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Cultural and Educational Implications Of The COVID-19 Global Pandemic In Ghana

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Abstract

The study is a qualitative inquiry into the cultural and educational implications of the COVID-19 global pandemic in Ghana from the 3rd of March to the 16th of April, 2020. Thirty-Eight conveniently sampled study participants consisting of teachers, informal sector workers, health workers, and news reporters from the two epicentres of the COVID-19 in Ghana were recruited for the study. Data were generated via face-to-face, telephone, and video interviews and published news reports on the COVID-19. Data were analyzed using qualitative descriptive thematic analysis, and document analysis. The findings revealed that the myths and misinformation on the infection and prevention of the COVID-19 are shrouded in the cultural beliefs of Ghanaians. In terms of education, there is a weak implementation of online education in Ghana due to the lack of technical know-how and technological gadgets as well as the high costs of internet infrastructure. The study suggests the use of a culture-driven public health education strategy and the re-creation of a robust educational system that uses blended learning approaches in Ghana.

Keywords: COVID-19, cultural beliefs, online education, infodemics, Ghana

Consecuencias Culturales Y Educativas De La Pandemia Global Del COVID-19 En Ghana

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Resumen

El estudio es una investigación cualitativa sobre las implicaciones culturales y educativas de la pandemia global de COVID-19 en Ghana desde el 3 de marzo hasta el 16 de abril de 2020. Para la muestra se seleccionaron convenientemente treinta y ocho personas entre maestros, trabajadores del sector informal, salud, trabajadores y reporteros de los dos epicentros del COVID-19 en Ghana. Los datos se generaron a través de entrevistas personales, telefónicas y en video, y análisis de noticias y reportajes sobre el COVID-19. Los datos se analizaron mediante análisis cualitativo descriptivo temático y mediante análisis de documentos. Los hallazgos revelaron que los mitos y la información errónea sobre la infección y la prevención del COVID-19 están envueltos en las creencias culturales de los ghaneses. En términos de educación, hay una implementación débil de la educación en línea en Ghana debido a la falta de conocimientos técnicos y dispositivos tecnológicos, así como a los altos costos de la infraestructura de Internet. El estudio sugiere el uso de una estrategia de educación en salud pública impulsada por la cultura y la recreación de un sistema educativo robusto que utiliza enfoques de aprendizaje combinado en Ghana.

Palabras clave: COVID-19, creencias culturales, educación online, infodemia, Ghana

There have been several forms of pandemics that have plagued the world (Muthu, 2015). From the 1900s, the world has had to deal with the Spanish flu pandemic (Antonovics, Hood & Baker, 2006), Small Pox pandemic (Huremović, 2019), SARS-CoV pandemic (Smith, 2006), Novel influenza A H1N1/09 pandemic (Microbiology Society, 2016), Ebola virus pandemic (Loukatou et al., 2014), Zika virus pandemic (Sikka et al., 2016), and the unknown Disease X pandemic (Gale, 2020). In December 2019, the world woke up to an unpleasant surprise and a resurfacing of a deadly novel viral pandemic from the family of coronaviruses that would plague the entire continent. The outbreak of this probably deadliest threat to humanity in the history of deadly threats (Hopkins, 2020) started in Wuhan, Hubei Province in China. Similar to past pandemics in human history, the COVID-19 pandemic has had and continues to exert very devastating effects on humans (Centers for Disease Control and Prevention, 2019). While the effects on humans are diverse, having far-reaching impacts on every aspect of life including economics (Chicago Business, 2020), agricultural production (Rediff, 2020), petroleum and oil production (Reuters, 2020), this study focuses on two aspects of the impacts of the COVID-19 global pandemic from the Ghanaian perspective. The first part of the study focuses on the impacts of religious and culture-led medicinal beliefs and values on misinformation about the mode of infection and prevention of the COVID-19 (Armenakis & Kiefer, 2007; Uskul, 2010). The second part of the study investigates the effects of the COVID-19 global pandemic on the delivery of teaching and learning in Ghanaian educational institutions (UNESCO, 2020).

Culturally, various religious beliefs and practices are contributing to the spread of the COVID-19 (Wildman, Bulbulia, Sosis & Schjoedt, 2020). Rashid (2020) reports the account of a pastor in the Shincheonji Church of Jesus in Daegu, South Korea who propagated the religious teaching that the COVID-19 was the Evil One who was using the virus to fight against the growth of the church. Thus, he instructed his congregants not to use face masks, encouraging in-person Christian meetings and mode of prayers that objected to the physical distancing protocols promoted by health experts in fighting the COVID-19 (Liu et

al., 2020). The propagation of the religious belief that God will protect congregants even if they do not follow the preventive protocols against the COVID-19 resulted in high positive cases of the COVID-19 among the congregants (Wildman et al., 2020). Similarly, in the West Indies, some religious leaders told their congregants that the COVID-19 was a test of their faith and a ploy by the antichrist against the church (Change, 2020). Thus, encouraging their usual in-person prayer sessions and objection to preventive protocols against the COVID-19 (Wildman et al., 2020). Aside from the religious beliefs and practices, numerous culture-led medicinal beliefs influence people to reject scientific evidence and information on the mode of infection and prevention of the COVID-19 (Yang, 2020). These culture-led medicinal beliefs are mostly based on traditional home remedies using particular herbal extracts, fruits, vegetables, and traditional medicinal practices that have had some degree of success in treating flu-like symptoms similar to the COVID-19 (Amuna, 2020). Brennen et al. (2020) as well as Khan (2020) report the popular myth of curing COVID-19 by consuming large quantities of banana, garlic, and inhaling the steam from water boiled at 26/27 temperature degrees. These religious beliefs, culture-led medicinal beliefs, and practices are contributing to the myths and misinformation or infodemics about the mode of infection and prevention of the COVID-19 (New York Times, 2020). Unfortunately, standard epidemiological models of viral spread usually don't take cultural factors such as religious ideologies, and cultural values (Wildman et al., 2020) into account. In truism, cultural beliefs cannot and must not be separated from people's knowledge and attitudes toward the COVID-19 (Coyle & Holt, 2020).

Just as scientific studies are conducted to find out the medicinal reasons associated with a pandemic outbreak, scientific probing into the cultural beliefs that influence people's behaviours toward the pandemic must also be pursued (Wildman et al., 2020). Brennen et al. (2020) warn that if left unaddressed, the cultural perspective to the COVID-19 pandemic such as religious beliefs, culture-led medicinal beliefs and values would drown credible sources for preventing the COVID-19 and mitigate public health efforts. Ignoring the cultural dimensions to health care during pandemics in history has always resulted in very fatal

consequences. For instance, the blatant rejection of the existence of the HIV/AIDS, denial of its scientific medicinal procedures and the myths and misinformation on the use of herbal remedies including garlic, beetroot, and lemon juice for its treatment, fuelled by religious and culture-led medicinal beliefs resulted in many HIV/AIDS patients, especially, thousands of mothers avoiding the antiretroviral therapies (Nlooto & Naidoo, 2016). This resulted in the unnecessary transmission of HIV/AIDS from mothers to children, killing over 300, 000 in only South Africa (Bateman, 2007). To prevent a similar situation in dealing with the current COVID-19 pandemic, Wildman et al. (2020) suggest the carrying out of scientific studies on cultural beliefs that are negatively affecting public health strategies for the diagnosis and prevention of the COVID-19. This would assist health care providers in finding creative ways of altering the thinking patterns of people who hold onto such cultural beliefs. This study investigates how cultural beliefs are influencing the attitudes and knowledge of people in Ghana, a country with a high religious climate (Adom, 2018) toward the COVID-19 modes of infection, transmission, and prevention. This study is crucial in offering insight into the cultural reasons that affect people's attitudes toward healthcare-related issues (Armenakis & Kiefer, 2007) in Ghana. This cultural knowledge on the COVID-19 can assist healthcare providers and health care agencies in Ghana in finding appropriate public health strategies that are culture-inclusive, capable of dispelling the myths and misinformation about the COVID-19.

The second thrust of the study focuses on the educational implications of the COVID-19. The education sector is one of the areas of life that has been hard-hit by the COVID-19 largely because of the extended school closures (World Bank, 2020). As of the middle of April 2020, global estimates showed that the education of approximately 1.723 billion students has been disrupted due to school closures (UNESCO, 2020). As such, how to keep education running has become a great challenge to educational institutions globally. To compensate for the education activities that may have been lost during the period of lockdown, education has been moved online (Montacute, 2020) via distance learning. Some countries have started making educational resources available on online databases and websites (World Bank,

2020). However, the successes or challenges in delivering online learning depends largely on the internet and I. C. T. infrastructure and familiarity of countries (World Bank, 2020). Among countries with lower socio-economic backgrounds, access to online resources remains a major challenge (Montacute, 2020). The low level of computer literacy and broadband penetration as well as high costs of I. C. T. support devices and internet access in developing countries in Africa (Zulkari et al., 2010) has made it difficult in deploying online teaching and learning. Teachers and instructors in Africa have to quickly find alternative interventions of delivering distance learning amidst all these challenges (Montacute, 2020). Possible remedies to these challenges might be the provision of I. C. T. Support devices, technical knowledge, and internet infrastructure by governments and other benevolent organizations to students and educators to assist them in hosting online education (Guardian, 2020). More importantly, educational institutions in countries must decide on which online teaching or emergency remote learning interventions that may be appropriate in addressing their country-specific challenges. The decision to adopt a high-technology or low-technology solutions to emergency remote learning in the COVID-19 lockdown period such as MOOCs, video teleconferencing, audio teleconferencing, radio, and TV education broadcasting (Nicola et al., 2020) must be supported by sound empirical evidence. This would ensure that the online education adopted by countries is fair to the teachers and more importantly, the students (Young-Powell, 2020). Therefore, this study investigated the challenges associated with the deployment of emergency remote learning in Ghana, the arrangements made by the Ghana government to host distance education, and recommend sound intervention strategies for emergency remote learning in Ghana.

The study pivots on two main research objectives:

1. What are the impacts of religious beliefs and culture-led medicinal beliefs and values on the misinformation and myths on the mode of infection, transmission, and prevention of the COVID-19 in Ghana?

2. What are the educational implications of the COVID-19 global pandemic in Ghana while education is moved online?

Background Information on Ghana

The study was conducted in Ghana (Figure 1). Ghana is a West African country with a considerable measure of peace and stability since its adoption of multi-party democracy in 1992 (BBC, 2018). The population of Ghana is 31, 072, 940 (BBC, 2018), with an increased life expectancy ratio due to better health care systems, nutrition, and improved hygiene practices, resulting in an increase in Ghana's share of elderly persons over sixty years, which is among the highest in West Africa (Central Intelligence Agency, 2020). Though the numbers of the country's physician, nurses and midwives do not meet the World Health Organization's minimum threshold of twenty-three doctors, nurses and midwives per 10, 000 population at almost one and over nine, Ghana's performance in terms of healthcare is commendable and better than most African countries (Cornell Policy Review, 2019). The tremendous success in the healthcare system in Ghana is a result of the introduction of the national health insurance scheme in 2003 as well as sound policies in maternal and child health care (Central Intelligence Agency, 2020). The health care delivery organogram in Ghana is similar to Ghana's governance administrative structure that follows a four-level system of national (Tertiary health care at the Teaching hospitals), regional and district (Secondary health care), sub-district and community (primary health care) levels (Addo, 2018). Though there is the need to have more healthcare facilities to help deal with high cases of medical conditions reported during a pandemic, such as the current COVID-19, the healthcare structures at the moment are not overwhelmed in its operations (Ghana Health Service, 2020). Figures 1-3 show the map of Ghana, as well as the Ashanti Region and Greater Accra Region, epicentres of the COVID-19. The figures also highlight the areas in the regions with their respective rates of confirmed COVID-19.

Methods

The study was driven in the qualitative approach with descriptive study, desk research (Travis, 2016), and document analysis (Bowen, 2009) as the principal research methods. The primary data for the study was generated via face-to-face, telephone, and video (zoom) interviews with ten health workers, two news reporters, five teachers, and twenty-one informal sector workers (Table 1).

Table 1
Data Collection Procedures, Sample and Sample Size

Primary Data	Sample	Sample Size	Secondary Data
Face-to-Face Interview	Teachers	1	TV news reports (TV3 and GH One) from 3/3/2020-16/4/2020
			Radio news reports (Ultimate FM, Love FM) from 3/3/2020-16/4/2020
	Informal Sector Workers	21	Printed and Internet News reports (My Joy Online, Ghana News Agency, News from the Presidency, Modern Ghana News) from 3/3/2020-16/4/2020
Telephone Interview	News Reporters	1	
	Health Workers	6	
Zoom Interview	Teachers	1	
	Health Workers	4	
	Teachers	3	
	News Reporters	1	
TOTAL		38	

Twenty-One out of the twenty-three face-to-face interviews were conducted before the partial lockdown directive was issued by the president of Ghana while the other two interviews were conducted during the period of lockdown. The telephone and video interviews afforded the study participants greater flexibility as they had the comfort to participate in the study from their convenient locations (Nehls, Smith & Schneider, 2015). The thirty-eight study participants were conveniently selected. This was crucial due to the Ghana government’s directive that required citizens to stay at home. These study participants were more accessible to the researcher. Their geographical proximity, availability, and readiness to participate in this urgent study validated their selection (Etikan, Musa & Alkassim, 2015). The study participants were selected from the two epicentres of the coronavirus (COVID-19) pandemic in Ghana, thus, the Ashanti Region and the Greater Accra Region (Figure 1-3).

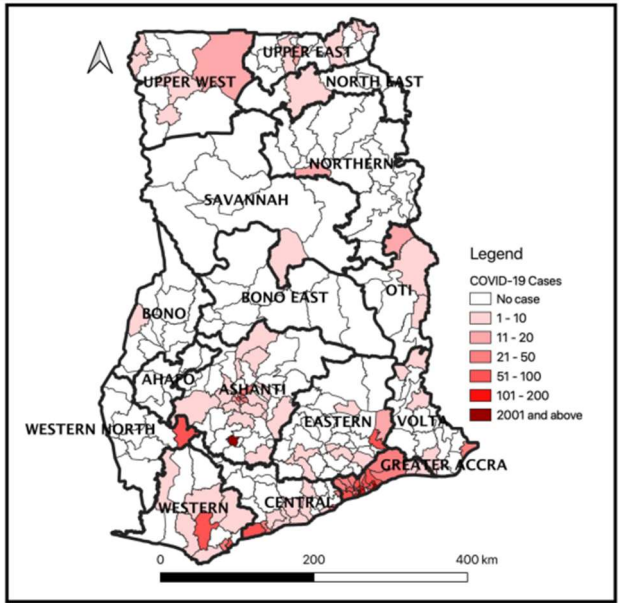


Figure 1. COVID-19 Cases by District in Ghana, March-May, 2020 (Ghana Health Service, 2020)

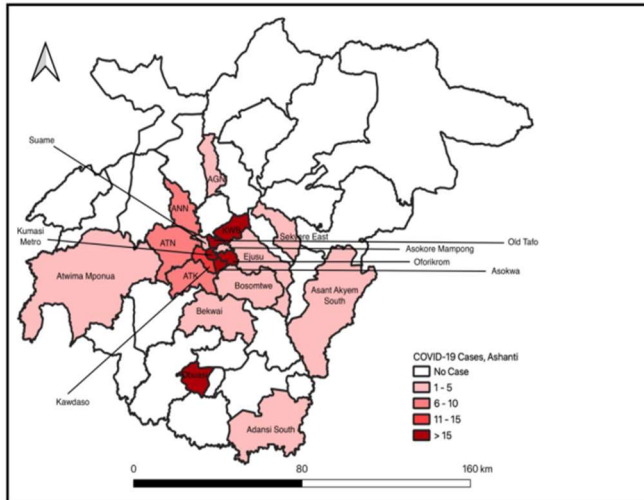


Figure 2. COVID-19 Cases by District Distribution in the Ashanti Region of Ghana, March-May, 2020 (Ghana Health Service, 2020).

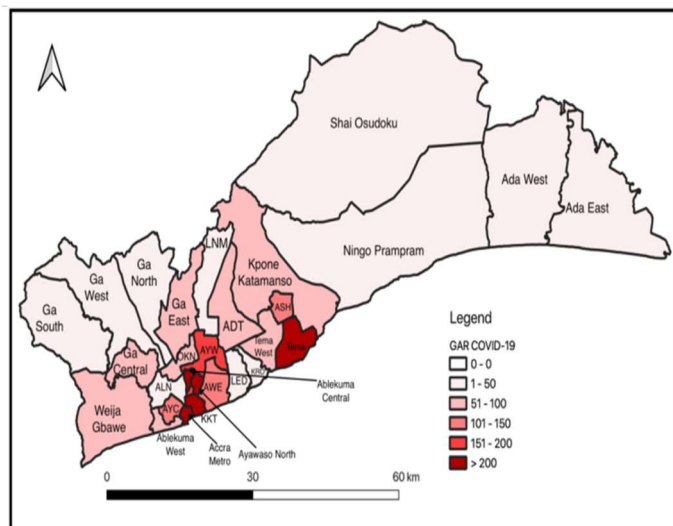


Figure 3. COVID-19 Cases by District Distribution in the Greater Accra Region of Ghana, March-May, 2020 (Ghana Health Service, 2020).

Social distancing protocols were observed during all the face-to-face interviews. The researcher and the interviewees also wore face masks during the interview sessions. Hand washing equipment as well as hand sanitizers were applied on the hands before and after the interviews to mitigate any possible infections from the COVID-19. An informed consent form was filled and signed by each of the study participants as evidence that they willingly engaged in the study without any coercion. To protect the privacy of the study participants, pseudo identification was used to treat all personal information of study participants in anonymity. The study also relied on news reports on television and radio stations as well as from print media from the 3rd of March 2020 to the 16th of April, 2020. These news reports were used to provide triangulation to increase the credibility of the findings from the primary data (Harris, 2001). Besides, they were more convenient and cost-effective in the time of the COVID-19 pandemic lockdown.

The primary and secondary data were thoroughly analyzed thematically based on the research questions for the study. After the transcription of the interviews, they were verified and validated through member checking with six selected study participants. The NVivo 10 software was used in generating the data under the two broad themes:

1. The cultural implications of the myths and misinformation on the attitudes of people about the COVID-19 modes of infection, transmission, and prevention in Ghana. Sub-categories generated were:
i) COVID-19: immune to the black gene? ii. COVID-19: a matter of faith?

2. The educational implications of the COVID-19 global pandemic in Ghana. Sub-categories included: i: COVID-19 global pandemic: a move to online education and its challenges ii. COVID-19 global pandemic: what must be done.

Results and Discussions

Cultural Implications of the COVID-19 in Ghana: Is COVID-19 Immune to Black Genes?

Many people in Ghana initially held the view that the COVID-19 infection was immune to the black genes. As a result of this misinformation, the Ghanaian people did not initially pay any heed to the news on the COVID-19 global pandemic especially, the symptoms of the infection and preventive measures. The public announcement in the early hours of March 12, 2020, of two confirmed COVID-19 cases in Ghana came as a great shock to many Ghanaians. This was just a day after the World Health Organization declared the COVID-19 outbreak as a global pandemic. The two confirmed cases were imported from Norway and Turkey. During the interactions, the researcher noted that this myth was popular among the illiterate class, especially the market women who thought the black race was blessed by God not to contract the coronavirus. One of the market women disclosed:

‘The virus is not for us, the black skin. We are immune to it. That is what I heard and I believe it because we [blacks] are blessed by God’
(MW-6, Personal Interview, 24/3/2020).

This myth is part of the myriad of misinformation about the COVID-19 in Ghana. Thus, citizens must rely on sound and reliable facts about the coronavirus from the World Health Organization and other trusted healthcare sites (Avert, 2020). The Ghana government has intensified public health education through the use of the mass media, especially radio and television stations, and mobile network operators to expose the misinformation on the COVID-19 in the country. The University of Ghana’s School of Public Health is also developing reliable information dissemination procedures to the university community and the general public on the COVID-19 in an attempt to prevent the misinformation about the virus (University of Ghana, 2020). The Ministry of Health in Ghana has created a website to give constant updates and public education on the COVID-19 (Ghana Health Service, 2020). Also, the telecommunication networks in the country circulate the emergency

communications on the COVID-19 that are zero-rated to their clients to help erase myths that prevent people from heeding to the COVID-19 preventive protocols. These great efforts by the Ghana government are laudable, as they would help in intensifying the education on the COVID-19 to the general Ghanaian populace.

Cultural Implications of the COVID-19 in Ghana: Is the COVID-19 Pandemic a Matter of Faith?

Since the emergence of the COVID-19 pandemic in Ghana, many of the Ghanaian people have held the popular view that it is a matter of faith. Some believe that God can protect His worshippers from the infection. When some market women were asked why they were not observing the social distancing precautionary measure for the COVID-19, they said God will not allow anything to happen to them. They insisted that with prayers and supplications to the Highest God, the COVID-19 cannot infect them. Again, this myth was very evident among the market women interviewed. One of the market women said:

‘I prayed before coming to work and I am sanctified by the Holy Ghost. So, I cannot be affected by COVID-19. Though I may not have the mask on, it doesn't mean I can contract the virus. God is protecting me’ (MW4, Personal Interview, 25/3/2020).

This situation is largely a result of the high religious climate in Ghana (Adom, 2018; Adom, 2016). Thus, the emergence of the COVID-19 in Ghana was tagged as a curse and a punishment by some so-called men of God (ACI Africa, 2020). They claimed that the COVID-19 in the country is because of the bad deeds of many in the Ghanaian populace (Ghana Web, 2020). The president of Ghana, Nana Akufo Addo, like many of his countrymen, believes that the intervention and blessings of God would help materialize the national plans to combat the COVID-19 infection. Thus, he declared Wednesday, March 25, 2020, as a national prayer and fasting day (ACI Africa, 2020). He called on all the leading figures of the Christian, Traditional, and Islamic faiths to instruct their followers to fast and pray to God for His assistance in fighting the COVID-19 (BBC News, 2020).

However, he cautioned that all precautionary measures to fight against the virus must be duly followed by all Ghanaians (ACI Africa, 2020). The president of Ghana holds the position that acting prudently in this manner would ensure God's protection unlike the blind religious belief that God would protect them even if they fail to observe all the preventive measures for the COVID-19 (BBC News, 2020).

The findings of the study offer practical enlightenment to health care providers, herein, the Ministry of Health in Ghana, on the need to consider the impact of the cultural backgrounds of people such as their religious beliefs, cultural values, and ideals in every health care activity pursued. In all public health interventions developed for combating the myths and misinformation related to the COVID-19, it is virtually impossible to strip off cultural knowledge (Uskul, 2010). The cultural approach to medical care will help health care providers in gaining a deeper understanding of the religious beliefs and cultural values of the people about their ideation of the COVID-19 pandemic. This knowledge will assist the healthcare providers in understanding the reasons people hold the myths of the coronavirus (Uskul, 2010). According to the socio-cultural model related to health (Armenakis & Kiefer, 2007), insights about the reasons behind people's acceptance or rejection of a medical or public healthcare-related issue is based on their differing socio-cultural backgrounds. The findings of the study showed that religious beliefs are impacting negatively on their perceptions of the mode of transmission of the coronavirus as well as its preventive measures. Also, the religious beliefs and cosmology of the people are negatively making them object to preventive protocols for the coronavirus. Thus, understanding the socio-cultural drivers of these people would help health care providers in developing sound culture-driven public health education strategy that takes into consideration, the context of local beliefs and practices. This would eventually help shape and/or correct their cultural and/or religious beliefs toward the COVID-19.

The various myths with the outbreak and preventive measures for the COVID-19 have made it very difficult for the ministries of Health and Information in collaboration with public health officers in dispensing the real facts about the COVID-19. Now, there is constant

education aimed at espousing these mistruths about the COVID-19. Two popular preventive myths for the COVID-19 in Ghana are the boosting of the immune system by consuming high aggregates of garlic, and inhaling the steam from boiled water mixed with Neem leaves or lemon. These approaches were asserted by the study participants to kill the COVID-19 virus believed to be trapped in the nostrils, the virus's purported first home for the first four days. This is a myth as the virus travels within a few minutes of infection into the lungs. One of the study participants disclosed in an interview:

'I have heard that the COVID-19 virus can be killed by inhaling the steam from Neem leaves and roots. I believe it because the Neem tree has several medicinal properties. It is traditional medicine in my family and now, I intend inhaling its steam to prevent COVID-19' (WW-3, Personal Communication, 23/3/2020).

The culture-led medicinal belief held by most Ghanaians of the potency of herbal medicine may have influenced the belief in this myth for fighting against the COVID-19 infection using extracts from plant sources such as the Neem tree, garlic, lemon, etc. Granted, these herbal extracts have been used in the manufacture of herbal medicinal products as well as home remedies in fighting common flu, cold, and malaria with some successes (Amuna, 2020). However, as at now, there are no high-quality and scholarly clinical trials of herbal drugs for the treatment of the COVID-19 reported in any internationally recognized journal (Yang, 2020). In Ghana, the Food and Drug Authority (FDA) has issued an official statement that it has not approved any clinical trial of any drug, herbal medicine, or food supplement for the treatment of COVID-19 (Business Ghana, 2020). The Ministry of Health in Ghana must take into consideration the cultural beliefs in traditional medicine, especially among the rural people of Ghana in their public health education strategies. This cultural approach to public health that takes cognizance of the cultural beliefs as purported in the socio-cultural model for health care (Armenakis & Kiefer, 2007; Uskul, 2010), would assist public health officers in knowing how to expose the misinformation of herbal medicine as a potential cure for COVID-19. The real facts of prevention such as social distancing that prevents

respiratory droplets and close contact transmission of the COVID-19 infection to others, the washing of hands regularly with soap under running water, mandatory isolations and quarantines (Liu et al., 2020) and the need to stay at home in close observation of lockdown (Hopkins, 2020) have been publicized in national and private television and radio stations in Ghana. The constant public health education in the country now is helping root out the misinformation about the COVID-19.

Educational Implications of the COVID-19 Global Pandemic in Ghana: A Move to Online Education and Its Challenges

The COVID-19 pandemic has caused the cessation of all forms of physical interaction between teachers and students. This has been a big blow to the global education sector as the popular traditional form of interaction where the teacher stands and delivers the teaching and learning activities in the classroom cannot be used. The global lockdown of educational institutions would cause a wreck in students' learning and assessments (Bjorklund & Salvanes, 2011). Many global communities have been taken by surprise as they never envisaged that online teaching and learning approach would overtake the traditional classroom (face-to-face) teaching during pandemics like the COVID-19 pandemic. Many countries do not have robust systems for the delivery of online teaching and learning. In the case of Africa, the poor, unstable, and high cost of the internet infrastructure, as well as the absence of appropriate technological devices among the greater section of the population, makes it very difficult to host online teaching and learning (World Bank, 2020). Many teachers and students who are not technologically knowledgeable might have to learn to cope with the new online instruction (Mohammed, 2020). Similar sentiments were expressed by the teachers interviewed:

‘I have not had any class online before. I am used to the traditional face-to-face mode of instruction. This new system of learning proposed by the Ministry of Education will be very difficult for me. It has come to stay so I have to quickly learn from my other colleagues’ (TT-PI, Personal Communication, 31/3/2020).

‘I am thinking of the stability of the internet connections in Ghana to deploy online teaching as well as the costs in buying internet data which is very expensive. The sustainability of this new arrangement, to me, is uncertain as few students can afford to buy data to access online resources online’ (TT2-P1, Personal Communication, 30/3/2020).

Despite these daunting challenges, Ghana as a country does not have any option than to make arrangements for online teaching and learning. Ghana is a country that has adopted online teaching and learning as part of its educational machinery. Before the lockdown, the dispensation of online teaching instruction in Ghana has been centered at the tertiary level though with many setbacks such as poor access to and high cost of internet infrastructure. Also, at the pre-tertiary level, few private educational institutions have the technological and internet infrastructure to implement online teaching and learning together with the traditional classroom (face-to-face) in a blended learning approach (Mohammed, 2020).

Following the COVID-19 outbreak, the Ministry of Education in Ghana had to quickly make arrangements for online teaching and learning at all levels of education. The Minister of Education disclosed at a press briefing on 25th March 2020 that the government of Ghana has engaged a team of experts from the Ministry of Education, the National Council for Tertiary Education, the Ghana Education Service, and the Centre for National Distance Learning and Open Schooling as well as the Ghana Library Authority and the Curriculum Assessment Agents to find proactive measures in planning online instruction for students at all levels in educational institutions in Ghana (Ghana News Agency, 2020). Also, the Ministry of Education encourages educational institutions to tap the good open or free educational resources online. The minister of education has urged universities in Ghana to access the free educational resources from Open Universities especially in Britain. The Association of African Universities in collaboration with the eLearnAfrica and Wiley Education Services are now partnering with all member and non-member universities to support their migration to online instruction while helping them gain access to open education resources. Wikipedia Zero and Facebook Zero offer zero-rates on

educational resources for students and teachers which can be subscribed and used with Wikipedia and Facebook Foundations bearing the cost of data charges. It must be noted that only high-quality content for online instruction must always be selected and they must be appropriate to the learner's level of knowledge. This is very important because there is a high proliferation of poor and less quality online materials online.

The Ministry of Education in collaboration with the Ministry of Information and the Ministry of Communication is in talks with television and radio stations as well as telecommunication industries operating in Ghana on ways they can assist in deploying the online instruction to students in the form of convenient home tuition and learning. Nigeria and Rwanda have adopted a similar strategy for broadcasting school lessons via radio and educational television programs (Xinhua, 2020; Zacharia & Twinomugisha, 2020).

The Ministry of Education has targeted making good and effective use of social media platforms in delivering online instruction. However, ethically, students below the age of thirteen are not to be exposed to the use of social media (International Baccalaureate Organization, 2020). Many lecturers and teachers in the educational institutions in Ghana are making good use of the WhatsApp, WeChat, Facebook, Instagram Live, and other social media sites for their online teaching and learning activities. Telecommunication companies in Ghana have also offered lecturers free internet packages to deliver online instruction to learners. To a larger degree, the government has partnered with the Telecommunication companies to zero-rate education content. This would make it easy for students to be able to access them free of charge.

Educational Implications of the COVID-19 Global Pandemic in Ghana: What Must be Done

The World Bank (2020) admonishes countries to utilize radio and television stations for delivering teaching and learning activities because they are fast and efficient means for delivering teaching content to learners who may have challenges with digital technologies and internet infrastructure. Ghana must skilfully utilize education broadcasting to deliver tuition to especially pre-tertiary students who

may not have access to I.C.T. resources that support online learning. The teachers interviewed supported this initiative. One of Senior High School teachers interviewed admitted:

'The majority of our students [referring to SHS students] do not have access to android mobile devices that can host online teaching. More so, if the few who have them may not have the financial strength to pay for the high internet costs. I think well-developed TV and radio education programs broadcasted on national TV and radio stations are cost-effective and can reach the greater section of pre-tertiary students in Ghana' (TT-1, Personal Communication, 22/3/2020).

These educational broadcasting platforms must be very engaging and interactive allowing the audience to respond to questions and exercises. Experts in various subject areas could run synchronous and asynchronous lessons on the radio and television stations. The content taught must be based on the curriculum with the learning opportunities corresponding to the educational objectives (World Bank, 2020) for the respective academic levels. The use of these mediums of delivering online instruction is more appropriate for the basic and senior high school learners. However, for the early childhood level, edutainment programs are more fitting to promote learning. Also, the content must be based on accepted textbooks for each educational level vetted by subject experts. The theory of Load Reduction Instruction must be applied in making online content more engaging. This theory postulates that shorter content must be delivered to fewer students at one time so that they will not be overwhelmed. Long recordings of online content would discourage many of them from watching these educative programs as they will feel bored. Teachers must always select learning management tools that support the use of low bandwidth that allows online content to be downloaded and converted into digital formats so that they can be put on various supportive devices for use.

On the other hand, there are many online learning management systems and tools that can be used for delivering online instruction in tertiary institutions in Ghana. These include Google Classroom, Zoho, Dropbox Paper, WordPress/Drupal, FlipGrid, InsertLearning [Collaborative writing in preparing the content for the online

instruction]; Zoom meetings, FaceTime, Microsoft Teams, YouTube [Video Chatting and Conferencing]; Moodle, Opigno, Edmodo, GeckoLife, Family Wall, Merlot [Interactive Learning Tools]; Easypolls, SurveyMonkey, TypeForm [Quizzes, Polls, and Surveys]; Piktochart, SlideShare [Multimedia Presentations]; PhET Interactive Simulations, National Geographic Kids, The World's Future [Games and Simulations] and many others. In Ghana, some of the tertiary institutions are using their existing learning platforms such as Sakai, Edmodo, Schooling amongst others for delivering online instruction to their students. There are many free intelligent tutoring systems such as Gnu Tutor, Auto Tutor, X tutor, Edu Tutor, and others that could be used in carrying out online instruction, especially those that involve practical activities. Virtual science labs, galleries, and physical simulations are made possible on many of these free intelligent tutoring systems (Munawar, Toor, Aslam & Aimeur, 2019). What is required most is how to skilfully and appropriately deploy these online resources to maximize students' learning outcomes. Education experts and lecturers must always ensure that these online learning tools and platforms are made available on several operating systems and software for diverse digital media, especially, mobile devices which are more accessible to the majority of students in the tertiary institutions in Ghana. The IT experts in every tertiary institution can assist lecturers in uploading their content onto these platforms while addressing all the technical issues regarding their wider visibility and use by students.

Also, in the dispensation of the online instruction, teachers and lecturers must ensure that appropriate and timely feedback is given to students. This can be done through class group chats, emails, text-based chats such as SMS, video blogs, live video chats, and discussion with teachers and peers. Some of the learning management systems have an automatic feedback system for online quizzes conducted after the online instruction (International Baccalaureate Organization, 2020). The active monitoring of the delivery of online instruction by teachers is important so that students would not turn their attention to other distractive online activities such as the playing of games, responding to the messages of friends and relatives, etc. It would also motivate

students to keep pace with the instruction delivered by the teacher as they receive timely, prompt, and real-time feedback on their online participation in the teaching and learning activities.

The education experts who are planning online instruction must be innovative, creative, and resilient in their approach ([International Baccalaureate Organization, 2020](#)). These qualities would help them to select appropriate resources and learning management systems for students. However, as a long term solution to the challenges in deploying online tuition and emergency remote learning systems, the Ministry of Education in Ghana must plan for the recreation of a robust educational ecosystem in all the educational levels in Ghana that supports the deployment of blended teaching and learning approaches as is been pursued by South Africa ([Olivier, 2020](#)). This would ensure the smooth delivery of online teaching when the traditional face-to-face delivery of education in the future is interrupted by any form of state emergency.

Conclusion

This study has shown the experiences of Ghana toward the emergence of the COVID-19 pandemic. The popular view held by many Ghanaians was that the virus was immune to the black gene. As such, information on the COVID-19 was not given priority by the larger population because it was labeled as a punishment to the white blood who colonized and oppressed the poor black people. After accepting the painful truth that the virus is not immune to the black gene, the traditional cosmology of the Ghanaian people that postulates that the highest God can protect people from the COVID-19 if they live righteously has spread rapidly. Many in the Ghanaian populace, especially among the illiterate class, blatantly ignore precautionary measures for the COVID-19 hoping that God will protect them. The intensive public education by the collaborated efforts of the ministries of information, communication, health, and education is gradually eroding these myths and misinformation about the COVID-19. The development of a culture-driven public health care intervention for the COVID-19 by the public health care machinery of the Ghana Health

Service is crucial in understanding the socio-cultural variables of Ghanaians such as religious beliefs and culture-led medicinal beliefs concerning the misinformation regarding the infection, prevention, and cure of the COVID-19.

Also, the main challenges to online education in Ghana have been the lack of technical-know-how to deploy online tuition on the part of some teachers and students, the high cost of the internet infrastructure, and the absence of appropriate digital technologies that would make online learning possible. The recreation of a robust educational ecosystem in all the educational levels in Ghana that supports the deployment of blended teaching and learning approaches should be adopted in Ghana. As the country's hope rests on minimizing the spread of the infection, regular sensitization campaign on the precautionary measures to prevent the COVID-19, including the best ways of using the approved PPE, together with the constant washing of hands with soap under running water, using more than 60% alcohol-based hand sanitizers, maintaining social distancing and staying at home protocols should continue to be a priority. These would be the best arsenals to combat the COVID-19 global pandemic and mitigate its spread in Ghana.

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