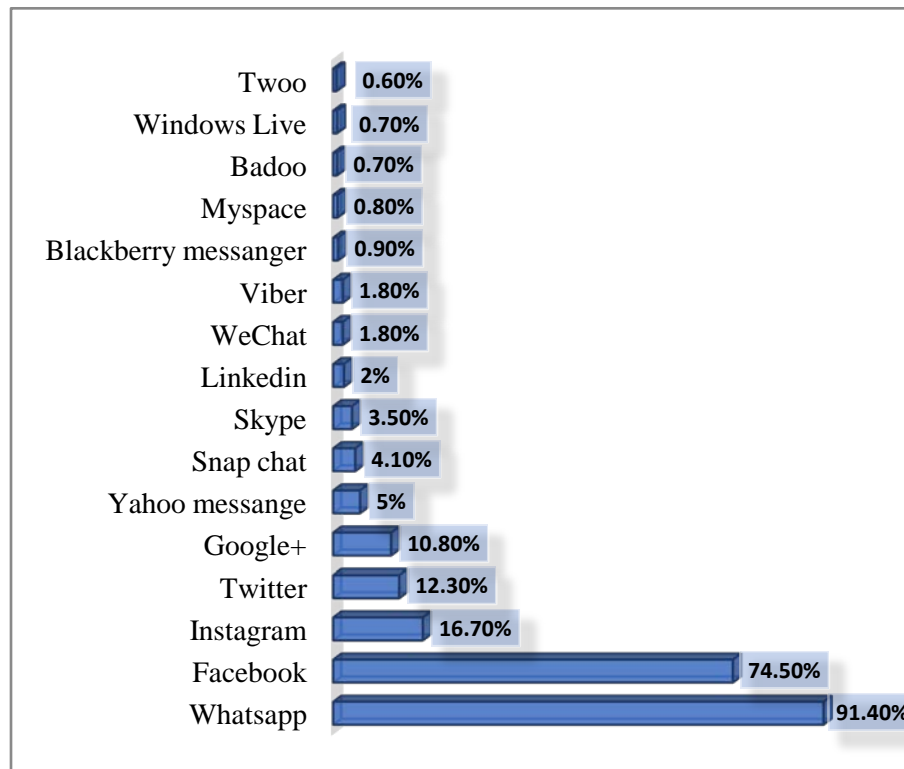
Figure 2: Types of social media platforms used by individuals with social media accounts in Zambia, 2018

(Source: Zambia Information Communication and Technology Agency,*2019)*

3.2   Fears and Concerns

Out of the 27 who answered this question, 21 (77.8%) said they believed they were at a higher risk because of low immunity due to the presence of the HIV, having underlying illnesses, fear of being stigmatized and worries around how they would pick their medication should there be a lockdown

3.2.1   Low Immunity and Underlying Conditions

Of those who answered the question on fears and concerns, 78% (21) believed they were at risk because their HIV status gives them compromised immunity. The 2018 UNAIDS report indicated that 78% of all people living with HIV in Zambia were on treatment and 58% of all people living with HIV had their virus suppressed (leaving an awful 42% with compromised immunity due to lack of viral suppression). With COVID-19 already with us, this is a good

reason to be concerned. The human immunodeficiency virus (HIV) spreads mainly through the exchange of body fluids (sexual encounters, sharing needles, blood transfusions) (Batki& Selwyn, 2008). When HIV enters the body, it targets T helper cells (CD4 cells), thereby infecting and killing them. The CD4 cells play an important role in regulating the immune responses to foreign microorganisms that enter the body(Luckheeram, 2012). The destruction of the CD4 cells leads to rapid viral replication which in turn leads to a progressive loss of one's immune system over time. Once the immune system is compromised, a person becomes vulnerable to opportunistic infections (OIs) that are rarely seen in healthy humans. Most patients who die from AIDS succumb to one or more OIs(Sandhu & Samra, 2013).

A combination of anti-retroviral drugs, if well managed, can help control viral replication, restore immune function and maintain health. If adherence to the regimen is not perfect, HIV can quickly become resistant to the medication. And once an initial combination fails, it is less likely a second, different combination will be effective. People living with HIV have reason to be concerned about COVID-19 as it affects people with underlying health conditions worse (Downey, 2020). Above all, there is evidence that shows that HIV positive individuals do have an increased risk for kidney disease, including HIV-associated nephropathy, noncollapsing focal segmental glomerulosclerosis, immune-complex kidney disease, and comorbid kidney disease, as well as kidney injury resulting from prolonged exposure to antiretroviral therapy or opportunistic infections (Swanepoel et al 2017). Another aspect is that the thin and wasted HIV infected individuals typical of the late 20th century are no longer a common spectacle. Now we have overweight and obesity in HIV to worry about. A study by Obry-Roguet, (2018) found the prevalence of diabetes and cardiovascular comorbidities to be 35.8% (out of 862) of whom 52.7% were overweight or obese. They may currently not have low immunity because of treatment, but they are certainly at risk of other underlying conditions that can predispose them to COVID-19. Ensuring that this special group of people receives maximum care while we fight the Coronavirus is of paramount importance. Attention should not be allowed to shift and create more problems once the pandemic is over.

However, knowing that some of these fears may be because of relying on wrong information, it is very important to rely on the WHO advice as in the figure below
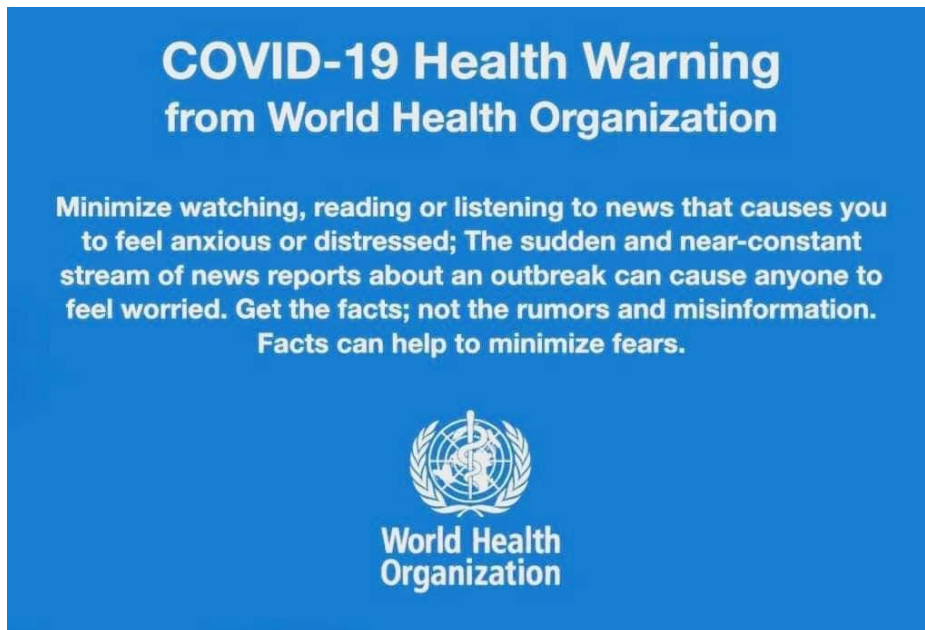
Figure 3: Health Warning

3.2.2   *Stigma and Discrimination*

Another concern registered by almost everyone was that they were afraid of the stigma associated with COVID-19 and the related discrimination. They have experienced stigma and discrimination before and this new pandemic may expose them to the same prejudices or negative attitudes. Stigma is a destructive and powerful social process that is defined by separation, labeling, and stereotyping, which results in loss of status, and leads to discrimination (Link & Phelan 2001).Discrimination, on the other hand, is defined by the UNAIDS (2000) as the unfair and unjust action towards an individual or group because of real or perceived status or characteristics, a medical status (e.g., HIV), sexual identity, race, socioeconomic status, and gender.In the context of health, the stigma you get when you are living with a specific disease or health condition is called health condition-related stigma. Such stigmanegatively affects people seeking health services at a time when they are at their most vulnerable (Nybladeet al 2009, Ross& Goldner 2009, Hamann et al, 2014).Consequently, this may drive people to avoid seeking care. If people will avoid seeking care, adoption of healthy behaviors will be hampered and as a result, transmission prevention will be negatively affected (IFRC, UNICEF & WHO, 2020). This is why stigma has been cited as a barrier to care, prevention and treatment Govindasamy et al 2014, Katz et al, 2013, Musheke et al, 2013, Chidyaonga-Maseko et al 2015).

Since COVID-19 broke out, certain populations have reported being stigmatized and this has given rise to harmful stereotypes. This has potential to contribute to a rise in severe health problems, ongoing transmission, and difficulties controlling this infectious disease. It is therefore expected that public health emergencies like COVID-19 breakouts, will be stressful times for certain groups of people, including people living with HIV and those being released from COVID-19 quarantine.

3.2.3 *How they will be picking their ARVs in lockdown*

How they would be picking their HIV medication should a lockdown be instituted is another concern among people living with HIV. By their nature, lockdowns restrict or ban unnecessary movements. They prevent people from leaving or entering an area. Wuhan City authorities in China imposed a lockdown on the City, and this saw a significant decrease in growth rate (Lau et al, 2020). But for Lusaka Zambia, a lockdown would imply the tiny 16-seater public transport minibuses would be banned from carrying people because of their limited internal space. Therefore, in a country where 58% of citizens earn less than the international poverty line of $1.90 per day (World Bank, 2019), it is difficult to imagine ways people on life serving ARVs would be picking their drugs when public transport is downed. Otherwise,the majority of patients, who do not own vehicles, will have to endure long walks. This might lead to treatment defaulting, which in turn can lead to treatment failure, compromised immunity and more underlying illnesses, a condition necessary for COVID-19 to claim more fatalities.

3.3 Knowledge On Coronavirus Prevention

All participants demonstrated a great deal of knowledge on how they can protect themselvesagainst Coronavirus. All of them highlighted the need to stay home during the COVID-19 pandemic and only move when necessary, during which social distancing should be practiced. The need to wash hands with clean running water with soap or sanitizing them with an alcohol-based hand sanitizer while avoiding shaking hands, touching one's face and being in contact with people who recently travelled was also highlighted. Covering one's mouth with a tissue when coughing or coughing in the elbow was also recommended. Only two recommended wearing masks and gloves while in public. These are the same measures being propagated by the

World Health Organization. However, we cannot conclude that everyone in Lusaka has this high level of knowledge. In a country where only 86.7% can read and write (CIA, 2020), the distribution of information material on the new virus might have to involve use of all available media including radio and television in local languages. Social media can be used for those who can read and write, own a smartphone and can afford data bundles. For the rest, radio, TV and interpersonal communication can still work.

4. CONCLUSION

This study has established that the main source of information on COVID-19 for people living with HIV is social media, followed by television and government announcements. The study also highlighted some concerns and fears that this group of people has. They expressed concern that their HIV status may sometimes (should treatment fail) give them low immunity and make them susceptible to other opportunistic infections including the novel coronavirus. They also expressed fear regarding the possibility of being stigmatized. The possibility of a lockdown may bring about challenges of how their ARVs would be picked. On a positive note, they exhibited high levels of knowledge on the prevention of Coronavirus which should be leveraged for health communication. In order to alleviate fear and create a more knowledgeable PLWHIV, there is need for the Governments with citizens living with HIV, especially those in Africa and other third world countries, to take note of the following recommendations

1. Ensure the management of all HIV cases is not compromised as efforts and resources divert towards COVID-19. This might result in thousands of poorly managed HIV clients who will end up with low immunity and a hoard of opportunistic infections, including Coronavirus

2. Make available mechanisms for HIV continuum of care in the case of a lock-down. Start dispensing 6 monthly ARVs to avoid frequent hospital visits

3. Come up with systems to ensure that no one is stigmatized for having had COVID-19 or for having been suspected of having it

4. Use social media more for information dissemination

5. Use radio and television in local languages for those who cannot read, write and may not own a phone

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