

The COVID-19 awareness and safety recommendations response (adherence) rate of people living in Addis Ababa, Ethiopia

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ABSTRACT

Introduction

Ethiopia reported its first case of COVID-19 at the beginning of March 2020. Although the extent of the outbreak in Africa has remained unpredictable, it can be said that some of its effects are already observable in the economy, politics, and society. Lack of disease awareness and widespread poverty in the continent of Africa is supposed to be challenging to contain the spread of the disease.

Purpose

The study aimed to assess the COVID-19 awareness and safety recommendations response (adherence) rate of people living in Addis Ababa, Ethiopia.

Materials and Methods

Descriptive epidemiology and ethnography designs were used to assess the COVID-19 awareness and safety recommendations response (adherence) rate of people living in Addis Ababa. In this study, a mixed-method approach, in which the quantitative and qualitative paradigms are used at different phases was adopted. The relevant data were collected using questionnaires.

Results

A total of 1118 respondents and three key informants (ethnographers) were involved in this study. A significant portion of the respondents was found to be well aware of COVID-19. Out of the 1118 respondents, 99.6% (n=1114) have reported at least a single symptom and mode of transmission of the disease. On contrary, a poor adherence rate was reported by the respondents and ethnographers. For example, only 25% (n=280) and 22.3% (249) of the total study participants abided by the stay-at-home and physical distancing recommendations, respectively. Furthermore, only 55% (n=589) of the respondents used to wash their hands correctly. Negligence was also reported among 70.1% (n=714) of the respondents.

Conclusion

Both the descriptive epidemiology and the ethnographic approaches have revealed that the COVID-19 safety recommendations adherence rate of residents in Addis Ababa was found to be insufficient. In contrast, the disease awareness was significantly high. Therefore, more public and media campaigns need to be initiated to improve people's adherence to the COVID-19 preventive measures. Furthermore, accessibility to face masks, gloves, sanitary materials, and non-crowded public transport should be ascertained to contain the spread of the disease.

INTRODUCTION

The outbreak of a newly emerged respiratory infection is not a new phenomenon in human history. Several

pandemics have been emerged in different parts of the world at different times, with no exception to Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) (Arino

et al., 2006). Coronaviruses (CoV) are a large family of viruses that can infect birds and mammals, including humans. The viruses cause illnesses ranging from the common cold to more severe diseases such as Middle East Respiratory Syndrome (MERS-CoV) and severe acute respiratory syndrome (SARS-CoV). All coronaviruses sport spiky projections on their outer surfaces that resemble the points of a crown, or "corona" in Latin (Centers for Disease Prevention and Control [CDC], 2020). Coronaviruses have been responsible for several outbreaks around the world, including the SARS pandemic of 2002-2003 and the MERS epidemic in South Korea in 2015 (World Health Organization [WHO], 2020). A case fatality rate of the MERS-CoV epidemic was reported to be 34.4% globally in 2019. The majority of the cases and deaths were from Saudi Arabia. On the other hand, the fatality rate of the SARS-CoV pandemic was estimated to be 14% to 15%. The cases were observed in Canada, China, Hong Kong SAR, Singapore, and Viet Nam (CDC, 2020). Coronaviruses are zoonotic, meaning they are transmitted between animals and people. Several coronaviruses utilize animals as their primary hosts and have evolved to infect humans, too. Precursors to both SARS and MERS coronaviruses appear in bats (WHO, 2020).

The SARS virus jumped from bats to civets (small, nocturnal mammals) on its way into people, while MERS infected camels before spreading to humans (CDC, 2020). Several known coronaviruses are circulating in animals that have not yet infected humans. Seven known coronaviruses can infect humans, including the novel coronavirus identified in 2019. Coronavirus disease (COVID-19) is a new strain that was discovered at the end of 2019 and has not been previously identified in humans. It was announced as an outbreak in January 2020. Evidence suggests that the novel coronavirus also jumped from bats to humans after passing through an intermediate carrier, although scientists have not yet identified the infectious middleman creature (WHO, 2020).

Nevertheless, the four most common human coronaviruses - named 229E, NL63, OC43, and HKU1 - did not jump from animals to humans but rather utilize humans as their natural hosts. These human-borne coronaviruses "have presumably evolved to maximize spread amongst the population rather than pathogenicity," meaning the viruses may opt to maximize their spread rather than harm their human host (Kobia & Gitaka, 2020). This may explain why

coronaviruses that are transmitted from animals seem to cause more severe diseases in humans, but the idea remains speculative (Wang & Yu, 2020).

In February, the World Health Organization announced the official name of the illness caused by the new coronavirus as Covid-19, the virus is named Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2). Although the new COVID-19 virus is different from SARS-CoV, it uses the same host receptor, namely human angiotensin-converting enzyme 2 (ACE2). The COVID-19 had chosen the right place to linger, the most populous country on earth. Riding its human host, the virus was ready for take-off, literally. Following the rapid expansion of the disease globally, the world health organization has called the condition a global pandemic. Coronavirus disease 2019 (COVID-19) was first reported in Wuhan city, Hubei province, China, in December 2019, and has since spread drastically to more than 215 countries globally.

Nearly two years into the pandemic, the coronavirus has proven to be more deadly than the MERS & SARS viruses. However, the fatality rate of the coronavirus is still far less than both diseases. That, however, may also help explain why it's spreading so quickly (WHO, 2020).

Signs and Symptoms

Limited information is available to characterize the spectrum of a clinical illness associated with coronavirus disease in 2019. Symptoms are similar to the common flu: fever, dry cough, shortness of breath, and tiredness - it's not solely a running nose. Diarrhea may also manifest in some patients (Ahmed, Colebunders & Fodjo, 2020). These symptoms are usually mild. Older persons and people with pre-existing medical conditions appear to develop a severe illness more often than others. In more severe cases, an infection can cause pneumonia, severe acute respiratory syndrome, kidney failure, and death. Dyspnoea or shortness of breath; persistent pain or pressure in the chest; confusion or delirium and bluish lips or faces are generally considered to be emergency signs (Li et al., 2020).

Mode of Transmission

Early reports suggest person-to-person transmission most commonly happens during close exposure to a person infected with the virus, primarily via respiratory droplets produced when the infected person coughs or sneezes. Droplets can land in the mouths, noses, or eyes of people

who are nearby or possibly be inhaled into the lungs of those within proximity (Feng et al., 2020). The contribution of small respirable particles, sometimes called aerosols or droplet nuclei, to proximity transmission is currently certain. However, airborne transmission from person to person over long distances is unlikely. In general, person-to-person contact and aerosol transmission are thought to be the primary method of transmission for the SARS-CoV-2 virus (Chan et al., 2020).

Epidemiology

Almost two years into the COVID-19 pandemic, more than 220 and 4.5 million confirmed cases and deaths have been reported globally. COVID-19 pandemic, which first occurred in China and turned into a global disaster spreading across the whole world, poses a great danger to African countries that lacks robust health infrastructure (WHO, 2021). The outbreak, which was seen in Algeria for the first time in Africa, has spread almost to the whole continent in a short time. Although the extent of the outbreak in Africa is unpredictable at this stage, it can be said that some of its effects are already observable in the socio-economic and political sectors (WHO, 2020). Though the number of cases in Africa is relatively low right now, scholars still argue that the situation may change spontaneously. The second most populous state in Africa, Ethiopia remained curious about the potential threat of the pandemic (Addis Standard, 2020).

MATERIALS AND METHODS

A mixed-method approach, in which the quantitative and qualitative paradigms were used at different phases of the study was adopted. The quantitative and qualitative data were collected and analyzed separately. The trustworthiness of the quantitative findings had been checked and argued by the qualitative results. This approach was considered to enhance the strength of the overall outcome of the survey.

Quantitative Paradigm (Descriptive Epidemiology)

The quantitative approach has emphasized the numerical analysis of data collected through questionnaires using computational techniques (google forms).

Qualitative Paradigm (Ethnography)

The qualitative approach has explored the real experience of the Addis Ababa people via interviewing key informants (ethnographers). The ethnographers were volunteer social

workers that participate in different public campaigns against the disease, particularly in Addis Ababa. The qualitative paradigm was found to be suitable to cross-check the COVID-19 awareness and safety recommendations response (adherence) rate response of the study participants.

Sampling

Proportional stratified random and purposive sampling techniques were applied in the descriptive epidemiological and ethnographic approaches, respectively. The sample size was calculated by using the prevalence study sample size determinant formula.

Data collection instrument

Electronic questionnaires (google forms) were used to collect the descriptive epidemiological data. The ethnographic data was collected by interviewing the key informants (ethnographers) using audiotape.

Data analysis

The epidemiological data were analyzed using the google form software. Whereas, the ethnographic data was transcribed, categorically schemed, and coded. Furthermore, the ethnographic data was carefully and deliberately scrutinized to come up with meaningful narration. The MAXQDA software program was used to label, categorize, code, organize, and analyze the qualitative data. The researcher computed the adherence test by asking respondents questions concerning COVID-19 preventive measures recommended by the WHO and the Ethiopian Ministry of Health.

Ethical consideration

Ethical clearance was obtained from Addis Ababa Public Health Research and Emergency Management Directorate.

RESULTS

The results have been organized around the objectives of the study. Furthermore, the findings are presented around the research designs that are used to conduct the study.

Socio-Demographic Characteristics of The Studied Population

A total of 1118 respondents have participated in the scheduled interview. Out of the total, 56.7% (n=634) were males, while the remaining 43.3% (484) were females. The age of the study participants ranged between 18 and 79 years old. Out of the total 1118 study participants, 20.6% (n=230) and 17.5% (n=196) hold first degree or above and

diploma, respectively. High school, primary school, and secondary school consisted of 20.1% (n=225), 17.2% (n=192), 15.6% (n=174) of the total study participants, respectively. Certificate holders and illiterates were reported to be 4.9% (n=55) and 4.1% (n=46) of the total respondents.

Findings on The Quantitative-Descriptive Epidemiology

The findings on the descriptive epidemiological approach are refined further as follows. The COVID-19 awareness of the study participants and their adherence rate towards the safety recommendation measures are presented in this section.

i. COVID-19 awareness of the respondents

This section presents the knowledge of the respondents regarding the sign and symptoms, the mode of transmission, and the method of prevention of the disease. Knowledge of the disease's symptoms, mode of transmission, and method of prevention were some of the parameters to assess the study participants' awareness.

Accordingly, out of the total 1118 respondents, 99.6% (n=1114) have reported at least a single symptom and mode of transmission of the disease. On the other hand, more than 80% of the total respondents have reported regular handwashing with soap, wearing a face mask, and physical distancing as key methods of disease prevention.

ii. COVID-19 response (adherence) rate of the respondents

Of the total, 95.8% (n=1071) and 52.6% (n=1069) respondents claimed proper handwashing and regular mask-wearing practice, respectively. Whereas, only 25% (n=280) and 23.5% (n=263) of the total respondents abide by the stay-at-home and strict social distancing recommendations, respectively. The non-adherence rate was found to be more among the youth.

Findings on the Qualitative-Ethnography

The three ethnographers have cumulatively reported 63% handwashing, 26% physical distancing, and 50% mask-wearing habit among people living in Addis Ababa. In general, the response of the Addis Ababa people to wash their hands was reported to be commendable. On the contrary, the practice of physical distancing was reported to be very low. On the other hand, the tendency of mask-wearing in public places was reported to be still low.

Table 1:

Participants' Adherence Rate to COVID-19 Preventive Measures by Study Design

COVID-19 Preventive Measures	Participants' Adherence Rate to COVID-19 Preventive Measures by Study Design	
	Descriptive-Epidemiology	Qualitative-Ethnography
Proper Hand Washing Habit	95.8%	63%
Strict Social Distancing Practice	23.5%	26%
Regular Mask Wearing Habit	52.6%	50%
Abide by the Stay-at-Home Recommendation	25%	Non-Applied (NA)

Table 2:

Participants' Awareness of COVID-19 among Study participants

Parameters Used as Measure of Awareness of COVID-19	Measured Awareness by %
Knowledge of COVID-19 Preventive Measures	95.7% (n=1070) have reported at least a single Preventive measure of the disease; at least 75.8 have reported regular handwashing with soap, wearing of face mask and physical distancing as preventive measures
Knowledge of Mode of COVID-19 Transmission	99.6% (n=1114) have reported at least a single mode of transmission of the disease; at least 65.6% have reported direct contact with an infected individual and surface as the disease model of transmission
Knowledge of Symptoms of COVID-19	99.6% (n=1114) have reported at least a single symptom of the disease; at least 64.7% have reported cough, fever, sneezing, sore throat, and difficulty of breathing as symptoms of the disease

DISCUSSION

Due to the scale and spread of transmission, the novel coronavirus (COVID-19) outbreak was declared a global pandemic on 11 March 2020 (WHO, 2020). Current medical evidence shows that the main symptoms of COVID-19 include coughing, fever, and, in severe cases, shortness of breath, although some people may carry the virus without being symptomatic. While 80 percent of the COVID cases globally are considered to be mild, the elderly, as well as people with compromised immune systems and pre-existing health conditions, such as diabetes or heart disease, are considered to be at higher risk (Wang et al., 2020). As it is a new virus, the lack of immunity in the population (and the absence as yet of an effective vaccine) means that COVID-19 is spreading quickly around the globe (Tobaiquy

et al., 2020). Governments around the world are leveraging different strategies to combat the spread and effect of COVID-19, closing borders, isolating cases, promoting personal infection control, strengthening the health facility, using models and techniques from city quarantines, and herd immunization to social distancing. There isn't much in Africa standing in the way of COVID-19. It is one of the fastest-moving and hardest-hitting pandemics in human history. This is a looming threat to over 1.2 billion people on the continent of Africa (Elhadi et al., 2020). The high-income countries that bear much of the healthcare costs in Africa have been confronted with the COVID-19 fight themselves (Nyenswah, 2020). In Africa, deaths from COVID-19 might far exceed what the world is witnessing right now unless major steps are taken. But we have little hope for substantial financial support when countries like the US cannot afford to adequately supply their healthcare workers with personal protective equipment (PPE) (Jang, Jang, & Lee, 2020). Hence, Africa's strategy to contain the spread of the pandemic and combat the ill outcomes of the disease needs to focus mainly on preventive interventions (Wang et al., 2020). However, the health systems in Africa have been severely challenged: the systems have unreliable stocks of essential medicines, little to no electricity; poor health infrastructure; and poor access to health facilities (Elhadi et al., 2020). On the other hand, while COVID-19 so far has no known treatment regiment, experts recommend a series of actions that can minimize the risk of infection, including vaccine, frequent and thorough washing of hands with soap and water (Tobaiqy et al., 2020). Almost from the onset of the health emergency, the WHO had warned of the risk that COVID-19 could spread to countries with weaker health systems, including in sub-Saharan Africa, where poor sanitation facilities, the proliferation of informal economy, and urban crowding pose additional challenges in the efforts to combat the highly infectious disease (Elhadi et al., 2020). Advocating hand washing in Africa is not a straightforward subject, as many don't have access to water. A lack of water is the norm in Africa, so washing hands is another issue. The findings of this study have pinpointed the same problem. This is one of the driving forces for the unsatisfactory habits of handwashing reports among the Addis Ababa residents. Similarly, promoting social distancing in Africa is not as practical as many lives in informal settlements. Many people are cramped together in small spaces (Noh et al., 2020). On the other hand, almost

60% of the respondents have claimed insufficient space at home to isolate sick people. The overall public facility strain in Addis Ababa was also claimed by the respondents as an obstacle to practicing the social distancing principle. The other challenge in Africa is people's economic status (Ahmed et al., 2020). An online survey in African countries has shown that nearly half of the respondents would run out of money if they had to stay home for 14 days to contain the spread of the disease. Moreover, the survey has shown the lowest-income households are expected to run out of food and money in less than a week (Moulds, 2020). Another significant number of study participants have said hunger has forced them to violate the stay-at-home order. Hence, people in Africa live hand-to-mouth; they have to go to work regardless of what symptoms they are presenting (Addis Standard, 2020).

Similarly, the triangulated findings of this study have revealed that public service constraints such as transportation and insufficient supply of sanitary and personal infection control materials as key hindering factors to properly practicing the safety recommendations (Wolff et al., 2020). Furthermore, disrupted livelihoods and reduced income, coupled with chronic underlying poverty, further challenge families' capacity to purchase essential hygiene supplies and abide by the stay-at-home recommendation (Wang & Yu, 2020). On the other hand, this study has revealed the significantly high disease awareness among the respondents. Likewise, the online survey has also reported a substantial COVID-19 awareness threshold among the study participants (Moulds, 2020).

CONCLUSIONS

The study has outlined that the residents of Addis Ababa are well aware of the pandemic (Reuben et al., 2020). However, the safety recommendation adherence rate was found to be too low, despite the compulsory guidelines instituted by the Ethiopian government. The high rate of non-adherence to the safety measures, particularly among the youth, could be considered a serious challenge to contain the spread of the disease in the city (Ahmed et al., 2020). Therefore, more effort and attention need to be commenced to enhance people's awareness regarding the key role of these measures to curb the ill consequences of the disease (West et al., 2020). Furthermore, essential personal infection control materials such as face masks, soap, water, alcohol, and sanitizer need to be provided in

an affordable way (Siewe et al., 2020). Public facilities such as transportation and markets should be re-organized in a way people could practice the recommended physical distancing recommendation (Chu et al., 2020). The activities of the volunteer hand washing and awareness creation campaigns need to be supported. People with disabilities and specific needs should be identified and helped by key stakeholders. Community-based education should be carried out more than it has been before. Celebrity public disease diplomacy should be carried out to enhance the safety measures adherence rate of the people (Al-Dmour et al., 2020). The second most populous country in the continent and the horn-Africa giant, Ethiopia still stands in front of the ill realities of the pandemic. Therefore, in the face of no existing cure, we need to focus on prevention and control methods. Accordingly, Ethiopians should adhere as much as possible to WHO's guidelines on prevention. Moreover, Ethiopians should enhance their resilience, solidarity, strength, and ingenuity to overcome this crisis (The World Bank, 2020).

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Ethical Approval: Ethical clearance was obtained from Addis Ababa Public Health Research and Emergency Management Directorate.

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