




## Communication of science and Public Health Information, Epidemiology and management of COVID-19 in Zambia; Lessons learnt

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### ABSTRACT

The study sought to understand the availability and adequacy of information about Covid-19; the veracity of information communicated by journalists to the public; misconceptions about Covid-19 among the various sections of society; the knowledge, attitudes and practices of the people around Covid-19; and establish best practices and lessons learnt on how to address the Covid-19 pandemic in future. This is a cross-sectional study that used a single-method approach based on the survey approach. Thus, the study used a quantitative research methodology. Data were collected using self-administered structured questionnaires from households in Kazungula, Livingstone, Kafue, Lusaka, Kabwe, Kapiri Mposhi, and Nakonde districts in Zambia. Data analysis employed descriptive analysis. The study findings established that most of the respondents had heard of Covid-19 at the time of this survey and also understood the symptoms of Covid-19 that included coughing sneezing, shortness of breath, fever and some indicated diarrhoea. Further-more, the findings revealed that Covid-19 spreads from mouth droplets from infected persons, physical contact, and contact with animals infected with the virus. In terms of knowledge of measures to prevent the spread of the virus, respondents indicated hand washing with soap and masking, while others indicated social distancing, reducing public gatherings, staying at home, and avoiding physical. The study also noted various challenges in Covid-19 information communication as well as some best practices. In terms of challenges encountered in communicating Covid-19, the study noted misinformation, misconceptions, and conspiracy theories around Covid-19. The study further noted various measures put in place by the districts, such as having District Response Teams to coordinate sensitisations. Recommendations were made to health practitioners and policy makers.

**Keywords:** Public health, epidemiology, Covid-19, prevention, vaccination, symptoms

## INTRODUCTION

In December 2019 Coronavirus disease (Covid-19) was discovered in Wuhan, China, and has now spread across the world and was declared a pandemic. The disease is caused by the severe acute

Because it is a new disease, scientists are learning more about it each day.

The Covid-19 outbreak affected the entire globe and had devastating effects on public health, particularly in most countries. The pandemic adversely affected the global socioeconomic development of many nations, especially developing nations. At the individual level, the most vulnerable were the elderly and those with underlying health conditions such as diabetes, cancer, hypertension, among others. Thousands of lives have been lost; the worst in Europe and America. Africa, with its poor public health capacity, was not spared by the pandemic.

According to the World Health Organisation (WHO), the spread of Covid-19 can be prevented if the public adhered to public health guidelines of always masking up, sanitising, social distancing, and avoiding congested public places, among other measures. In Zambia, various measures such as masking, hand sanitizing, social distancing, and isolation of Covid – 19 patients, among others were put in place to contain the spread of the virus.. Various other intervention measures such as public awareness campaigns through various media have been instituted. . Despite these interventions, adherence to the guidelines remains a challenge due to various socioeconomic factors. Therefore, this study aims to understand the adequacy of Covid-19 science information and how this can influence decisions. The study also aims to establish lessons on how to better address the

respiratory syndrome Coronavirus 2 (SARS-CoV-2) and presents various symptoms in infected people ranging from mild to severe respiratory diseases, headaches, and loss of taste, among other symptoms.

Covid-19 pandemic in future. Specifically, the following questions were addressed:

- a. Is the available information about Covid-19 adequate?
- b. How effective is the communication medium used?
- c. Are journalists communicating the right information to the public?
- d. What are the misconceptions about COVID-19 among the various sections of society?
- e. Is the information being communicated changing attitudes and practices?
- f. What best practices and lessons on how to address the COVID-19 pandemic have been learnt?

## LITERATURE REVIEW

Since the emergency of Covid-19, numerous studies have been undertaken to understand the Knowledge, Attitudes, and Practises (KAP) related to Covid-19 in various countries. Knowledge, attitudes and practices help to understand people's health choices around Covid-19 and thus, can influence compliance with health protective behaviour. Correct knowledge, the right attitude, and adherence to guidelines are believed to be the most effective way to contain transmission of a virus like Covid-19. When assessing KAP, it is worth noting that the levels of KAP in Covid-19 vary by geographical region within the country and between countries.

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## Science communication and Covid-19

The importance of information in times of pandemics is worth highlighting. Clear, accurate, credible, adequate, and timely information can save lives in times of pandemics. Communication in a pandemic situation can change perceptions, behaviour, and help limit transmission of the disease. During the Covid-19 period, the world witnessed a high demand for information on how to address the calamity. However, not all the information was credible. Misinformation and disinformation was spread in the form of myths and conspiracy theories and misled many, causing more harm. Thus, scientific information becomes critical in confronting such misinformation.

Parker *et. al.*, (2021) contend that misinformation can emanate from the production of low-quality, biased science research – preprints; limited access to high-quality research; poor reading culture of quality research. Parker *et. al.* (2021) further highlighted other sources of misinformation that include poor science research and communication practices. In addition, conspiracy theories are another source of misinformation (Barua *et. al.*, 2020). Furthermore, other studies have identified religious fundamentalists as a source of misinformation, particularly those that encourage their followers to pray to the Almighty to prevent Covid-19 (Djalante *et. al.*, 2020). The lack of answers to questions related to the speed of developing, testing, and approving Covid-19 vaccines also creates grounds for misinformation and disinformation (Overton *et. al.*, 2021). Although misinformation can be transmitted using any media, social networks are the main sources of transmission today, as they are easy to access by everyone at any time.

As highlighted above, communication can influence a person's knowledge, attitudes, and practices (KAP). In particular, the right information can

generate correct knowledge, the right attitude, and correct practices around Covid-19. In turn, KAPs can influence prevention measures adopted by people, and in turn, they determine the success or failure of containment measures.

## Knowledge, attitudes, and practices of Covid-19 Knowledge of Covid-19

It is a common adage that knowledge is power. Knowledge can help prevent catastrophic situations such as death. Exploring the literature on the knowledge of Covid-19, its symptoms, how it is transmitted, and how to avoid contracting the virus. It is worth noting that people's knowledge changes with time. Numerous studies (Sialubanje *et. al.*, 2022; Karijo, *et. al.*, 2021; Lau *et. al.*, 2021; Molla & Abegaz, 2021; Nwagbara, 2021; Sakr *et. al.*, 2021) reviewed indicated that people had good knowledge of the virus.

Most studies have noted that people understood how Covid-19 is transmitted, as well as its symptoms. In terms of transmission, Kaur *et. al.*, (2020) observed that the Covid-19 virus can be transmitted indirectly or directly. Indirectly, the virus can be transmitted by touching contaminated surfaces, while directly, the virus can be transmitted through contact with an infected person (Kaur *et. al.*, 2020). A study by Lau *et. al.*, (2021) observed that coughing and sneezing were the main transmission routes identified by respondents, while indirect hand contact was the least commonly identified infection route. Another study conducted in Northeast Ethiopia reported that most respondents indicated that the virus can be transmitted by coughing and sneezing, direct contact with infected persons, and touching contaminated materials (Molla & Abegaz, 2021).

## Attitude towards Covid-19:

The attitudes towards Covid-19 can be measured

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in many ways, including fear of testing, perception of the seriousness of the virus and what they would do if they met a Covid-19 - 19. Various studies have been conducted to understand people's attitudes towards Covid-19. Examples of such studies on people's attitudes towards Covid-19 include a study by Sakr *et. al.*, (2021), who found good overall levels of KAP among the young Lebanese population, with the majority being optimistic about treatment and vaccination. Further, a study by Alkhalidi (2021) in Saudi Arabia indicated that the majority of the respondents were willing and able to self-isolate if they contracted the virus. However, vulnerable groups such as the elderly and those with low socio-economic status reported lower adoption of preventive measures or ability and willingness to self-isolate. In Covid-19 vaccines, people who did not get vaccinated expressed safety concerns, insufficient information, and lack of belief in the vaccine (Nasimiyu *et. al.*, 2022). A study by Sialubanje *et. al.*, (2022) on health workers observed a high level of knowledge of Covid-19, but noted that the low attitude towards Covid-19 among most health staff was generally influenced by myths and misconceptions.

### **Practices of Covid-19**

To assess practices, numerous studies have also looked at preventive measures people take to avoid infection from Covid-19. Individuals with more knowledge of potential transmission routes engage in more preventive measures than those with less knowledge (Lau *et. al.*, 2020). This indicates a correlation between knowledge and preventive practices. Molla & Abegaz (2021) found that the majority of the surveyed participants did not frequently wash their hands with soap and did not frequently clean their hands with sanitiser. A study in the Congo DR found that despite the compulsory restrictions imposed by the government, only about half of the respondents adhered to the preventive

measures in the DRC. Hand sanitiser use was exceptionally low in certain provinces due to extreme poverty levels. According to this study, few people had correct knowledge of Covid-19 (Ditekemena *et. al.*, 2021). A study by Zelka *et. al.*, (2022) indicates that almost a third of the respondents undertook preventive strategies to avoid Covid-19 infections, such as hand washing with water and soap, using hand sanitiser, maintaining social/physical distance, and avoiding touching eyes. In Cameroon, urban dwellers have twice as much knowledge on Covid-19 than their rural counterparts (Njingu *et. al.*, 2021). The study also observed that people who live in rural areas are less likely to get a Covid-19 vaccine, practice hand hygiene, wear a mask outdoors, and avoid going to crowded places. A study of KAP in Lilongwe, Malawi observed that people were not knowledgeable, had a relaxed attitude, and had poor prevention practices towards Covid-19 (Li *et al*, 2021). The poor and less vulnerable groups, lack of resources, and lack of formal media hampered access to high-quality information regarding Covid-19 among households of low economic status.

### **Lessons learnt about Covid-19 and the communication of scientific information**

There are no internationally accepted best practices for communication during pandemics and epidemics, as situations may differ from country to country. However, experience and strategies used in other countries can provide good lessons to build on. Thus, taking cues from other epidemics such as Ebola, bird flu, and other similar diseases, can help address Covid-19.

Many studies have highlighted various lessons and practices based on past and current situations (Richards, 2020; Oyeniran & Chia, 2020; Afolabi *et. al.*, 2021; Olufadewa, *et. al.*, 2021). A study by Oyeniran & Chia (2020) contends that

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the first important thing to do during a pandemic is to communicate to ensure that citizens are well informed about infection, symptoms, transmission, prevention and treatment. This could help address the myths and conspiracy theories around the disease and help improve health-seeking behaviour. In any pandemic, effective communication is at the centre of everything (Reddy & Gupta, 2020). Therefore, coordination between the media and concerned healthcare authorities, to smoothly communicate information through various effective media about unique preventive measures, and the public can help enhance the effectiveness of information (Oyeniran & Chia, 2020).

African countries can learn from the multifaceted strategies such as strict measures, preventive actions, increased funding to the health sector, increased research, and active participation of its citizens implemented by China, (Olufadewa, *et. al.*, 2021). Additionally, collaboration with other countries with developed health sectors can help access real-time information.

## **METHODOLOGY**

### **Study Setting**

This is a cross-sectional study that employed a single-method approach based on survey. Thus, the study used quantitative research methods. Data were collected in March 2021 using a self-administered questionnaire.

### **Geographic Distribution of the Study Population**

This study was carried out in four provinces, namely; Muchinga, Central, Lusaka and Southern in the following districts: Nakonde, Kabwe/Kapiri, Kafue/Lusaka, and Livingstone/Kazungula. These districts were selected based on the fact that they had experienced and recorded high Covid-19 infection rates during the 2020 outbreak. This was

due to their geographical location and economic activity. Nakonde is in Muchinga on the border between Tanzania and Zambia. Kazungula is a border town between Zambia and Botswana, and Livingstone is a border town between Zambia and Zimbabwe. The Kabwe and Kapiri Mposhi districts are in the Central province and are transit towns. Lusaka and Kafue district are in Lusaka province, where Lusaka is the capital city of Zambia. These towns became hotspots for Covid-19 due to their location and busy economic activity.

### **Population and Sampling**

The study employed a nonprobability sampling method to obtain the sample. Purposive sampling was used to select the participants and households. The sample size for the survey was 400 households (100 households per district). Primary quantitative data collected was analysed using SPSS version 26.

## **RESULTS**

### **Characteristics of the individuals interviewed**

Table 4.1 presents the socio-demographic characteristics of the study participants. Table 4.1 shows that the majority of the respondents were from male-headed households (68.3%) compared to female-headed households (31.7%). However, the majority of the respondents were women (58.4%) compared to males (41.6%). The majority of the respondents were 25 – 34 years (37%) and the least were in the age category 45years and above.

Regarding marital status, slightly more than half of the respondents were married (54.3%), a third are single, 5.4% were divorced, 4.8% were widowed, and about 3% were separated. Most of the respondents had secondary education (43.5%) and only 5.4% did not have any form of education. A total of 57% of the respondents were not in any form of employment. Among the respondents, only about

15% were chronically ill.

| Variable                      | Frequency | Percent |
|-------------------------------|-----------|---------|
| <b>Sex of household head</b>  |           |         |
| Female                        | 153       | 31.7    |
| Male                          | 330       | 68.3    |
| <b>Sex of Respondent</b>      |           |         |
| Female                        | 282       | 58.4    |
| Male                          | 201       | 41.6    |
| <b>Age of respondent</b>      |           |         |
| 15 – 24                       | 116       | 25.6    |
| 25 – 34                       | 168       | 37.1    |
| 35 – 44                       | 100       | 22.1    |
| 45 +                          | 69        | 15.2    |
| <b>Marital Status</b>         |           |         |
| Married                       | 260       | 54.3    |
| Divorced                      | 26        | 5.4     |
| Separated                     | 14        | 2.9     |
| Widowed                       | 23        | 4.8     |
| Never married                 | 156       | 32.6    |
| <b>Education</b>              |           |         |
| Non                           | 5.4       | 5.4     |
| Primary (Grade 1-7)           | 10.8      | 10.8    |
| Secondary (Grade 8-12)        | 43.3      | 43.5    |
| Tertiary (College/university) | 40.2      | 40.3    |
| <b>Employment Status</b>      |           |         |
| No                            | 270       | 56.5    |
| Yes                           | 208       | 43.5    |
| <b>Chronic Illness</b>        |           |         |
| No                            | 383       | 84.7    |
| Yes                           | 69        | 15.3    |

**Figure 4.1:** Socio-demographic characteristics of the study participants

### Knowledge of symptoms, most risk groups, transmission, and prevention of Covid-19

Respondents were asked whether they had heard of Covid-19 or not. About 90% of the respondents had heard of Covid-19 at the time of this survey,

while 10% were not aware of it. Knowledge of the symptoms of Covid-19 is important to ensure prevention of the spread of the virus. Understanding the perceptions of symptoms is a critical source of information that could inform communication strategies for disease management. Table 4.2 presents the awareness of the symptoms of Covid-19. The figure shows that most of the respondents cited coughing (89%), sneezing (86%), shortness of breath (81%), and fever (80%) as symptoms of Covid-19. Fewer people cited diarrhoea (21%) as a symptom.

**Table 4.2:** Knowledge of Symptoms of Covid-19

| Symptoms                | Responses |         | Percent of Cases |
|-------------------------|-----------|---------|------------------|
|                         | n         | Percent |                  |
| Sneezing                | 408       | 16.5%   | 85.7%            |
| Coughing                | 424       | 17.1%   | 89.1%            |
| Fever                   | 381       | 15.4%   | 80.0%            |
| A cold                  | 259       | 10.5%   | 54.4%            |
| Diarrhoea               | 103       | 4.2%    | 21.6%            |
| Loss of taste and smell | 281       | 11.4%   | 59.0%            |
| Shortness of breath     | 386       | 15.6%   | 81.1%            |
| Fatigue                 | 230       | 9.3%    | 48.3%            |
| Other                   | 3         | .1%     | .6%              |
|                         | 2475      | 100.0%  | 520.0%           |

Table 4.3 further highlights the perceptions of how Covid-19 spreads. Most of the respondents (85%) indicated that Covid-19 is spread from mouth droplets from an infected person. Physical contact was another factor cited by about 70% of the respondents. More than half of the respondents (56%) indicated that Covid-19 can spread through infected surfaces. Few respondents indicated that Covid-19 can spread through contaminated food (17%) and through vaccinations (6%).

**Table 4.3:** Perceptions on how Covid-19 is spread

| How Covid-19 is spread       | Responses |         | Percent of Cases | Total  | Alcohol | Herbal remedies | Other |
|------------------------------|-----------|---------|------------------|--------|---------|-----------------|-------|
|                              | N         | Percent |                  |        |         |                 |       |
| Droplets from mouth          | 402       | 25.9%   | 84.6%            | 2991   | 56      | 188             | 2     |
| Infected surfaces            | 267       | 17.2%   | 56.2%            | 100.0% | 1.9%    | 6.3%            | .1%   |
| Contaminated food            | 82        | 5.3%    | 17.3%            | 636.4% |         |                 | .4%   |
| Contact with infected people | 333       | 21.5%   | 70.1%            |        |         |                 |       |
| Touching your face           | 225       | 14.5%   | 47.4%            |        |         |                 |       |
| Vaccinations                 | 27        | 1.7%    | 5.7%             |        |         |                 |       |
| Airborne                     | 214       | 13.8%   | 45.1%            |        |         |                 |       |
| Other                        | 2         | .1%     | .4%              |        |         |                 |       |
| <b>Total</b>                 | 1552      | 100.0%  | 326.7%           |        |         |                 |       |

The study also evaluated the knowledge of measures to prevent the spread of the virus. According to Table 3.6, about 92% of the respondents indicated washing with soap and masking up as a measure to prevent the spread of the virus. About 82% indicated social distancing, 76% indicated reducing public gatherings, and 74% indicated staying at home and avoiding physical contact as measures to reduce the spread of the virus. Few people indicated alcohol (11%), herbal remedies (40%), and steaming (41%) as measures to reduce the spread of the virus.

**Table 4.4:** Knowledge of measures to reduce the spread of Covid-19

| Measures to reduce Covid-19 | Responses |         | Percent of Cases |
|-----------------------------|-----------|---------|------------------|
|                             | n         | Percent |                  |
| Hand wash with soap         | 431       | 14.4%   | 91.7%            |
| Masking                     | 430       | 14.4%   | 91.5%            |
| No Handshake-Physical       | 346       | 11.6%   | 73.6%            |
| No Travel                   | 245       | 8.2%    | 52.1%            |
| Stay home                   | 347       | 11.6%   | 73.8%            |
| Reduce gatherings           | 357       | 11.9%   | 76.0%            |
| Social distance             | 384       | 12.8%   | 81.7%            |
| Steaming                    | 205       | 6.9%    | 43.6%            |

Based on the results, most of the participants had good knowledge of the disease and a positive attitude towards protective measures.

#### **Covid-19 Vaccinations and Perceptions**

Vaccines against any disease are the most effective way to curb spread and contracting infections. COVID-19 vaccination can help individuals develop immunity to the virus; thus, helping reduce severe illnesses and even deaths. The findings revealed that 60.4% of the respondents were vaccinated, while 39.6% were not. Disaggregated by sex of the respondent, the findings show that most males are vaccinated (approximately 65%). Among women, only 58% are vaccinated. Respondents who were not vaccinated were asked to state the reasons why they were not vaccinated. Most of the respondents cited negative publicity (45%) and unsafe vaccines (38%) as the major reasons for not getting vaccinated.

**Table 4.5:** Reasons why not vaccinated

| Why not vaccinated         | Responses |          | Percent of Cases |
|----------------------------|-----------|----------|------------------|
|                            | N         | Per cent |                  |
| Unavailability of Vaccines | 24        | 10.2%    | 15.1%            |
| Not safe                   | 60        | 25.5%    | 37.7%            |
| Not easy to access         | 21        | 8.9%     | 13.2%            |
| Religious beliefs          | 37        | 15.7%    | 23.3%            |
| Not effective              | 17        | 7.2%     | 10.7%            |
| Negative publicity         | 72        | 30.6%    | 45.3%            |
| Other                      | 4         | 1.7%     | 2.5%             |
| <b>Total</b>               | 235       | 100.0%   | 147.8%           |

## Evaluation of Attitude and Perceptions toward COVID-19

The attitudes and behaviour of people towards the Covid-19 pandemic play a critical role in its prevention. According to Figure 3.3, the vast majority of respondents (93%) indicated that Covid-19 is a serious virus and about 85% indicated that they would get tested if they came into contact with a Covid-19 patient. Those who did not get tested were asked the reasons why they would not get tested. It was observed that 60% of those who would not get tested after coming into contact with a Covid-19 patient thought the test was a painful experience. About 31% would not be tested because the test was costly, 40% cannot self-isolate after the test, and 35% think the test is not reliable.

**Table 4.6:** Why not get tested after contact with a Covid-19 patient

| Why not get tested after contact                       | Responses |         | Per-cent of Cases |
|--|-----------|---------|-------------------|
|  | N         | Percent |                   |
| Getting tested would cost money                        | 28        | 12.0%   | 30.8%             |
| I don't know where to go to be tested                  | 13        | 5.6%    | 14.3%             |
| Its time consuming                                     | 19        | 8.2%    | 20.9%             |
| Unable to self-isolate in case tested positive         | 36        | 15.5%   | 39.6%             |
| I do not think tests are reliable                      | 32        | 13.7%   | 35.2%             |
| I worry people will treat me badly                     | 25        | 10.7%   | 27.5%             |
| I am concerned I will get infected at the testing site | 23        | 9.9%    | 25.3%             |
| I think testing will be painful                        | 55        | 23.6%   | 60.4%             |
| Other  | 2         | .9%     | 2.2%              |
|  | 233       | 100.0%  | 256.0%            |

## Evaluation of Practices Concerning COVID-19

Respondents were also asked to indicate the measures they took seven (7) days before the survey to prevent Covid-19 infection. Table 4.7 shows that 89% of the respondents wore masks in public, about 82% washed their hands with soap, 62% followed social distancing guidelines, about 59% used disinfectants and avoided touching their nose, eyes, and mouth, respectively, and about half avoided social events.

**Table 4.7:** Measures taken to prevent COVID-19 infection

| Measures taken in the last 7 days      | N    | Percent |        |
|--|------|---------|--------|
| Hand wash with soap                    | 378  | 20.5%   | 82.4%  |
| Avoid touching my eyes, nose and mouth | 269  | 14.6%   | 58.6%  |
| Used disinfectants                     | 272  | 14.7%   | 59.3%  |
| Avoided social events                  | 234  | 12.7%   | 51.0%  |
| Wore a mask in public                  | 408  | 22.1%   | 88.9%  |
| Ensure physical distance in public     | 283  | 15.3%   | 61.7%  |
| Other                                  | 3    | .2%     | .7%    |
|  | 1847 | 100.0%  | 402.4% |

## Adequacy of available Covid-19 information

Access to quality information on a disease can help change behaviour and prevent infections and deaths. Clear and adequate information can also alleviate misconceptions about a disease like Covid-19. The source of information is also critical in preventing the spread of Covid-19. Officials need to understand the main sources of information and popular channels for disseminating information to ensure that critical information is reaching its intended goals. Table 4.8 presents sources of COVID-19 information and channels, respectively.



**Table 4.8:** Sources of COVID-19 Information

| Source of COVID-19 information | Responses |         | Percent of Cases |
|--------------------------------|-----------|---------|------------------|
|                                | N         | Percent |                  |
| Religious leaders              | 195       | 11.4%   | 41.3%            |
| Political leaders              | 89        | 5.2%    | 18.9%            |
| Friends & Relatives            | 157       | 9.2%    | 33.3%            |
| Covid-19 survivors             | 143       | 8.4%    | 30.3%            |
| Health workers                 | 348       | 20.4%   | 73.7%            |
| Social media                   | 221       | 13.0%   | 46.8%            |
| Ministry of Health             | 322       | 18.9%   | 68.2%            |
| WHO                            | 184       | 10.8%   | 39.0%            |
| Celebrities                    | 47        | 2.8%    | 10.0%            |
|                                | 1706      | 100.0%  | 361.4%           |

The Ministry of Health provided much of the information (68%) through daily updates presented by the Minister and medical experts supported by other Ministers of Information and Communication and Local Government. The updates provided a number of new cases reported, deaths recorded, discharges, and admissions nationwide.

Most of the respondents (74%) received their information on Covid-19 from health workers, and 68% from the Ministry of Health. Almost half received information from social networks. Only about 10% received information from celebrities.

#### **Effectiveness of communication medium used**

The most dominant channel of receiving information was through television (89%), followed by radio (70%), social media (60%), newspapers (32%) and Google (30%).

**Table 4.9:** Main medium of receiving information

| Information medium | Responses |         | Percent of Cases |
|--------------------|-----------|---------|------------------|
|                    | N         | Percent |                  |
| Radio              | 327       | 24.8%   | 69.7%            |
| TV                 | 418       | 31.8%   | 89.1%            |
| Social media       | 282       | 21.4%   | 60.1%            |
| Google             | 137       | 10.4%   | 29.2%            |
| Newspaper/magazine | 152       | 11.6%   | 32.4%            |
|                    | 1316      | 100.0%  | 280.6%           |

Most community members (90%) indicated that information about Covid-19 was readily available in the community from both print media (posters, brochures) and electronic media (Google TV, and social media using the internet, among others). Less than 10% of the population faced barriers in accessing the information due to limitations of the use of the English language, low literacy, and access to information.

#### **DISCUSSION**

The study sought to understand the availability and adequacy of information about Covid-19; the veracity of information communicated by journalists to the public; misconceptions about Covid-19 among the various sections of society; the knowledge, attitudes and practices of the people around Covid-19; and establish the best practices and lessons learnt on how to address the Covid-19 pandemic.

The study has established that most of the respondents had heard of Covid-19 at the time of this survey. The high level of awareness may be due to the massive and regular Covid-19 communication undertaken by the Government and other agencies on Covid-19. Various studies in different countries have also found a remarkable high knowledge of Covid-19. For example, a study in Jordan reported a good knowledge of

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Covid-19 among citizens. However, in some countries like Lebanon, the knowledge is lower (Sakr *et. al.*, 2021), while in other countries like India it is higher, about 98.60% of the respondents know about the causes of the Covid-19 crisis (Singh, Anvikar & Sinha 2022). According to Poddar *et. al.*, (2022), there is a positive correlation between knowledge of Covid-19 and attitudes and practices. Higher knowledge is likely to cause positive attitudes and generate positive practices among individuals.

### **Knowledge of symptoms, most risk groups, transmission, and prevention of Covid-19**

Most of the respondents understood the symptoms of Covid-19. These included coughing, sneezing, shortness of breath, fever, and some indicated diarrhoea. Knowledge of the symptoms of Covid-19 is important to ensure prevention of the spread of the virus. Understanding the perceptions of symptoms is a critical source of information that could inform disease management communication strategies. In terms of transmission, more than eight out of ten respondents indicated that Covid-19 is spread from mouth droplets from an infected, seven out of ten indicated physical contact, and close to six out of ten indicated that Covid-19 can spread through infected surfaces. In terms of knowledge of measures to prevent the spread of the virus, more than 90% of the respondents indicated hand washing with soap and masking as a measure to prevent the spread of the virus. More than three-quarters of the respondents indicated social distancing, reducing public gatherings, staying home, and avoiding physical.

Numerous studies elsewhere have observed high knowledge of symptoms, transmission, and preventive measures. Imboumy-Limoukou *et. al.*,

(2022) revealed that 76.5% of the study participants had a satisfactory level of knowledge about Covid-19 regarding the common mode of transmission, symptoms, and preventive methods. This can be attributed to the efforts to increase awareness as a strategy to curb the spread of the virus. Knowledge is higher among youths due to their frequent use of social networks, as observed by Karijo *et. al.*, (2021), who reported high knowledge about the symptoms of Covid-19 among youth in Kenya.

### **Covid-19 Vaccinations and Perceptions**

The study found that the majority (60.4%) of the respondents were vaccinated, with most of the vaccinated respondents (79%) being from Livingstone and Kazungula and the lowest from Nakonde. The proportion is higher than that observed by Beg *et. al.*, (2022), who reported that 53% of the respondents had both doses of vaccine administered in Pakistan. Carcelen *et. al.*, (2022) found high uncertainty and hesitancy about receiving the vaccine among adults attributed to beliefs around the severity and risk, as well as the safety and effectiveness.

### **Evaluation of Attitude and Perceptions toward COVID-19**

The study observed good attitudes towards Covid-19 as most of the respondents viewed Covid-19 as a serious virus and about 85% indicated that they would be tested if they came into contact with a Covid-19 patient. Positive attitudes can also be attributed to the measures taken by government to create awareness of the symptoms of Covid-19 and its consequences. Singh, Anvikar and Sinha (2022) in India observed a lower positive attitude about Covid-19. In Gabon, Imboumy-Limoukou *et. al.*, (2022) observed that more than 75% of the participants said they wear a mask in public places, wash

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their hands regularly, respect protective and control measures, will accept quarantine if they test positive, and will contact the health authorities if they tested positive.

### **Evaluation of Practices Concerning COVID-19**

Most people were practicing preventive measures for Covid-19, with 89% of the respondents wearing masks in public, 82% washing hands with soap, 62% followed social distancing guidelines, about 59% used disinfectants and avoided touching nose, eyes and mouth, respectively, and about half avoided social events. Al-Hanawi *et. al.*, (2020) made similar findings that almost 95% of respondents refrained from attending social events, 94% avoided crowded places, and 88% avoided shaking hands in Saudi Arabia. Regarding vulnerable groups, in Zambia, a study by Samuyachi *et. al.*, (2021) observed an extremely low good practice among homeless street adults. During the period, the pandemic government instituted guidelines to be followed to ensure reduction of the spread of the virus, such as wearing facial masks, practicing hand hygiene and social distancing to prevent Covid-19 infections. Karijo *et. al.*, (2021) also made similar observations among Kenyan youths who avoided unnecessary travel, washed hands more frequently and used masks in public places. Sakr *et. al.*, (2021) in Lebanon also engaged in good preventive practices such as washing hands and avoiding public places.

### **CONCLUSIONS**

This study has established that a remarkably high proportion of the people interviewed knew about Covid-19. Most of the respondents also understood the main symptoms of Covid-19 which included coughing, sneezing, shortness of breath and fever. Most people also understood that Covid-19 is spread from mouth droplets from infected, physical contact and through infected surfaces.

Similarly, most of the respondents understood preventive measures, which included washing with soap, masking up as a measure to prevent the spread of the virus, social distancing, reducing public gatherings, and avoiding physical contact. Because there is a positive correlation between knowledge and positive perceptions, as well as good practice, the study observed good attitudes towards Covid-19, since most of the respondents viewed Covid-19 as a serious virus and would be tested if they came into contact with a Covid-19 patient. Similarly, most people were practicing preventive measures for Covid-19 such as making up, washing hands with soap, social distancing, hand disinfectants, and avoiding touching the nose, eyes, and mouth, respectively.

The researchers also found extremely high knowledge of Covid-19. The prominent level of awareness may be due to the massive and regular Covid-19 communication undertaken by the Government and other agencies on Covid-19. This underscores the importance of science communication during pandemics. The high level of knowledge, attitudes, and practices around Covid-19 is also an indication of the effectiveness of the information disseminated using various media. The study has noted various practices put in place by the districts such as having District Response Teams to coordinate the sensitisations. Furthermore, Nakonde District Health pioneered home care for Covid-19 patients, which can go a long way toward addressing inadequate space in hospitals.

### **RECOMMENDATIONS**

Based on the findings of the study, the following is proposed:

- a) Enhance science information communication by sectionalising target groups and using appropriate media channels to send

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risk information. Vulnerable groups should not be left behind.

- b) Ensure community participation in the design and implementation of communication strategies. Ensure that communication is adapted to local contexts to improve acceptance.
- c) Build the capacity to respond in a timely manner to misinformation. Answer questions and various needs of people in a timely manner. Use a multipronged approach to address misinformation and disinformation.
- d) For every epidemic and pandemic, policy makers need to develop coherent and unified responses to the pandemic to ensure effective communication using every available forum.

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