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Prevention of 21st Century Emerging Pandemics, Covid-19: Using Face Masks

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Abstract:

Background: Emerging infections that are airborne or droplets infections, spread by inhalation or contact with infected 'Aerosols' or droplets. COVID-19 and TB are examples of infectious pathogens that are transmitted by inhalation of infected droplets or air. All human beings are at risk of breathing in infectious microbes in the air. Despite this fact and the negative impacts caused by infectious diseases, much attention is still not given to the use of face masks; as they were not recommended for preventing airborne/droplets infections in previous epidemics or pandemics. It was during the emergence of SARS in 2003 that droplets infections and the use of face masks were taken seriously by authorities, but most people are still reluctant to use them. The SARS outbreak was followed by Human swine influenza (H1N1) in 2009, also from zoonotic origin. Face masks were then found to be helpful in the prevention of epidemics/pandemics that can spread through airborne or droplets infections, during and after these two outbreaks. However, face masks have never been given any serious attention by the public, just like now; as some people still refuse to wear them despite warning that COVID-19 can be transmitted through infected droplets.

From this project's objectives, we would be able to know whether people are complying with the wearing of masks or not. We will also know the weaknesses or strengths of wearing them, and give professional recommendations. Aside these the study will also benefit everyone, especially the vulnerable group in the COVID-19 Pandemic's transmission, like pregnant women. It will draw the attention of health workers, especially midwives, the pregnant women, the community and family heads to the prevention of stillbirth or preterm delivery due to COVID-19. This project's findings will serve as a guide to Regional, Metropolitan, Municipal, and District Health Directorates in their Every Newborn Action Plan (ENAP) strategy to curb stillbirth rate, especially soaring in the Tema metropolis. It may also serve as a source of reference for future researchers who would take up similar studies.

Aim: To assess people compliance to the wearing of face masks and find out the strengths or weaknesses associated with it and give recommendations.

Methodology: A checklist will be used to observe how two thousand, seven hundred (2,700) people (above 18 years who are not incapacitated) are wearing face/nose masks. This will be started after approval. Then, questionnaires will be given out to one thousand, three hundred and fifty (1,350) consented individuals (health workers, patients and the general public) who are above eighteen (18) years to answer. Published and grey literatures will be reviewed using related online publications from any year that is related to this project. Three strategical search approaches will be used to search for literature: data from health and social issues would be reviewed, custom Google searches; then experts would be consulted for validation of results.

Hypothesis: Some people are not wearing face/nose masks; others wear them wrongly.

Expected Outcome: Our expectations are that the project would reveal whether people are complying the directive from experts and national presidents to wear face masks. Findings of this projects are expected to reveal the strengths or weaknesses associated with the wearing of face masks and give professional recommendations. The project is an emergency one started in April, 2020 and will end in October, 2020. Findings of the projects are expected to be submitted in October or November, 2020.

Keywords: Prevention, 21st century, emerging, pandemics, COVID-19, face masks

1. Introduction

This chapter is going to tell the reader about what this project is all about under the headings: Background, Problems Statement, Rationale/Justification, Aims or Objectives, and Hypothesis.

1.1. Background

Pandemic is defined as: 'An epidemic occurring worldwide, or over a very wide area, crossing international boundaries and usually affecting a large number of people' (Doshi, 2011; Kelly, 2011). Epidemic, first used by Homer, is a two Greek's word *epidemos*: 'epi' (on) and 'demos', meaning people; it was also first used as a medical term by Hippocrates

(Martin & Martin-Granel, 2006). Epidemic is therefore defined as; 'A disease that affects a large number of people, with a recent and substantial increase in the number of cases' (Martin & Martin-Granel, 2006).

Emerging and re-emerging pathogens, especially, our 21st century zoonosis have been increasing worldwide with serious threats on human lives (Furuse, 2018; Mourya, 2019) and global peace. An emerging infectious disease (EID) or emerging pathogen (EP) is defined by WHO as: 'One that either has appeared and affected a population for the first time, has existed previously but is rapidly spreading, either in terms of the number of people getting infected, or to new geographical areas' (Ogden, 2017; WHO c, 2014). Five examples of these EIDs such as Zika, Ebola, SARS coronaviruses (now SARS-CoV-1), Influenza, and MERS were listed by the WHO on 10th December, 2015 amongst the top five to ten emerging diseases that are likely to result in serious epidemics (WHO d., 2015). Some respiratory diseases like SARS coronavirus were also initially predicted by (Zyga & Zografakis-Sfakianakis, 2011) amongst new pathogens that are potential pandemic's threats.

'Re-emerging infectious diseases are those that have reappeared after a significant decline in their incidence' (WHO e., 1996). Some examples of re-emerging infections are plague, kala-azar, diphtheria, malaria, tuberculosis (TB), influenza, Ebola, and Chikungunya (Mourya, 2019; Hopkinsmedicine.org, 2020; WHO e., 1996). These emerging or re-emerging pathogens (EPs/RPs) must be an area of interest to every researcher; it is revealed that more than 75% of them (Ogden, 2017) were initially zoonotic in nature (transmitted from animals to human beings), causing no serious clinical problems like now. Emerging/re-emerging infectious disease like 'SARS, Influenza, Chikungunya, and Avian Flu' were also specifically identified as areas that scientists and everyone must pay attention to (Zyga, 2011; WHO d., 2015; Becker, 2009); because they have serious negative impacts on humans' lives in general (Mourya, 2019).

This is not the first time that the world has seen coronavirus outbreak! In 2003, there was: 'An outbreak of Severe Acute Respiratory Symptoms', SARS coronavirus (Furuse, 2018; Repent, 2017), which is now SARS-CoV-1. COVID-19 is yet another disease that is caused by a novel coronavirus, SARS-CoV-2, believed to be zoonotic in nature (Ye *et al.*, 2020), as some animals in Wuhan seafood market have been tested positive for it (Mackenzie, 2020; Nishiura, 2020). Avian Flu (Horman, 2018), SARS (Ye Z. Y., 2020), MERS (Li F. &, 2019), Ebola (Ponce, 2019; Baudel, 2019), Zika (Ratanacharoensiri, 2017), Chikungunya (Schrauf, 2020), and so on are all zoonotic diseases that emerged before SARS-CoV-2.

With the exception of Chikungunya (Roos, 2014), all the above can be transmitted through infected droplets and need face masks for protection. Most emerging infections that are droplets or airborne infections, spread by inhalation or contact with infected 'Aerosols' (Morgenstern, 2020; Judson & Munster, 2019) or droplets. Though experts have recommended the wearing of face masks to help prevent the spread of SARS-CoV-2 (WHO, 2020; GHS, 2020; Cheng a., 2020); it can also prevent other aerosols or droplet infections like tuberculosis (TB), measles, CSM, chickenpox, Avian Flu, Ebola (Tellier b, 2019; De Leon-Rosales, 2014; Richard, 2016; Cheng a., 2020) and so on, which are still serious 21st Century emerging/re-emerging infections.

Wells, (1934) gave the first hypothesis that infected droplets and infected air may transmit droplet and airborne infections. His hypothesis was found to be true through research findings of many researchers (Fiegel, 2006; Eames, 2009; Nicas, 2005; Lai A. C., 2012) and recent epidemics or pandemics like Ebola and COVID-19 (Morgenstern, 2020). It was also revealed by (Fernstrom, 2013; Martin, 2006) that all human beings are at risk of breathing infectious microbes in the air. Despite confirmation of his hypothesis by these researchers, as well as the serious negative impacts caused by infectious diseases, his hypothesis was overlooked and face masks were not recommended for preventing airborne/droplets infections in epidemics or pandemics (Lai A. C., 2012).

It was during severe acute respiratory syndrome (SARS) epidemic in 2003 that he was taken seriously, that outbreak was followed by 'Human swine influenza (H1N1) in May 2009' (Lai A. C., 2012). Face masks were used in the prevention of airborne or droplets infections during and after these two outbreaks. This means that right from Wells, (1934) hypothesis, face masks have never been given any serious attention by the public like now, when some people still refuse to wear them despite warning that COVID-19 can be transmitted through infected droplets. Even, the WHO initial directive was that: 'Only health care workers, people with COVID-19 and their caregivers wear medical masks'; later they include everyone in areas with the disease (Associated, 2020).

1.2. Problem Statement

There can be no effective prevention of any infection/disease on earth if the preventive measures advised by experts (WHO, 2020) are not observed, as seen in the COVID-19 pandemic where some people were violating them (Sowah, 2020; Alamisi, 2020; Afful, 2020). In the prevention of COVID-19 Pandemic's Transmission, the use of nose/face masks is one of the major protocols that were suggested by experts from the (WHO, 2020) and national health services, example (GHS, 2020). Most of them like; TB, Avian flu (Richard & Fouchier, 2016), Ebola (De Leon-Rosales *et al.*, 2014), SARS-CoV-2, are respiratory tract infections, that are transmitted through contact with infected droplets when infected persons are talking, coughing or sneezing (Zyga *et al.*, 2011; Asadi *et al.*, 2019; Tellier b *et al.*, 2019).

Face masks, like N95 masks with a filtration rate of 97% and that of surgical masks of 95%, have the ability to filter the air from infectious agents like SARS-CoV-2 (Li a. *et al.*, 2004; Li b. *et al.*, 2005). Both types of face masks when we treat them with 'nano-functional materials' are able to repel water at higher rates through capillary actions to prevent viral and bacterial contamination so that they do not penetrate them when breathing (Li b. *et al.*, 2005). Unfortunately, it seems most people were not observing these protocols properly, especially, the wearing of face masks. Failure of people to wear them would increase the rate of spread or transmission of infection during pandemics like COVID-19.

Meanwhile, the Government's Special Adviser on Health has revealed on Joy News, a live television (TV) show, 21st April, 2020 at 9:00PM, that: '64% of Ghana's COVID-19 positive persons were asymptomatic' (Asare, 2020). Many scientific

publications like (Mizumoto, 2020; Ye F. X., 2020; Rahimi, 2020; Mandavilli, 2020) also found out that asymptomatic carriers of COVID-19 could be reservoir hosts that spread the virus amongst susceptible hosts (people).

If people are not willing to protect themselves and others by wearing face masks; people, especially those with underlined health conditions (Chow, 2020; Liu & Liu, 2020), pregnant women (Mei *et al.*, 2020), and the elderly (Perrotta *et al.*, 2020; Liu *et al.*, 2020; Mueller *et al.*, 2020), would suffer more, since they are the most vulnerable. COVID-19 would also stay with us for long (Shaban & Mumbere, 2020) if people are not ready to observe safety protocols like the wearing of face masks.

1.3. Justification/Relevance/Rationale of the Study

The best public health strategies must be those that are supported or accepted by the general public themselves (public compliance), as its name applies. Just as the compliance of patients to prescribed treatment(s) is/are important (Jimmy, 2011; Chakrabarti, 2014), so is the public compliance to all public health prevention's protocols. Most people failing to observe safety protocols, make it look as if our public health system is weak as written by some writers like Schultz, (2020) and (Shamasunder, 2020).

Compliance in health/medicine is the act of the patient or public accepting experts' advice on any health curative/promotion/prevention practice; like taking medication or wearing face masks properly, as agreed on (Chakrabarti, 2014). In the prevention of COVID-19 pandemic from further spreading, everyone needs to comply as his/her own way of sacrificing to help. 'SARS-CoV-2, the coronavirus that causes COVID-19 does not respect Party Membership, religion, tribe/race, body structure, location/place, profession/job, educational level or your social status' (Niriwa b, 2020). This clearly tells us that everyone needs protection by following all the safety protocols, for which everyone in HKAR was wearing face masks (Cheng *et al.*, 2020).

The world, using scientific researchers or health experts has already developed an 'elaborate' or a good foundation for stronger public health systems (Bloom, 2019; Escribano-Ferrer, 2016) than in olden days. It is true that there are still challenges with our public health (Weeramanthri, 2015; WHO b, 2020), one of which could be the failure of humans to comply with preventive protocols like the proper wearing of face masks. Some mistakes that have been identified in the prevention of COVID-19 transmission in Ghana (Niriwa, 2020), is an article that confirmed these failures of humans to comply with basic safety protocols that are developed to protect them.

One of the major research findings by Escribano-Ferrer *et al.*, (2016) has revealed that developing health preventive/safety measures and guidance on how to practice them is one of the most useful strategies in public health. Though this is very important, the compliance level of the general public cannot be overlooked! The only way that we can tell whether the public is complying with experts' advice is when we assess their compliance level. This project will help the Ghana Health Service, the Ministry of Health, NGOs and all stakeholders to know whether people are complying with the directive to wear face masks or not. It will also identify possible strength(s) and shortfall(s) associated with the directive that can help us in this pandemic's prevention or a future outbreak.

The study will also benefit everyone, especially the vulnerable group in this Pandemic, like pregnant women (Mei *et al.*, 2020). It will draw attention of health workers, especially midwives, pregnant women, community and family heads to the prevention of stillbirth (Zhu *et al.*, 2020; Alberca *et al.*, 2020; Mei *et al.*, 2020) or preterm delivery (Skhan *et al.*, 2020; Mullins *et al.*, 2020) due to COVID-19. The results of the findings will guide Regional, Metropolitan, Municipal, and District Health Directorates in their Every Newborn Action Plan (ENAP) strategy to curb stillbirth (Zhu *et al.*, 2020) rate that is especially soaring in the Tema metropolis. It will be a source of reference for future researchers who would take up similar studies.

1.4. Main Aim

To assess peoples' compliance level to the wearing of face masks, how they are using them, and find out the strengths or weaknesses associated with their use.

1.5. Specific Objectives

- To assess the acceptability and use of face masks among people in public places,
- To identify how people are using face masks, among the users,
- To determine the challenges associated with it use and give recommendations.

1.6. Hypothesis

Some people are not wearing face/nose masks, others wear them wrongly.

2. Literature Review

2.1. Introduction

This chapter provides a review of some research findings pertaining to peoples' behavior on the use of nose masks and the challenges faced with its use. The literature was reviewed using electronic search engines such as google search, PubMed, google scholar, Hinari e-library, Science direct. SCI Hub was used to retrieve the articles in full. Others include unpublished articles, policy document, news reports and social media comment. The literature is reviewed under five headings. The first two are stages of zoonotic diseases and the zoonotic origin of human coronaviruses; COVID-19 stigma and face masks use: mask-up your Stigma. The last three are reviewed on the specific objectives under the headings:

acceptability and use of masks, challenges associated with use of nose masks and the correct and proper use of nose masks.

2.2. Stages of Zoonotic Diseases and the Zoonotic Origin of Human Coronaviruses

Zoonotic Diseases are those transmitted from animals to humans (Burrroughs, 2002; Belay, 2017). Coronaviruses from animals were first discovered in the later part of 1930th century (Cunningham, 1947). Closed proximity of animals and humans has contributed significantly to increases in zoonotic emerging/re-emerging infections (Brian, 2010). Zoonotic microbes progressively pass through five stages to successfully cause humans' infections (Brian, 2010; Wolfe, 2007)!

Infectious agents of animal source like plasmodium species are not naturally found in humans at stage 1, only animal-to-human transmission occurs; in stage 2 infectious microbes like tularemia bacilli, Nipah, and rabies that can naturally be found in humans are transmitted from animals to humans with rare humans to humans' transmission (Brian, 2010; Wolfe, 2007). Secondary zoonotic infection occurs during the movement from stage 2 to stage 3 in which the microbe like Ebola, Marburg, or human monkey pox viruses can be limitedly transmitted between humans. At stage 4, diseases of animal origin like influenza A, *Vibrio cholerae*, and dengue virus; have attained sustainable transmission within humans in the absence of the primary host. In stage 5, the animal host is completely excluded for infectious agents like human immunodeficiency (HIV), smallpox, and tuberculosis; it is only human-to-human transmission that occurs (Wolfe, 2007).

The first human coronavirus case (HCoV-229E), B814 strain, was cultured and identified from the nasal swab of a common cold's patient, middle of 1960th century, 1966 (Kendall, 1962; Hamre, 1966). Two human coronaviruses – HCoV-229E and HCoV-OC43 were identified, but were found to be self-limiting/non-pathogenic (Ye Z. Y., 2020; Bradburne, 1967). The first harmful or pathogenic CoVs were seen during the outbreak of SARS in 2003 (Cheng V. C., 2007; Peiris, 2003).

There are linkages of some genomic proteins found in some specific coronaviruses (Su, 2016; Wong, 2016; Ye Z. Y., 2020). Based on these linkages and sequencing specificities of the different proteins, coronaviruses (CoVs) have been categorized as 'four genera': alpha-CoV, beta-CoV, gamma-CoV, and delta-CoV (Su, 2016; Wong, 2016; Ye Z. Y., 2020). The beta-CoV is the genus that most human coronaviruses (HCoVs) originate from, with quadruple sub-divisions that are represented by the letters A, B, C, and D respectively (Ye Z. Y., 2020; Chan, 2020). Tracing from the phylogenetic tree, majority of α -CoVs and β -CoVs are found to have originated from bats and rodents; whilst gamma (γ)-CoVs and delta (δ)-CoVs are found in birds (Su, 2016).

2.3. COVID-19 Stigma and Face Masks Use: Mask-up Your Stigma

Situations in life are not predictable (Liedström, 2010)! So, anyone who discriminates against or stigmatizes another is discriminating against or stigmatizing himself or herself. Life is sometimes unfair, but there is always something uniquely unique hidden inside every life's situation – whether bad or good! COVID-19 Pandemic (Singhal, 2020) which has taken us by surprise is one of those unfair situations of life. This alone explains why stigma is a serious issue on earth! Social status alone is a reason for discrimination or stigmatization (Tsai, 2015; Phelan, 2014; Lucas, 2012).

Relationship issues have also been used to discriminate against or stigmatize others, where single people are mostly victims (Oderinde, 2013; Gong, 2015). When one marries 'too' early he/she is discriminated against and stigmatized (Moseson, 2019; Zwang, 2004); yet, those who marry late are also treated like that (Oderinde, 2013; Zwang, 2004). These prove that stigma has been with us before COVID-19, as seen in the Mentally Sick (NASEM, 2016; Corrigan & Watson, 2002), HIV/AIDS Positive Persons (Tsai, 2015), those infected with Avian Flu, SARS-CoV (now SARS-CoV-1), MERS, Ebola, Zika (Repent & Osterhaus, 2017; Furuse, 2018). To be able to deal with the problem of stigma, we must first of all change our dirty mentalities that create stigma.

The stigma associated with COVID-19 (Logie, 2020; Badrfam, 2020; Singh, 2020) and the fact that asymptomatic positive persons can transmit it to susceptible individuals or groups (Morgenstern, 2020), are two important reasons that could have been self-driving tools for people to be responsible for their health by willingly wearing face masks. Many COVID-19 survivors and frontline workers have shared experiences of how they and their families have been stigmatized (Singh, 2020; BBC., 2020; Starr, 2020). Some COVID-19 survivors are even discriminated against and stigmatized by their own family members (Starr, 2020), yet most people are not moved by these revelations to protect themselves and others by willingly wearing face masks.

2.4. The Acceptability and Use of Masks

Face mask is a protective barrier-device that protects the wearer from breathing out, coughing or sneezing out infectious droplets that might be inhaled by a susceptible nearby host (Farlex, 2009; Asadi, 2019). Any protective device that covers the mouth, nose or both to give 'noninvasive ventilation' (Simonds, 2010) is a face mask.

Wearing of face masks can help protect both the wearer(s) and others from getting infected by SARS-CoV-2 from positive persons, especially the asymptomatic ones who look healthy and roam amongst us (Mizumoto, 2020; Ye F. X., 2020; Rahimi, 2020; Mandavilli, 2020). They can also help protect us from all other infectious agents like the above, that can be transmitted through air or infected droplets (Tellier b, 2019; Morgenstern, 2020; Asadi, 2019). Though wearing of face masks is as important as any other strategies; like washing of hands with soap under clean running water, maintaining social distance, or using 70% alcohol-based hand sanitizers, that are aimed at preventing the spread of SARS-CoV-2, even

authorities at the beginning did not appreciate their use and now, most people still do not want to use them (Cheng a., 2020).

People not wearing face masks is a global issue where the WHO is criticized for not initially recommending the use of face masks by healthy people for the prevention of COVID-19 (Cheng a. *et al.*, 2020; Feng *et al.*, 2020). In Wuhan, the virus said to have originated from an old man, used their market as the epicenter (Mackenzie & Smith, 2020) because people were not willingly wearing face masks. Even, animals were tested positive for SARS-CoV-2 (Mackenzie & Smith, 2020; Nishiura, 2020) because of the widespread nature of the virus. Only sick people and health care providers were recommended to use face mask (Feng *et al.*, 2020).

In Ghana here, most people wear seen without face/nose masks on live television (TV) shows (Alamisi, 2020) or markets (GNA, 2020), Obuasi market is closed down for being the epicenter of SARS-CoV-2 transmission (Tawiah, 2020). On the internet or TV, NPP and NDC members were seen sharing relief items to needy Ghanaians who were not wearing face masks (Sowah, 2020). Burkinabe escapees (Mail D. a., 2020; Mail D. b., 2020; Afful, 2020) were also seen packed in a vehicle without wearing face masks. Some were also seen wrongly wearing them (Sowah, 2020) or touching them wrongly. Most of those who wear them, are also using them wrongly.

Yet, research findings by (Cheng *et al.*, 2020) in sixteen countries revealed that, in Hong Kong Special Administrative Region of China (HKSAR), a commercial city where citizens were voluntarily using face masks, the number of cases of COVID-19 reduced drastically; compared to cities with low masks usage (Fig. 1).

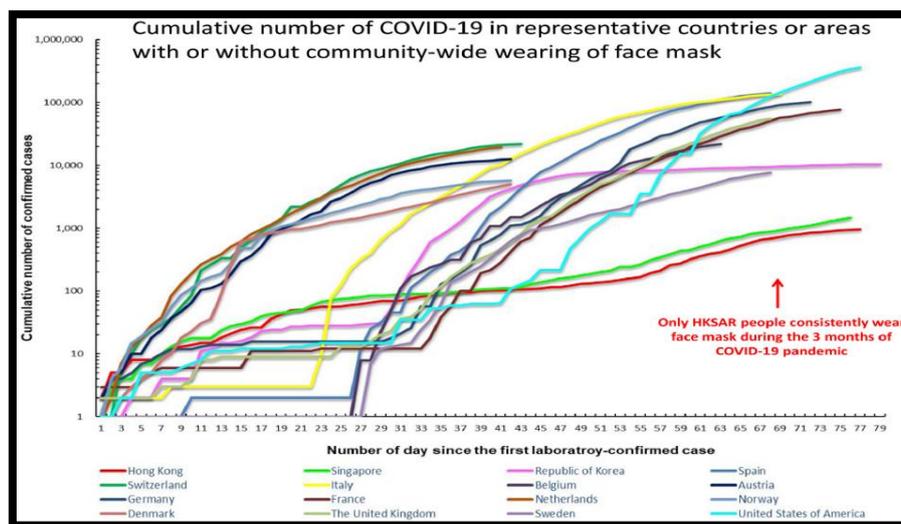


Figure 1: Cumulative Number of Face Mask Use and Associated Infection Rates of Some COVID-19 Infected Countries (Retrieved from Cheng Et Al, 2020 on 17th June 2020 at 3:10AM)

This could be because of the saying by William Caxton, that: 'Once bitten, twice shy!' (Webster, 2001). The current measures that are aimed at preventing the spread of COVID-19, were used in HKSAR during the outbreak or spread of SARS in 2003 and the Influenza A, H1N1, pandemic of 2009 in that city (Cheng *et al.*, 2020); these of face masks was one of the them. In another research findings by (Bae, 2020), face masks were found to be able to prevent inhalation of SARS-CoV-2 by those who wear them. A Hong Kong's research findings have discovered that, surgical face masks can offer wearers 75% protection from droplet infection of SARS-CoV-2 (Cortes, 2020).

However, some people need face masks more than others! The elderly, people who already have known chronic sickness(es), and people who are offering essential services; like health care providers, national security officials, financial service providers, electricity workers, industrial workers, market women or men, taxi drivers and anyone in any gathering, must wear a face mask (Associated, 2020). Except children less than two years, those with breathing difficulties, the unconscious and incapacitated (Cortes, 2020); everyone needs a face mask since everyone who breathes out, talks, coughs or sneezes produces droplets (Asadi, 2019; Tellier R., 2009).

2.5. Challenges Associated with Use of Face/Nose Masks

Though there is no doubt that the use of face masks helps in the prevention of most droplets' infections, like COVID-19, there are challenges. Some of these include: Mistrust/misinformation, accessibility, sickness/difficulty breathing, and false protection, ignorance/age.

2.5.1. Mistrust/Misinformation

Some information that faces masks cannot help in the prevention of infections (Ricks, 2020; Neilson, 2016), create mistrust about the use of face masks. Some people are still finding it difficult to believe that COVID-19 really exist (Appiah, 2020), and for that matter they do not understand why (Eikenberry *et al.*, 2020) they should wear face mask. Others may also find it difficult to wear face mask because they are 'misinformed about coronavirus' (Bloomfield, 2020) and that make them to believe that: 'Covid-19 Is a Hoax' (Appiah, 2020).

2.5.2. Accessibility/Affordability

Some people like health workers at work, may have the will to wear face masks, but have problems with their 'availability' (Chughtai *et al.*, 2015) due to their shortages (Wu *et al.*, 2020; Dev, 2020; Feng *et al.*, 2020). Shortage of personal protective equipment like face masks (Feng *et al.*, 2020) has led to increased prices of face masks. This is putting the lives of health professionals at risk that, the WHO has to call on manufacturers and governments to increase their production in order to meet the high demand (WHO h., 2020). Despite this move, accessibility/affordability of face masks (van der Sande *et al.*, 2008) is still a reality to some people and some health workers, this can affect the wearing of face masks.

2.5.3. Sickness/Difficulty Breathing

There are information out there that the wearing of face masks can increase the risk of getting certain diseases like that of the heart (Li b. *et al.*, 2005) and skin (Lagasse, 2020). Handicapped/weak patients and those who have breathing difficulties like asthma patients (Brody, 2020) cannot wear face masks. The initial directives by WHO that only health workers, sick people and those taking care of them should wear face mask (Cheng a. *et al.*, 2020), was introducing stigmatization and racism especially in Europe and North America (Feng *et al.*, 2020); where those wearing them are suspected as COVID-19 patients and stigmatized against. So, instead of wearing face masks so that they do not get infected and be stigmatized, they were rather not wearing them because they fear to be stigmatized.

2.5.4. False protection, Age/Ignorance

Wearing of face masks does not provide full protection from COVID-19 (Gantz, 2020). Aerosols from infected persons who talk, laugh, cough, or sneeze can infect fomites (Bhatta, 2018) that can infect our hands when we touch them. Wearing face masks does not mean that one should not maintain hand and general hygiene, by sanitizing hands before or after touching anything (Niriwa, 2020) and by bathing or maintaining clean environment. Unfortunately, some people out of ignorance, after wearing face masks think that they are fully protected with that – a sense false protection (Chan b., 2020). Face masks when not worn in addition to all these prevention protocols and the maintenance of social distance is still risky.

2.6. Correct and Proper Use of Face/Nose Masks

Though the wearing of face masks is important in preventing droplet infections, not wearing them properly can be dangerous than not wearing them at all. During this COVID-19 pandemic, many people were seen both on our streets and live TV, wrongly wearing face masks (Osei, 2020; Sarfo, 2020). Whilst others have turned them into mouth or chin masks (Sarfo, 2020; Lai J. , 2020), some were using them as neck and hanging masks (Osei, 2020; Lai J. , 2020). People are seen both on the streets and on live TV shows adjusting or touching face masks any how without washed/sanitized hands (Sweeney, 2020; Paluszek, 2020). These behaviors prompted the WHO to warn that wearing of face mask alone cannot protect one from COVID-19 (Opera.com., 2020; WHO f, 2020).

The WHO has therefore provided guidelines on how to properly wear or remove face masks (WHO f, 2020); these are likened to the dos and don'ts of wearing them (Table 1). The first thing that you must put in your mind even before you wear a face/nose mask is that: 'It is just part of the preventive measures to protect you and others from getting COVID-19' (Associated, 2020). Wearing it does not mean that all the other protocols like social distancing or hygiene (especially hand hygiene) are no more needed.

A. Dos - What to Do Before and After Wearing Face/Nose Masks	
Practice Hand Hygiene	Wash both hands well using the hand washing protocols or sanitize them with 70% alcohol-based hand sanitizer before and after use
Inspect the Mask	Inspect the mask for tears and find the metal piece/stiff edge
Wearing the Mask	Colored side should face outside with the metal piece on the nose
Where to Cover	Your nose, mouth and chin should be covered
Are Gaps Allowed?	Gaps are not allowed! Adjust to avoid gaps at the sides after wearing
Removing the Mask	Remove mask by their handles from behind your ears/head
Disposing off Used Mask	It is recommendable to throw used masks into bins that are closed
Maintain Your Distance	Practice all other prevention measures in addition to wearing masks
B. Don'ts - What to Avoid Before and After Wearing Face/Nose Masks	
Uninspected Mask	Avoid wearing torn, damped/ripped mask, it has no protection
Wrong Wearing of Mask	A mask must not cover only your nose or mouth
Loose Mask	Never wear a mask that is loosed, dirty or torn
Touching	Never touch the interior of a worn mask
Pulling mask up or down	Avoid pulling your mask down or up to talk or do anything
Bad Storage and Re-use	Keep mask away from the reach of others. Do not re-use the mask
Crowded Places	Don't use face mask as a replacement for distancing, practice both

Table 1: The Dos and Don'ts of Wearing Face Masks. Example, Surgical Masks

3. Methodology

3.1. Introduction

This section will explain the methods that will be used to answer the research objectives of the study. The chapter will therefore provide detail description of the study under the following headings; study design, study site, study population, inclusion criteria, exclusion criteria, sample size determination, data collection instrument, data collection method, data handling, statistical analysis, dissemination of results, ethical issues.

3.2. Study Design

This project would be carried out as a quantitative cross-sectional study to assess the use of nose masks among people above two years in the observation. Only those above 18 years made up of health workers, patients, and the general public would be questioned. Literature review is part.

3.3. Study Sites

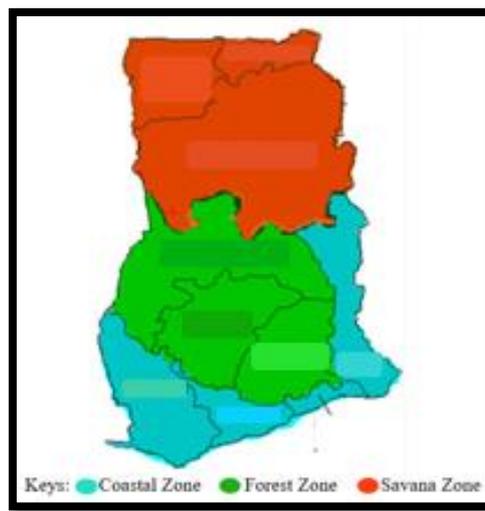


Figure 2: Map of Ghana Showing the Three Major Zones for data collection. Retrieved from https://www.researchgate.net/profile/Ezekiel_Nortey/publication/281900276/figure/fig1/AS:286049935872001@1445211027367/A-map-of-Ghana-showing-the-three-zones.png on 01.08.2020 at 7:02PM

The project would be done in all the three major zones of Ghana: Coastal, Forest, and Savana Zones respectively, as shown in figure 2.

3.4. Study Population

Capable or conscious persons above eighteen (18) years, form part of the target group for the observation. Questionnaires would also be administered to consented health workers, patients, and the general public who are above eighteen (18) years and can think logically.

3.5. Inclusion and Exclusion Criteria that Will Be Used

3.5.1. Inclusion Criteria

- People present at the specific place at the time that the observation started would be sampled,
- Only adults who are 18 years and above would be sampled,
- Only patients at Out-patient Department (OPD) would be sampled.

3.5.2. Exclusion Criteria

- Children below 18 years would be excluded,
- Incapacitated or unconscious people will not be sampled,
- Patients at the In-patient Departments of the hospitals would not be sampled,
- Anyone who comes after the sampling process will be excluded.

3.5.3. Sample Size Calculation

Using a prevalence rate, P, of 26.5% (0.265) COVID-19 patients in China reporting with shortness of breath in a project by Luo *et al.*, (2020), a confidence interval (C) of 0.05 with 95% confidence level and a corresponding Z-value of 1.96, the sample size of people who would be observed at each balloted and selected study area is calculated from the formula. $[Z^2 \cdot P \cdot (1-P)] / C^2$ as:

$$[1.96^2 \times 0.265 \times (1-0.265)] / 0.05^2 = (3.8416 \times 0.265 \times 0.735) / 0.0025 = 299.3 \sim 300$$

So, adding all the three study areas of each selected region, gives a sample size of 900 people would be observed using checklist in each region and a total of 2,700 people for the whole project.

Using the same formula for a prevalence, P of 11% (0.11) health workers (CDC b., 2020) and 11% (0.11) smokers of 'pooled prevalence rates' between 4% to 14% (Alqahtani *et al.*, 2020) who were tested positive for COVID-19, the sample size for consented participants who would be issued questionnaires at each of the three study areas of each selected region, is also calculated below;

$$[1.96^2 \times 0.11 \times (1-0.11)] / 0.05^2 = (3.8416 \times 0.11 \times 0.89) / 0.0025 = 150.44 \sim 150.$$

So, in all, adding all the three study areas together gives a sample sizes of 450 consented people would be issued questionnaires at each region and a total of 1,350 people for the whole study.

3.6. Selection of Study Participants and Sampling Procedures

Three metropolitans/municipals/districts would be randomly selected from each belt for the study through balloting to help generalize findings. Specific areas in each metropolitan, municipal, district or sub-district to be used for the study, will also be randomly selected by balloting. Ten days will be used in each Metropolis/Municipal/District to administer questionnaires. The questionnaires will let us know why respondents wear face masks the way they wear them, why they do not wear them, and their observation(s). Checklist's observation will reveal how people comply with the wearing of face masks, as directed by the President of Ghana and health experts. It will continue until COVID-19 ends. Participants who want to have their voices recorded as alternative to questionnaires would be given that option. However, they would be asked to choose either 'Yes' or 'No' to confirm that they have voluntarily chosen that choice.

Two sample sizes (one for observation, one for questionnaires) would be used at each study site to collect data. A checklist (Tables 2 & 3, Page 37) would be used to observe three hundred (300) people in each of the study area, giving a total of 900 people for each selected zone of Ghana. Adding the 900 people observed in each zone, gives a total of 2,700 people to be observed using checklist. Then out of this, 150 randomly selected consented people; would answer questionnaires (Pages 32-35) in each study area after ethical clearance. This will give a total of 450 consented people (health workers, patients and the general public) at each zone and total of One Thousand, Three Hundred and Fifty (1,350) for the whole project; large enough to generalize findings.

This is how the selection process would be done. In the hospitals and other public places like the market or lorry stations, simple random sampling by balloting would be used to select consented participants for questioning. Depending on the size and population, every nth person would be chosen at hospitals' OPDs. At other public places like markets or lorry stations, one person would be chosen at every nth store or vehicle. Bigger markets would be divided into four parts; each quadrant would further be divided into four (4) and one each would be balloted for the study. This 'n' in nth would be any number that the research would give or calculate, depending the population (example it could every 5th, 10th, or 20th store or vehicle). All COVID-19 Prevention Protocols such as Social/Physical Distancing, Wearing of Face Masks, and Hands Hygiene (The use of hand sanitizer containing 70% alcohol) would be strictly observed. The researcher would give hand sanitizers and face masks to chosen participants who do not have them. He/she wearing a face mask, with the help of an opinion leader like chief, assemblyman, linguist, would explain the balloting process to them that it is done to avoid bias.

For smaller population, the researcher would rub his/her hands with the sanitizer and open a file or bag to remove an A4 sheet. 'Yes' or 'Prevent' would be written on pieces of them and folded; then, all the papers would be mixed and be put into an opaque contain that has been washed under clean running water and soap or sanitized with 70% alcohol-based hand sanitizer. Neither the researcher nor participants at this time can tell which paper is yes or prevent. He/she would remind participants to maintain social distance and sanitize their hands as they pick the folded pieces of papers. Those who picked 'Yes' would be used for the study; whilst those who picked 'Prevent' would be thanked and be reminded of the explanation given to them before the balloting.

3.7. How the Research Finding Would Be Analyzed

Data that would be gotten from the project would be saved and analyzed with Microsoft Office – Word or Excel Software (Microsoft® Office Professional 2010, Microsoft Corporation, USA). Data that would be collected would be analyzed using descriptive statistics. Most presentative techniques like Tables, graphs, frequencies, mode/mean; would be used to analyze and present the data for better understanding.

3.8. Quality Assurance

COVID-19 preventive measures like physical distancing, wearing of face masks (given by the researcher to those not having), washing or sanitizing hands, are going be strictly observed by both researchers and the participants to prevent spreading it. To be able to generalize the findings bias in the selection of study areas and participants would be avoided by using random sampling, where they would be balloted for. The Ghana Health Service would issue an ethical clearance after they have gone through the proposal to rule out any unethical issue that might be associated with it and also to help put the project in a standard form. Trusted online searches would be done using Google searches, PubMed, Science direct, Google Scholar, and so on. Sci Hub would then be used to retrieve full contents of literatures that do not provide full information. For only related information on the project, the search engines would be given limitations in their search by using years and tags like Face Masks, COVID-19, Prevention, Pandemic, Emerging, and so on.

3.10. Project's Duration

This protocol's proposal which was started in March, 2020 by identifying the problem, reviewing literature and putting up the protocol. It is hoped that data collection would start in December and end by the end of May, 2021 if Ethical Clearance is given (Project's Timeline, Page 20).

3.11. Problem(s) Anticipation

The first problem that is anticipated is the funding, but we are ready to jointly fund it, should we not get support. However, we are hoping that there might be funding after ethical clearance. Some participants might not also comply even though they might consent to participate, but we hope we do not meet such cases. Participants would be encouraged to be frank with their responses to help provide quality findings. Travelling risks is something that cannot be overlooked, but we hope there would be no such risk during the data collection. It is also possible that we might meet people who are COVID-19 positive patients with symptoms at the initial stages who might even visit no hospital yet. This is why the observation of all COVID-19 Prevention Protocols during sampling is very important as indicated in the Quality Assurance and Participants Selection.

3.12. Project Management

Three people from three administrative parts of Ghana (Fig. 2) are the investigators. They will all participate in the observation and administration of questionnaires to participants.

Mr. Benjamin Pule Niriwa: Team leader or principal investigator. He identified the topic or problem and wrote the proposal.

Mr. Mark Anthony Azongo: Secretary or organizer, editing/suggestions, submission of projects for clearance, communicate responses from ethical clearance review board to members,

Madam Mabel KissiwahAsafo: Team member, provision of guidelines for ethical clearance, editing/suggestions.

3.13. Conflict of Interest: There Is No Conflict-of-Interest Problem Identified

3.13.1. Dissemination of Results

This project's findings would be submitted to the Ghana Health Service/Ministry of Health, NGOs and all stakeholders that formulate policies. The investigators would publish the project and its findings in journals that are peer reviewed as well as in health-related websites and media for easy access by everyone. Health facilities and communities that were used for data collection would also be given the findings of the project in the form of a report. Any individual participant who wants the findings will access to it. This project and its findings would be published as: 'Niriwa, B., P., Azongo, M., A., &Asafo, M., K. (Year). Title. Journal's name, Volume/edition, issue number, then page numbers'. God, our divine source of wisdom would be acknowledged first. Our consultants would also be acknowledged next. Then, editors, data collectors, and all those who supported this project would also be duly acknowledged.

3.14. Ethical Clearance

Ethical clearance would be obtained from the Ghana Health Service to collect the data. Participants would be provided with information about the project (Participants Information Sheet, Page 31-32) to help them willingly make informed decisions. The consents of every participant would be sought and he/she would **voluntarily** sign or thumb print to confirm this, before data collection starts (Visit Participants' Consent Form, Page 33). All COVID-19 Prevention's Protocols such as social or physical distancing, wearing clean untorn face masks, hand hygiene (washing of hands with soap under clean running water for at least 20seconds, or sanitizing hands with 70% alcohol-based hand sanitizer) would be strictly observed too (.

3.14.1. Protocol's Amendment

In case of any unethical issue identified, all investigations would stop immediately and the protocol would be amended as quickly as possible in consultation with the Ghana Health Ethical Protocol Review Board.

3.15. Budget and Logistics

The investigators will use the miscellaneous in the budget to address any unexpected spending that they might incur as they carry on with the project. They will also use it to mourn or celebrate with participating communities, if they go for data collection to meet the balloted community mourning or celebrating. Opinion leaders like chiefs, assemblymen, or linguists would be motivated.

Items	Quantity	Average Cost (Gh₵)
Hand Sanitizers	5L Gallon, 3	720.00
Face Masks	3Boxes	150
T & T	For 3 People	1500.00
Hotel/Guest House Fees	For 3 People	765
Motivating Opinion Leaders	9 Villages	450.00
Phone calls, Data, etc.	For 3 People	300.00
A4 Sheets	5 Packs	115.00

Ethical Clearance Fees	1 Proposal	500.00
Printer Cartridge	1	350.00
Detergents		75.00
Miscellaneous		1000.00
Total		5,025.00

Table 2: Budget for the Protocol

3.16. Financing and Insurance

There is current no funding or insurance for the project. Meanwhile, we the researchers (Benjamin Pulle Niriwa, Mark Anthony Azongo, and Mabel KissiwahAsafo) have to selves-fund it together; in case there is still no external financial support. We would, however, be grateful to any organization that would be ready fund it or provide insurance.

4. Abbreviations or Definition of Terms

AIDS=	Acquired Immunodeficiency Syndromes
CDC =	Centers for Disease Control and Prevention
COVID-19=	Coronavirus Disease 2019
CSM=	Cerebrospinal Meningitis
GHS=	Ghana Health Service
EID=	Emerging infectious disease
ENAP =	Every Newborn Action Plan
EP=	Emerging pathogen
GNA=	Ghana News Agency
H1N1=	Hemagglutinin Type 1 and Neuraminidase Type 1
HCoV=	Human Coronavirus
HIV=	Human Immune Virus
HKSAR=	Hong Kong Special Administrative Region of China
MERS=	Middle East Respiratory Syndrome
NASEM =	National Academies of Sciences, Engineering, and Medicine
NGOs=	Non-Governmental Organizations
RP=	Re-emerging Pathogens
SARS-CoV-1=	Severe Acute Respiratory Syndrome – Coronavirus-1
SARS-CoV-2=	Severe Acute Respiratory Syndrome – Coronavirus-2
SDGs=	Sustainable Development Goals
STILLBIRTH=	Death of fetal at within or after 20 weeks of gestation
WHO=	World Health Organization

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Appendix

Participants' Information Sheet

Title of Research Study: Prevention of 21st Century Emergingpandemics; Covid-19, Using Face Masks

Introduction

We are group of researchers from the southern (Mabel KissiwahAsafo), middle (Benjamin Pulle Niriwa) and northern belts of Ghana (Mark Anthony Azongo); currently embarking on a study on the above title. The leader of the team or Principal Investigator (Benjamin Pulle Niriwa) is a currently a staff of Holy Family Hospital – Techiman, Box 36. You can reach him on 0242015959 or pullebenjamin@gmail.com.

Background and Purpose of the Study

As the research topic implies, the project is about the use of face masks during Infectious Pandemics, like COVID-19. The project's purpose is: 'To assess peoples' compliance level to the wearing of face masks, how they are using them, and find out the strengths or weaknesses associated with their use. Then, make recommendations.

Nature of the Study

This protocol is a cross-sectional study. Our interests in this study are to: assess the acceptability and use of face masks among people in public places, identify the correct use of nose masks among the users, and determine the challenges associated with their use; then recommend. Four Hundred and Fifty (450) consented people (Health workers, OPD patients, and People at Public Places like the Markets or Lorry Stations) who are above 18 years, would be used.

Participants' Involvement/Category of Participants

Duration /What Is Involved

All people above eighteen years who are consciously capable would be sampled. Participation is purely voluntary and participants prove that by giving their consents to spent about 15-30minutes responding to questioners.

Benefits/Risk of the Study

There is virtually no risk, but the study may inconvenience participants who may have to sacrifice their time to answer questionnaires. All COVID-19 prevention protocols would be strictly observed to prevent instigators and participants from getting infected. There is no cash benefit for participants, but the results would indirectly benefit all; as we would learn from this and know how to tackle similar one(s).

Costs

Consented participants may spend 15-30minutes of their time.

Compensation and Follow-Up

There is absolutely no risk of injury to participants, so, there is no payment or compensation for participants. The investigator would however make a follow on the participants either through a visit or phone call.

Confidentiality

Questioners will only be identified by serial numbers and not participants' names. Anonymity of the participants is therefore highly protected.

Participants' Participation/Withdrawal

Participation is purely voluntary and participants may withdraw at any time. Withdrawal will not have any effect on participants.

Study Procedure

Checklist will be used to observe how people are wearing the face/nose masks, and consented individuals would answer questionnaires.

Appropriate alternative Procedures

Consented participants who wish to have their voices recorded instead of filling the questionnaires, can do that by ticking 'Yes' below.

Would you like to have your voice recorded, rather? Yes No

Study's Outcome and Participants' Feedback

Participants can contact their various Metropolitan, Municipal, and District Health Directorates for the protocols' findings. They can also get the findings from selected health facilities used for the study. Those who can read and be able to use the internet can also get the findings online by typing the protocol's topic/title.

How the Protocol Is Funded

There is currently no funding, but the investigators are jointly funding it.

How Participants' Answers Would Be Shared

The Investigators would submit findings from the observation and information provided to Ghana Health Service, NGOs, all stakeholders and the general public without exposing any of our cherished participants.

Informing Participants and Giving Them Copy of Consent of Form

Participants will be given copies of the information sheet and their signed or thumb-printed Consent forms. Bias would be avoided throughout to minimize these ethical issues.

Questions

The participants have the right to ask questions and to receive satisfactory answers to such questions. Participants with question and concerns regarding the study can contact the study team on the following numbers: 0242015959, 0200622200. For any question on ethical issues, please call the Ghana Health Ethical Committee's Chairman on 0503539896. Thank you!

Consent to Participate in a Research Study*Participants' Consent Form***Study's Title: Prevention of 21st Century Emerging Pandemics; Covid-19, Using Face Masks.****Participants' Statement**

I acknowledge that I have read or have had the purpose and contents of the Participants' Information Sheet read and all questions satisfactorily explained to me in a language I understand (Example, Twi/English). I fully understand the contents and any potential implications as well as my right to change my mind (i.e., withdraw from the research) even after I have signed this form.

I voluntarily agree to be part of this research.

Name of Participant.....

Participants' SignatureOr Thumb Print.....

Date:

The Project's Time Line of Activities

Activity	Months and Year														
	Mar 2020	Apr 2020	May 2020	Jun 2020	Jul 2020	Aug 2020	Sept 2020	Oct 2020	Nov 2020	Dec 2020	Jan 2021	Feb 2021	Mar 2021	Apr 2021	May 2021
Identifyin g Problem	*	*													
Proposal Preparation		*	*	*	*	*									
Proposal Presentation						*	*	*	*						
Institutional Support Letter								*							
Letters to the Study Sites					*	*	*	*							
Ethical clearance					*	*	*	*	*	*	*	*	*		
Data collection												*	*	*	*
Processing of data												*	*	*	*
Results entry												*	*	*	*
Analysis of results												*	*	*	*

ACTIVITY	Months and Year														
	Mar 2020	Apr 2020	May 2020	Jun 2020	Jul 2020	Aug 2020	Sept 2020	Oct 2020	Nov 2020	Dec 2020	Jan 2021	Feb 2021	Mar 2021	Apr 2021	May 2021
Write up							*	*	*	*	*	*	*	*	*
Finding's submission														*	*

Table 3

Questionnaires

Administration of Questionnaires to Assess Face Mask Use and for Demographic Data

Interviewer Administered Questionnaire to Persons above Eighteen (18) Years on the Use of Face Masks in, the Topic: 'Prevention of 21st Century Emerging Pandemic, Covid-19, Using Face Masks'.

Dear Participant,

Good day! We are researchers who are carrying on a study on the prevention of 21st Century Emerging/Re-emerging Infectious Zoonotic Pandemics, Like COVID-19 Using Face Masks in Ghana. We seek your consent to participate in this important project to share your experience(s) or concerns about the wearing of face masks. The project's purpose is: 'To assess people compliance level to the wearing of face masks and find out the strengths and weaknesses associated with it'.

This project's findings will help the Ghana Health Service, the Ministry of Health, NGOs and all stakeholders to know whether people are complying with the directive to wear face masks or not. It will also identify possible strength(s) and shortfall(s) associated with the directive that can help us in this pandemic's prevention. It will help us to prevent a possible future outbreak or minimize its transmission too. If you are ready to participate, you will be spending 15-30mins of your time.

Feel free to express yourself or tell us whatever problem you have or have observed about the wearing of face masks. Whatever information you provide are strictly confidential. Your name or anything that identifies you would not be made public or disclosed to anyone. Whatever you say in this questionnaire is anonymous and can never be traced back to you through any means.

Please, we assure you that, you are not under any force to give answer(s) to any of the question(s) that you do not want to give answer(s). You are also free to stop the interview at any point or time. It is your own free will to decide whether you will participate or not. Thank you.

These are the Specific Objectives of the Study, please.

- To assess the acceptability and use of face masks among people in public places,
- To identify the correct use of the nose masks among the users,
- To determine the challenges associated with it use, and give suggestions/recommend.

Section A: Demographic Data

Please tick (√), where appropriate, for all the questionnaires

1. Mask Type: N95, Surgical, Home-made, Other (Specify):

2. What is your Sex?

Male Female

3. What is your age?

Below 20 20-40 41-60 Above 60

4. Marital status:

Single Married Divorced Widowed Separated

5. What is your highest level of education?

No Formal Education Primary Junior High Senior High College University

6. What is your Occupation/Profession?

Farming Construction Teaching Health Worker Politician Unemployed Others, specify

Section B: Assessing Whether People Are Wearing Face Masks As Suggested By Experts

7. I. By your own observation, do you think that people are wearing face masks as advice by experts?

- A. Yes B. No C. Not Sure

II. Give reason for your answer

Section C: Investigating Whether People Are Wearing Face Masks Properly

8. I. Do you know the dos and don'ts of wearing of face masks?

- A. Yes B. No

II. Name any dos or don'ts of wearing face masks that you know

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9. From what you see around, are people wearing face masks properly?

- A. Yes B. No C. Not Sure

10. Why are you wearing your face mask like that?

Answer:

Section D: Strengths and Weaknesses That Might Be Associated with Face Masks Use

11. A. Are you aware of the existence of COVID-19? Yes No

B. If yes, how do you know about its existence? Through:

- I. Radio II. TV III News Papers IV Facebook V. WhatsApp

12. A. Are you aware that wearing face mask can help prevent you and others from having it?

- I. Yes II. No III. I don't know

B. If yes, how did you know about it? Through:

- I. Radio II. TV III. News Papers IV. Facebook V. WhatsApp

13. A. Why will someone not want to wear face mask?

- I. Disbelieve about COVID-19 existence II. Lack of education III. Inaccessibility of face masks IV. Poverty V. Other(s), specify

B. What will make someone willingly want to wear face masks?

- I. For Protection from Airborne/Droplets Infections, COVID-19 II. Because it is mandatory III. He/she understands why it should be worn IV. Because of sickness like asthma

Other(s), specify:

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Checklists

Wears Face Mask?	No	Yes	Where Does the Face Mask Covers?					
			Nose, Mouth & Chin	Mouth	Chin	Neck	Hanging	Others
Day 1								
Day 2								
Day 3								
Day 4								
Day 5								
Day 6								
Day 7								
Day 8								
Day 9								
Day 10								
Total								

Table 4: Summary of Checklists on Mask Usage at/in

Checklists for Face Assessment, Day 1. Place: Date:	
Wears Face Mask?	Note Not Won or Where It Covers with Roman Numeral, I Each
No	
Yes	
Mouth & Nose	
Mouth Only	
Chin/Jaws	
Neck	
Hanging	
Total	

Table 5: Daily Checklists on Mask Usage in

Checklists for Face Assessment, Day 1. Place: Write Place of Sampling. Date: Write Date	
Wears Face Mask?	Note: Tally Not Won or Where It Covers, for Each Person
No	IIII II
Yes	IIII IIIIIIIIIIIIIIIIIII I
Mouth & Nose	IIII IIIII
Mouth Only	IIII IIIIIII I
Chin/Jaws	IIII
Neck	0
Hanging	0
Total	38

Table 6: An Example of Daily Checklist for Face Masks Assessment