



Compliance to Covid-19 Preventive Measures among Undergraduate Students of University of Calabar, Calabar, Nigeria

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Abstract

Compliance with COVID-19 preventive measure is a double edge sword cutting through the fabric of the everyday life of the Nigerian citizen and the university community to be precise. It is considered that the viral respiratory infections spread by direct contacts, such as touching an infected person or the surfaces that the person has either touched, on which large virus-containing droplets expired by the person lands and there the virus can remain stable for days. The disease is also believed to be spread across a short distance by air. The clinical manifestation of COVID-19 is a dry cough, fever, and tiredness. Other symptoms which may manifest in patients include headache, aches, pains, nasal congestion, sore throat, conjunctivitis, diarrhea, loss of taste or smell or discoloration of fingers or toes. It is important to note that there is a lot of false knowledge and misconceptions about the disease in Africa and Nigeria. These misconceptions affect the degree of compliance to the stipulated preventive measures and also exact an indirect effect of the disease on our community. Compliance with the preventive measure while aids in mitigating the spread of the virus also affect other aspects of our community and our ecosystem by extension. Some of the preventive measures are constant washing of hands, use of face mask, social distance, and self-isolation.

Keywords: Compliance, preventive measures, undergraduate students and COVID-19

INTRODUCTION

The COVID – 19 pandemic has added another crisis to the enrolment mix in the Nigeria educational system. School were closed to contain the spread of the virus through school community transmission. The pandemic was said to be highly contagious and according to the World Health Organizations, the COVID – 19 pandemic could only be contained through strict observance of some basic health protocols such as; isolation of suspected carries, wearing of face mask and constant sanitisation and washing of hands. Generally, the effect of the pandemic affected the educational system worldwide with 1.53 billion student out of school and 184 country – wide school closure (UNICEF; 2020)

Compliance with COVID-19 preventive measure is a double edge sword cutting through the fabric of the everyday life of the Nigerian citizen and the university community to be precise. It has both negative and positive implications on the cumulative health of the university society.

Generally, it is considered that the viral respiratory infections spread by direct contact, such as touching an infected person or the surfaces that the person has either touched, on which large virus-containing droplets expired by the person lands (Lidia & Junji, 2020), and there the virus can remain stable for days (Doremalen, Bushmaker, Morris, Holbrook, Gamble, Williamson & Munster, 2020) or via fomites (particles of skin cells, hair, clothing, and bedding). The droplets can be transferred directly to a person near an infected person. World Health Organization review in 2009 in their report stated that infectious viral diseases can be transmitted over distances compared to indoor environments by aerosols (e.g. airborne infections), and results in clusters of infection in a short period. From the studies on virus transport in general and similarities between the SARS viruses, it is worth noting that the SARSCoV-2 virus also spreads by air. (Morawska, Johnson, Ristovski, & Hargreaves, (2008).) the clinical manifestation of COVID-19 is a dry cough, fever, and tiredness. Other symptoms which may manifest in patients include headache, aches, pains, nasal congestion, sore throat, conjunctivitis, and diarrhea, loss of taste or smell or discoloration of fingers or toes. These symptoms manifest mildly and begin gradually. Some persons become infected but only show mild symptoms. (Unhale, Bilal Sanap & Thakhre, 2020) It is also important to note that COVID-19 shares some symptoms with other diseases thus can be miss diagnosed as seen in the supposed Enugu index case who was miss-diagnosed for COVID-19 disease, but further laboratory testing result was negative (Olisah & Chika, 2020). On 27th, February 2020, Nigeria confirmed its index case in Lagos State, an Italian citizen who works in Nigeria had returned on 25 February from Milan, Italy through the Murtala Muhammed International Airport, He fell ill on 26 February and was transferred to Lagos State bio security facilities for isolation and testing (Wikipedia, 2020). At the onset of the pandemic, preventive measures are taken to protect against imminent danger and control if not stop the disease spread. In line with this, therefore, the Nigerian government (like every other responsible government around the world) introduced various preventive strategies which in tune have interferes with individuals' daily lives and consequently have led to critical economic loss, threaten the mental wellbeing of the population and social disruption, university's environmental health inclusive. People were instructed to stay at home, business and offices were closed, exempting workers in essential services sectors like healthcare facilities/workers and essential commercial establishments.

To prevent further spread of the virus, civil societies, and government agencies-initiated awareness programs for promotions of several preventive measures. Body temperature screening was conducted at airports and those returning from countries with a high number of confirmed cases of COVID-19 were advised to self-isolate. The Nigeria Center for Disease Control in collaboration with State governments also initiated tracing and tracking of victims and their contacts. On 18th March 2020, the Nigerian government prohibited all gatherings of fifty people or above for four weeks and ordered a stay-at-home (Ewodage, 2020). Similarly, the Nigerian government, on 30th March 2020 introduced various containment plan such as the closing of the national borders and airspace, schools, worship centers, and other public places, canceling of public gathering events, the complete lockdown of the Federal Capital Territory, Lagos and Ogun states for fourteen days initially (Radio Nigeria, 2020).

Currently, the federal government while fighting the spread of the virus with massive COVID-19 screening tests and these preventive measures, shows obviously that priority revolves around people's health. Consequently, the indirect impact of these preventive measures on environmental health has been analyzed. Some stipulated COVID 19 preventive measures are listed as follows:

1. Social distance
2. Self-isolation
3. Washing of hands with detergent or use of alcohol based sanitizers
4. Putting on a face mask in public places

Medical experts and researchers in the world work tirelessly towards the production of COVID-19 vaccines and find more adequate ways to curb the spread of the disease, it is important to note that there is a lot of false knowledge and misconceptions about the disease in Africa and Nigeria. The WHO says the disease has ignited the spread of false news and teaching. This implies that a significant amount of information on social media, ignite falsehood interpretation. Specifically, some people in Nigeria doubt the existence of COVID-19; others though admit the existence of the disease but do not believe that it affects the poor or those who cannot or do not travel beyond the national boundaries of the country. Another category believes that some sorts of alcoholic substances and concoction can cure the virus or in the least prevent them from getting infected. A good number of people believe that it is a disease suffered only by the elite class and so it can not affect the poor masses. Others believe that COVID-19 cannot survive in a region around the equator as the temperature would kill it. While others believe it's a death sentence. They believe that it has no cure nor remedy which is contrary to the reports of recovery from the disease. However, with more than 7,839 people infected and 226 deaths recorded already in Nigeria as indicated on Nigeria Centre for Disease Control (NCDC) website (NCDC, 2020) and 112,290 people infected and 3,359 deaths recorded across Africa as indicated on Africa Centre for Disease Control (ACDC) website(ACDC, 2020), it is crystal clear that the virus is not selective as it keeps infecting the rich and the poor alike and could potentially spread on African soil if not combated since the figures are becoming more frightening daily. The false claims that the virus could be cured or prevented by drinking the alcoholic substance, eating of garlic, lemon, and good food to strengthen body immune system and the likes, have been debunked by the WHO and many medical experts around the world. The only way out of it at the moment is premised on personal hygiene - which includes regular hand washing, social distancing, avoidance of large gathering, and regular decontamination of the environment, etc. A lot of media files (most often video, audios) have been circulating on social media with the claim that some drugs combination can potentially reduce symptoms, unfortunately, there are no data or known research conducted by the authors of this information to back up their recommendations. An illiterate or literate that cannot source for a fact will hook-line-and sink such an idea and drug abuse becomes the order of the day. A strict measure was recently introduced by a popular social media platform "WhatsApp" with more than 2 billion people in over 180 countries across the world to limit viral message forwards to one chat at a time to stem the rapid spread of COVID19 misinformation (CNBC, 2020). Although a user could theoretically still forward the same message to individuals or groups one by one it is believed this limitation will be effective in preventing a spread of untrue information about the Pandemic.

Statement of Problem

Covid-19 pandemic poses multiple threats to the environmental health of the university. The students and staff of the university are affected by the disease, the false information surrounding the disease, and the stringent preventive measures stipulated to aid in mitigating the spread of the pandemic.

The general society including the university society need to be educated on the need to adherence to the COVID-19 preventive measures, the effects of abuse of the preventive measures and how best to adapt in with the new mode of function in our society towards a healthier environment

Objective of the Study

1. To understand the nature of the COVID-19 pandemic in Nigeria
2. To different COVID-19 preventive measures
3. To ascertain the effects of the COVID-19 preventive measure on our environmental health
4. To enlighten the public about the realities of COVID-19.

Effects of compliance with COVID-19 preventive measures in Nigerian universities

- i. **Social Distancing:** Social distancing otherwise known as physical distancing works if the objective is to prevent the spread of the virus causing the coronavirus disease. Social distancing, also known as “physical distancing,” entails keeping space of at least 6 feet between yourself and other people outside of your home. The principles of social distancing or physical distancing are;
 - a. Keep at least 6 feet (about 2 arms’ length) from other people.
 - b. Stay away from crowded events or places and avoid mass gatherings.
 These could be achieved by the practice of some of the following or all;
 - c. Working from home.
 - d. Closing traditional schools and switching to online classes
 - e. Canceling or postponing of conferences and large meetings.

Among all COVID-19 preventive measures, maintaining social distancing among ourselves is among the best tools we have to avoid being exposed to this virus and curbing the spread of the virus in our community. (CDC, 2020). Physicians and experts point to lessons from history that indicates that these measures work, including those from the 1918 Spanish influenza pandemic. An article in PNAS2007 highlighted that cities that used multiple interventions at an onset phase of the pandemic such as closing down of schools and regulating public gatherings, showed significantly lower death rates. (Hatchett, Mecher, & Lipsitch, 2007). There have also reports of environmental changes resulting from the compliance to the social distancing. Predominantly, a reduction of pollutants and a minute but not a negligible decrease in carbon dioxide emissions across the world as transportation decreases, businesses close and people stay home. (Katie, 2020) .

Implications of Social Distancing Social distancing increases the risk of a variety of health problems, including heart disease, depression, dementia, and death in some cases. A 2015 meta-analysis of the scientific literature by Julianne Holt-Lunstad, a research psychologist at Brigham Young University, and colleagues determined that chronic social isolation increases the risk of mortality by 29 percent. (Greg, 2011)

2. Self-Isolation: Another major preventive measure applied by health authorities to stop or regulate coronavirus pandemic is self-isolation or quarantine (Esquivel-Gómez & Barajas-Ramírez, 2018). Persons who were exposed to the virus directly or indirectly or countries with high occurrences of COVID-19 are advised to subject themselves to household quarantine for a minimum of fourteen days, excluding them from close association with other people, as well as attending workplaces, schools, or public events. Arguably, this measure is effective in slowing down the spread of contagious diseases, as was seen in the case with SARS in 2003 (Cava, Fay, Beanlands, McCay, & Wignall, 2005. self-quarantine or isolation of suspected exposed individuals is an action done by a person to protect others, research suggests that during times of disease outbreaks, people view favorably public health actions such as self-quarantine or isolation. (Blendon, et al., 2006). Though, different studies suggest that a major obstacle to compliance for household quarantine is concern over the loss of income or employment due to prolonged absence from work, public health official assumes high compliance rates by the public for self-quarantine instructions (Rothstein & Talbott, 2007; Bass, et al., 2010). To successfully self-isolate, a person requires access to a separate room where the person should self-isolate (e.g. no-one else must sleep or spend time in the room). The person must also be able to contact and/or return to a health facility if their condition worsens. Note that the requirements for self-quarantine and self-isolation are the same (Health Department Republic of South Africa, 2020).

Implications of Self-Isolation Isolation has also been associated with a range of psychological distress. This includes depression, irritability, insomnia, fear, anger, confusion, and anxiety. Several studies inferred that isolation was a predictor of post-traumatic stress, including for staff, parents, and students. Another study identified a positive association between alcohol abuse or dependency symptoms three years after being quarantined for public sector workers, who had and worked in a high-risk location. For health care workers, quarantine was also positively associated with avoidance behaviors, such as minimizing direct patient contact or not going to work. A study of Toronto residents found that for some people the return to their usual lives was delayed and they show longer-term behavioral changes such as vigilant hand washing and the avoidance of crowds. (Newbigging & Karen, 2020 & Undiyaundeye & Inakwu, 2020)

3. Washing of Hands: With many viruses, including coronavirus, the virus is a self-assembled nanoparticle in which the most vulnerable structure is the outer lipid bilayer. Detergents dissolve the lipid membrane of microorganisms; virus inclusive. The virus's outer layer breaks apart thus inactivating it. Detergents are also alkaline substances that dissolve particles like dirt, bacteria, and viruses. These dissolved

particles are washed off from the surface of the skin when the detergent is rinsed off while washing our hands., The alkalinity of the detergent (pH approximately 9-10), compared with the normal alkalinity of outer skin with a pH of 5.5 or lower, also can affect the skin barrier as well as the resident skin micro flora. In a study, it was found that an acid skin pH (4-4.5) keeps the resident bacterial flora attached to the skin, whereas an alkaline pH (8-9) promotes the dispersal from the skin in assessments of the volar forearm. (Lambers, Piessens, Bloem, Pronk, & Finkel, 2006).

Considering the effectiveness of hand washing against the COVID-19 pandemic, the frequency of hand washing has been shown to have a limiting impact on influenza-like illness. A study of 2,082 observations, participants who spent only 5-10 seconds washing their hands with soap were more likely to contract influenza-like illness (odds ratio, 1.37; 95% confidence interval, 1.08-1.75), compared to participants who washed their hands for 15 seconds or more. Hand washing with detergents was found to be an independent protective factor against frequent influenza-like illnesses like coronavirus disease (Abdulrahman, et al., 2019).

Alcohol throughout history has been used as a disinfectant, it is recommended for disinfecting the hands since the late 1800s. Some alcohol-based hand sanitizers contain isopropanol, ethanol, N-propanol, or a combination of both. The antimicrobial ability of alcohol can be attributed to its ability to breakdown and coagulate proteins, thus lysing microorganism's cell membranes and terminating their cellular metabolism (Toney-Butler & Carver, 2020) (McDonnell & Russell, 1999). Alcohol solutions within the range of about 60% to 95% alcohol prove to be more effective against the viruses. Notably, alcohol with concentrations lower than 60 percent and higher than 90 percent appear to be less potent because of the presence of less water in the later, and proteins are not broken down easily in the absence of water (Wesley & Talakoub, 2020).

Implications of Hand Washing and Use of Alcohol-Based: Hand washing can arguably be said to be among the best way to prevent or curb a pandemic, medical experts warn that the abusive use of alcohol-based hand sanitizers can inversely increase the risk of infection through skin disorders. Washing of hands too often can also have a negative effect by abrading the skin. The skin normally acts as a barrier to keep moisture in and micro and macro organism out. Over washing of hands or excessive use of hand sanitizers in a bid to avoid contacting the pneumonia causing virus would remove benign bacteria on the skin surfaces. These bacteria normally help protect the body from pathogens as then or virus (Tomoyuki, 2020).

Also, according to the United States food and drugs administration, in recent studies, stated the possibility that triclosan which is the most commonly used active ingredient in antibacterial products like soap, of which there are thousands of aides in making bacteria resistant to antibiotics. Some studies have shown that this resistance may have an impact on the effectiveness of medical treatments. The United States of America Food and Drug Administration have also shown concern over triclosan's possible effects on hormones. The Food and Drug Administration has in their studies showed that triclosan affects the thyroid, estrogen, and testosterone in several animal species, including mammals. The implications for human health, especially for children, are still not fully understood (Fair, 2017). A report in 2014 published by the Canadian Environmental Law Association (CELA), showed that the endocrine activity of triclosan exhibit moderate risks for reproductive toxicity,

developmental neurotoxicity, neurotoxicity (a single dose), and human systemic toxicity (repeated dosage) (Thorpe, 2014).

Constant washing of hands also invariably increases the rate of water usage by individuals. It maximizes the effects of drought and water shortages. While the demand for freshwater sources is on the increase due to an increase in population and aggressive modernization, the supply rather stays constant. By increasing the amount of water, we use, we predispose ourselves to drought in years to come (Barceló & Sabater, 2010). Increasing our water usage also increases the energy required to process and deliver it to homes, businesses, farms, and communities, which, in turn, helps to increase pollution and usage of fuel.

4. Use of Face Mask in Public Places: The report from a multidisciplinary group convened by the Royal Society called Delve (Data Evaluation and Learning for Viral Epidemics) has considered the evidence and concluded in favor of public use of face masks, including homemade cloth coverings to tackle Covid-19. Analysis suggests that this could reduce onward transmission by persons who have the disease but are not showing any symptoms or presymptomatic persons. If widely used in situations where physical distancing is not possible or predictable, it is worth noting that the use of face masks, including homemade cloth masks, can to a great extent contribute to reduction of the viral transmission (Davis, 2020).

Implications of Mask Wearing Some of the concerns about public mask-wearing have not been around primary evidence for the efficacy of source control, but concerns about how they will be used. A. Risk compensation behavior. It is difficult to predict the behavior change that would accompany regulations encouraging public mask use. One concern around public health messaging promoting the use of face-covering has been that members of the public may use risk compensation behavior. This involves neglecting other important preventative measures like physical distancing and hand hygiene based on overvaluing the protection a surgical mask may offer due to an exaggerated or false sense of security (Brosseau & Sietsema, 2020). Similar points have been discussed concerning HIV prevention strategies (Cassell, Halperin, Shelton, & Stanton, 2006; Castro, Delabre, & Molina, 2019), Motorcycle helmet laws, seat-belts and alpine skiing helmets (Ouellet, 2011). However, contrary to predictions, risk reward behaviors have not been significant on the population level, being out-weighted by increased safety in each case (Kopp & Burtscher, 2012) (Burgess & Horii, 2012). Risk reward is not likely to overturn the positive reward at the general population level (Joachim & Acorn, 2000). These results strongly suggest that, rather than withholding the preventative tool, backing it up with extensive messaging that incorporates different preventative measures would instill trust in the general public's ability to act accordingly and empower citizens.

Recommendation

1. Provision should be made at the entrance of public buildings in the university environment for washing of hands
2. Members of the university should be sensitized towards the use of face masks
3. Staff and students should be educated on the need to seek the services of an expert when they feel lonely or unfairly isolated
4. The members of the university community should be educated on the effects of the abuse of the COVID-19 preventive measures
5. Taskforce teams should be set up to enforce adherence to the COVID-19 pandemic preventive measures.
6. The university community should be educated on the COVID19; the myth and the facts.

Conclusion

COVID-19 to large extent has significantly affected the university community and the general members of her society. Apart from the direct effects of the respiratory disease, the preventive measures enacted against the disease have also taken their respective tolls on our community, making sure the society change their manner of behavior in the society. There are also problems of myths and unidentified information circulating concerning the existence of the disease and various ways of prevention. It is imperative to note that the coronavirus is a

disease that affects the young, the old, the rich, and the poor. It is not restricted to any ethnic group, race, or tribe. It's a global pandemic and requires the collective effort of every citizen to fully combat the spread of the disease

As effort are gear toward preventing COVID-19 through relevance agencies (Nigeria Taskforce on COVID-19 in enforcing the preventive measures, the recommended preventive measures also have their respective and a cumulative negative effect on the university's community. The use of physical barriers and social distance which proves to be the first line of defense against the coronavirus pandemic, though aides in the significantly curtailing the spread of the virus also can lead to notable negative effects on the university's community. There is also crucial need to observe the effects of social distance and isolation on the student body and staff of the university. Stigmatization works against the general progress of the regulations and thus should be kicked against. COVID-19 is not a death sentence and can be treated if reported on time.

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