

Assessment of Lecturers' Compliance Rate with COVID-19 Safety Protocols Using Innovative Educational Teaching Technologies in Universities in Cross River State

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Abstract

This study assessed lecturers' compliance rate with covid-19 safety protocols using innovative educational teaching technologies in universities in Cross River State. The survey research design was adopted for the study. The population of the study was the entire 2,356 academic staff of University of Calabar and Cross River University of Technology. Simple random sampling technique was used to draw 353 (15%) of the entire population as sample for the study. Four research questions were developed to guide the study. The instrument for data collection was a close ended questionnaire designed by the researchers. The questionnaire was titled Lecturers' Compliance Rate with Covid-19 Safety Protocols Using Innovative Educational Teaching Technologies Survey (LCRCSPUIETTS). The instrument was validated by three experts drawn from Educational Management and Measurement and Evaluation Departments, all in University of Calabar. The instrument has a reliability of .75-.85 ranging using Cronbach's alpha Method. Data collected were analysed through simple percentages. The findings revealed poor rate of lecturers' compliance with COVID-19 protocols amongst others. However, a greater proportion of lecturers adopted social media and e-mail as alternative mediums for teaching and communication to reduce direct contact and clustering of large number of students in classes. It was therefore recommended that management should establish task force to ensure the sustained implementation of safety protocols to curb the menace of COVID-19 as well as forestall the potential outbreak of life threatening diseases in the near future.

Keywords: Lecturers, COVID-19, safety protocols, technologies, universities.

Introduction

The novel Corona virus disease (COVID-19) first appeared in Wuhan City of Hubei Province in Central China. The COVID-19 virus causes acute illness in man and leads to death especially, among the aged, if left without prompt and adequate medical attention. The virus poses serious danger to human life due to its devastating effect on the respiratory tract resulting in fever, cough, and shortness of breath, pneumonia, severe acute respiratory syndrome, kidney failure and death in extreme cases (Leung, et al., 2022; Alliza-Gbettor et al., 2023). It is transmitted from infected persons to others through the close contact of eyes, mouth and nose with infective droplets. Transmission can also occur through direct contact with infected person(s) or indirect contact with surfaces in the immediate environment or with objects used by infected persons (World Health Organization [WHO], 2020). Due to its fast transmission potential; the virus has spread across almost all countries of the world except for 18 countries located in islands with zero reported cases of the virus at the moment (WHO, 2021). The global report by WHO as at 29th September, 2021 shows that there have been 233,950,634 total reported cases of COVID-19, with 4,786,439 deaths and 210,750,116 recovered from the virus.

The COVID-19 pandemic has therefore infected millions of people globally resulting in dramatic increase in morbidity and mortality. Consequently, the World health Organization declared the virus as a pandemic and a public health emergency of international concern in March 11, 2020

(Cucinotta & Vanelli, 2020). The pandemic seriously disrupted global, and national economies with devastating effects on all spheres of human existence. It completely altered individual and general approaches to social, religious, educational, political and cultural activities within a short space of time. The International Health Regulations Committee (IHRC, 2020) urged all countries to prepare for the containment of COVID-19 through active surveillance, early detection, isolation, case management, and contact tracing. Therefore, every country around the world prepared and responded to the pandemic in different ways (Joshi, 2021).

The first confirmed case of the virus in Nigeria was announced on 22nd February, 2020 in Lagos. This figure fast rose to 22,2020 confirmed cases in the same year Nigerian Center for Disease Control (NCDC, 2020). Therefore, the government adopted broad measures to cushion the effect of the pandemic on the lives of Nigerians as well as prevent its spread. Some of the measures adopted include complete lockdown of the country, closure of all schools, cash transfer, CBN stimulus package, food assistance and a set of protocols guiding individuals, public, private, religious, political, cultural, educational organizations and institutions' operations. The lockdown measure lasted for about six months with severe consequences on the country's economy and education system as a whole was not left out. The situation required new approaches to human activities particularly in schools including universities. Therefore, in many organizations, traditional methods were gradually replaced with the new normal method that comply with the established safety protocols. Regrettably, many Nigerian universities failed to quickly adjust and adapt to the new methods of service delivery which heavily depends on modern technologies. All academic activities in Nigerian public universities were completely shut down due to lack of modern instructional technologies to facilitate learning (Omorobi, & Eton, 2020). While the government lifted the lockdown with a set clear cut protocols; organizations had to strategically rethink their business processes to embrace the post pandemic way of work in line with government protocols (Forbes, 2021).

The Cambridge English Dictionary defines protocol as a set of rules, official procedure or system governing affairs of state or diplomatic occasions. Therefore, COVID-19 protocols are rules, guidelines, procedures or state principles prescribing the manner and method of conducting business, religious, educational, political and cultural activities during and after the pandemic. NCDC (2021) outlined some protocols for all citizens and organizations to prevent the spread of COVID-19. They include:

1. regular and thoroughly washing of hands with soap under running water or use of alcohol-based hand sanitizer;
2. avoid touching of eyes, nose and mouth with unwashed hands;
3. avoid shaking hands, hugging and any other forms of physical contact where possible
4. Staying at home when feeling ill with fever, cough or breathing difficulties;
5. covering of your nose and mouth with your bent elbow or tissue when you coughed or sneezing;
6. remaining in self-isolation for 14 days, if you have just returned from China, Japan, Italy, Republic of Korea, Iran, France, Germany, and Spain.
7. provision temperature scanners for temperature screening at entry points. People with symptoms such as cough and has fever should not be allowed into the school premises.
8. reinforcing messages on hand and respiratory hygiene and staying safe.
9. provision of adequate hand washing facilities including running water, soap or alcohol-based hand sanitizer and
10. adequate human resource who will be responsible for cleaning and disinfecting communal places.

Nwagbara et al. (2021) observe that compliance to COVID-19 WHO protocols is low within Sub-Saharan African countries. This attitude could result to mass transmission of the virus on campuses. Observation shows that immediately campuses were open for academic activities nationwide, there seem to be little or no adjustment to the new normal. After the lift of the six months lockdown, the fourth wave and deadliest delta variant of COVID-19 was announced by the Nigerian Center for Disease Control. This is dangerous for universities considering the general conditions of our physical facilities and overcrowding on campuses. Therefore, academic staff are expected to observe COVID-19 protocols regarding the use of personal protective equipment PPE, respiratory hygiene, public gatherings COVID-19 protocols and the use of COVID-19 prevention equipment. The U.S Food and Drugs Administration (USFDA, 2020) has identified PPE as a critical component in reducing the spread of COVID-19. They include items which when properly worn, help protect the individual from illness and injury arising from physical, chemical, or biological hazards. PPE is particularly important to individuals who are at high risk for exposure to COVID-19. PPE helps minimize the spread of COVID-19 from one person to another when properly combined with other infection control practices such as hand washing, use alcohol-based hand sanitizers, and covering coughs and sneezes (Alao, et al., 2020).

Similarly, WHO (2020) observe that by following good respiratory hygiene you protect the people around you from viruses that cause colds, flu and COVID-19. Respiratory hygiene require some practices such as regular and thorough hands washing with either an alcohol-based hand rub or soap and water; covering mouth and nose with bent elbow or a tissue when you cough or sneeze; disposal of used tissue into closed bin; cleaning and disinfecting regularly touched surfaces frequently, such as door handles, faucets and phone screens. The classroom constitute a reasonable public gathering where students converge from different homes and networks therefore lecturers must put in place measures to prevent a possible spread of COVID-19 within the class through compliance to protocols regarding public gatherings such as provision of waste bin, hand washing equipment at class entrance, temperature checking equipment, ensuring social and physical distancing among students, and ensuring that students wear their nose mask properly (NCDC, 2021).

Effective compliance with COVID-19 protocols in schools requires the integration of modern instructional technologies for teaching and learning. According to Osim (2017), the world is getting technologically advanced, therefore, education, like other facets of the economy has to make efforts to fit into the digital world. Educational instructional technologies are those digital facilities employed by the teacher to facilitate teaching by electronic means either within a classroom or at different locations and time. This includes phones, laptops, internet, social media, public address system etc. Kubacka (2015) observes that ICT is an important tool for advancing 21st century learning due to its capacity to enhance students' skills for lifelong learning when effectively deployed for students' project or class work.

Unfortunately, Omorobi and Effa (2018) found among other things that, many Nigerian universities lack basic ICTs and relied on face to face physical classroom interaction for teaching and learning. Several factors militate against the application of digital facilities in enhancing instructional delivery among public universities in South-South, Nigeria. This include lack of digital literacy by academic staff, inadequate digital facilities, poor power supply, and poor internet connectivity among other (Omorobi et al., 2021). Abraham (2015) investigated the level of ICT integration in teacher training in National Teachers' Institute (NTI) study centers in

Rivers State. It was revealed that integration of ICT devices for lecture delivery and students' self-study was very low. This is worrisome because effective compliance to COVID-19 protocols might be impossible in densely populated campuses without the intervention of ICTs. Hence, this study focused on lecturers' compliance rate with covid-19 safety protocols using innovative educational teaching technologies in universities in Cross River State.

Statement of the problem

The outbreak of COVID-19 brought various health hazards and economic setback in the world at large and Nigeria in particular. In a bid to stem down the spread of the disease, the Center for disease control came up with a number of safety protocols to be observed by members of the society while the COVID-19 pandemic lasted. It was based on these measures that schools were reopened to continue academic activities after six months of closure. Therefore, school management, lecturers and students are expected to judiciously observe these protocols to avoid further spread of the virus.

Compliance with COVID-19 protocols can be enhanced by the extent of awareness and availability of certain essential tools. Regrettably, there has been exponential increase in student population without corresponding expansion of school facilities before the COVID-19 outbreak. This explains why lecture rooms were and is still crowded. It is expected that besides adherence to protocols like wearing of face mask and frequent washing of hands, social distancing should be observed. This is almost impossible with overcrowded classrooms. Therefore, adopting innovative teaching and learning procedures through the use of emerging technologies becomes imperative. Regrettably, many schools which promised virtual teaching methods at resumption of academic activities still adopted traditional teaching methods with defiance to COVID-19 protocols. Both lecturers and students lamented the lack of the needed innovative tools, volatile power supply, and access to internet as major hindrance to virtual teaching-learning processes.

Despite initial efforts by school authorities to provide hand sanitizers and ensure compliance with the use of nose mask, there seemed to be poor compliance with the COVID-19 safety protocols. It is consequent on this that the researchers were poised to investigate lecturers' compliance rate with COVID-19 safety protocols using innovative education teaching technologies in universities in Cross River State, Nigeria.

Purpose of the Study

The main purpose of the study is to evaluate academic staff compliance rate with COVID-19 protocol using innovative educational teaching technologies. Specifically, the study investigated:

1. Academic staff compliance rate with use of personal protective equipment PPE
2. Lecturers' compliance rate with respiratory hygiene related protocols
3. Lecturers' compliance with public gathering COVID-19 protocols
4. Lecturers' rate of utilization of innovative educational teaching technologies.

Research Questions

The following research questions were developed to guide the study:

1. What is the rate of academic staff compliance with use of personal protective equipment PPE?

2. What is the extent of lecturers' compliance with respiratory hygiene related COVID-19 protocols?
3. To what extent does lecturers' comply with public gathering COVID-19 protocols?
4. What is the rate of lecturers' utilization of educational teaching technologies?

Methodology

The focus of this study was assessment of lecturers' compliance rate with covid-19 safety protocols using innovative educational teaching technologies in universities in Cross River State. The survey research design was adopted to guide the investigation. The rationale for adopting survey research design is because the investigated phenomenon was on-going in both campuses as at the time of investigation and the researcher barely used survey questionnaires to collect data and report related incidences surrounding the phenomenon. Four research questions were developed to guide the study. The population of the study were the entire 2,356 academic staff of University of Calabar and Cross River University of Technology, Simple Random sampling technique was used to draw 353 (15%) of the entire population as sample for the study. The instrument for data collection was a close ended questionnaire designed by the researchers. The questionnaire was titled Lecturers' Compliance Rate with Covid-19 Safety Protocols Using Innovative Educational Teaching Technologies Survey (LCRCSPUIETTS). The instrument was divided into two sections; section 1 contained information on lecturers' bio data while section 2 contained items on a modified four point Likert scale questionnaire. Four sub-scales were used for the four variables of the study. They include: lecturers' compliance with use personal protective equipment PPE; lecturers' compliance with respiratory hygiene related COVID-19 protocols; Lecturers' compliance with public gathering COVID-19 protocols in class and lecturers' use of innovation educational teaching technologies. The instrument was validated by three experts drawn from Educational Management and Measurement and Evaluation, Educations foundations departments, in University of Calabar. The reliability of the instrument was established using 20 academic staff from University of Uyo. The Cronbach's alpha method was used, and the instrument yielded alphas ranging from .75-.85 for all four variables of the study. Data was collected for the study through administration of the questionnaire to the sampled lectures by the researchers and two trained research assistants. The data collected was analysed using percentages.

Results

Research Question one: What is the rate of academic staff compliance with use of personal protective equipment PPE?

Table 1

Percentage Analysis of the Rate of Lecturers' Compliance with use of Personal Protective Equipment (PPE)

Items	N	Agree	Disagree	Remark
1. Use face mask	353	150(42%)	208(58%)	Low
2. Use of gloves in class	353	45(13%)	308(87%)	Low
3. Use of face shield in class	353	57(16%)	296(84%)	Low
4. Use of safety spectacles in class	353	49(14%)	304(86%)	Low

The result on table one indicates that a higher percentage of lecturers did not ensure compliance with the use of all the identified PPE namely, for face mask 58%, for use of gloves 87%, for

face shield 84%, and for use of safety spectacles 86% of lecturers respectively did ensure students compliance. This implies that lecturers' efforts towards ensuring compliance with the use of PPE was low.

Research Question 2: What is the extent of lecturers' compliance with respiratory hygiene related COVID-19 protocols?

Table 2:

Percentage Analysis of Lecturers' Compliance with Respiratory Hygiene Related COVID-19 Protocols

Items	N	A	D	Decision
1. Ensure that students wash hands before entry into classroom	353	149(42%)	204(58%)	Low
2. Provision of alcohol based sanitizers for students in class	353	120(34%)	233(66%)	Low
3. Covering nose and mouth with tissue when coughing in	353	260(74%)	93(26%)	High
4. Provision of waste receptacle to dispose of tissue after use in class	353	248(70%)	105(30%)	High

The results on table 2 show that a greater proportion of sampled lecturers did not ensure observation of respiratory hygiene. Specifically, about 58% did not enforce hand washing practice and 66% of lecturers did not ensure availability alcohol based sanitizers at class entrances. On the other hand 74% of lectures were found to ensure compliance with covering nose and mouth when sneezing and 70% of lecturers ensured availability of waste receptacle in class for disposal of tissue after use. Therefore, rate of lecturers' efforts at ensuring compliance with respiratory hygiene was not high with regards to regular hand washing and use of alcohol based sanitizers. However, their compliance was high in terms of covering of nose and mouth as well as ensuring availability of waste receptacle in classrooms.

Research Question three: 3. To what extent does lecturers' comply with public gathering COVID-19 protocols?

Table 3:

Percentage Analysis of Lecturers' Comply with Public Gathering COVID-19 Protocols

Items	N	A	D	Decision
Ensure social distancing in class	353	72(20%)	283(80%)	Low
Ensure students temperature is checked be entrance into class	353	45(13%)	308(87%)	Low
Ensure that students wear nose mask in classroom	353	100(28%)	253(72%)	Low
Make sure hand washing facilities at the entrance of classrooms	353	113(32%)	240(68%)	Low

The result on table 3 indicates that a higher percentage of lecturers did not comply with COVID-19 protocols for public gathering. Specifically about 80%, 87%, 72%, and 68% of the entire sampled lecturers did not ensure compliance with social distancing, checking of body temperature, use of nose mask, and provision of hand washing facilities respectively before

admitting students in classes. It therefore follows that, the rate of lecturers' efforts to ensure compliance with COVID-19 protocols at public gathering was not high.

Research Question four: What is the rate of lecturers' utilization of educational teaching technologies?

Table 4:

Percentage Analysis of Lecturers' Utilization of Educational Teaching Technologies

Item	N	A	D	Decision
Utilization of social media platforms to teaching	353	266(75%)	87(25%)	High
Use Google forms to teaching	353	50(14%)	303(86%)	Low
Use of e-mail for sending and receiving students' assignment	353	209(59%)	144(41%)	High
Use of public address system for large classes	353	153(43%)	200(57%)	Low

The result on table 4 indicates that a higher proportion of lecturers did not utilize some innovative educational technologies, since about 86% and 57% of lectures disagreed to the utilization of Google forms and public address system respectively. Meanwhile, about 75% and 59% of lecturers strongly agreed to utilization of social media and e-mail respectively.

Discussion

The first finding of study reveals that a higher percentage of lectures did not bother about ensuring compliance with the use of personal protective equipment in class such as, face mask, hand gloves, face shield and safety spectacle for prevention of the spread of COVID-19. The direction of this finding is probably due to the few number fatalities directly linked to the virus in Nigeria. This is because, comparatively only 553 deaths were traced to the virus across Nigeria as against millions fatalities recorded worldwide (NCDC, 2020). Therefore, many persons underestimated its devastating impact; and somehow doubt the reality of its existence. This has reportedly culminated in vaccine hesitancy among many Nigerians (Iliyasu, et al., 2021); and general reluctance to comply with safety protocols unlike in places like China, America, United Kingdom. This disposition was in tandem with the findings of Aiyewumi and Okeke (2020) that many average Nigerians held the misconceptions that the virus was either a complete hoax, that Nigerians are immune to it or that it cannot survive in Nigeria. This public views influenced poor attitude to the virus by a significant population in Nigeria despite warning from government. Consequently, many students carryout their academic activities without fear of being infected of the virus. Thus, they use PPE sparingly on campus and only at designated points of entry where it is mandatory.

The findings of the study is in tandem with the results of Ethiopia et al. (2020) that although, schools had posted written materials promoting hand washing and use of nose mask, but overall compliance level with COVID-19 preventive and control measures among universities was very poor. Adversely, the finding is at variance with the findings of Okoye et al. (2021) that there was high availability and utilization of facemasks and hand gloves for the Nigerian physiotherapists during the period of COVID-19 pandemic in the different health facilities. This could be attributed to the health facilities and personnel common places for easy outbreak and as such are

provided with sufficient PPE and operated with strict principles to avoid outbreak and an increase in death toll. However, Omorobi et al. (2021) observed a drastic decline in the use of PPE and adherence to COVID-19 protocols in University of Calabar few months after the lockdown.

Secondly, the study found that there was poor observation of respiratory hygiene in terms of regular compulsory hand washing before access to classrooms and availability of alcohol based sanitizers. On the other hand, it shows that there was high compliance to covering of mouth and nose while coughing or sneezing and provision of waste receptacles in classrooms. The reason for the poor hand washing culture on campus; and the lack of alcohol based sanitizers can be attributed to the fact that, many lecture halls and public offices on campuses and libraries that should be provided with hand washing facilities and sanitizers at the entrance were not provided with this facilities. Similarly, staff are not assigned to man entrances to ensure staff and students wash their hands before accessing offices and classrooms. Another finding of the study revealed poor compliance with all the indices of COVID-19 protocols for public gatherings. This include social distancing, checking of body temperature before allowing students and staff access to classroom and offices, nose mask and placement of hand washing facilities.

The result is in line with the observation of Omorobi, Emu and Etim (2021) that there was a noticeable decline the use of PPE and adherence to COVID-19 protocols in University of Calabar few months after the lockdown. Similarly, Nwagbara et al. (2021) found poor compliance with COVID-19 WHO protocols within Sub-Saharan African countries. However, the high compliance observed in terms of covering mouth and nose while sneezing and the provision of waste receptacles for disposal of used tissues is explainable by the fact that university students are mature individuals with high sense of self-worth. Therefore, ideally cover up their mouths and nose while sneezing in public even before the pandemic which makes the practice not strange at all. Similarly, waste receptacles are ideal university classroom facility used to empty waste produced by activities of students and staff in class for purpose of convenience. Another finding of the study indicates poor compliance to all the indices with COVID-19 protocols for public gatherings. This include social distancing, checking of body temperature before allowing students and staff access to classroom and offices, nose mask and placement of hand washing facilities.

Finally, it revealed that a reasonable population of academic staff used social media and e-mail as means of instructional delivery and communication links for giving out course materials and submission of assignments. The rationale for this is to reduce physical contacts and gathering large number of students. Whereas, Google forms and public address systems were less utilized for instructional delivery. These findings was corroborated by the observation of Omorobi et al. (2021) that ICT and particularly social media became the most reliable alternative for facilitating teaching and learning during the pandemic.

Conclusions

Based on the strength of the findings of the study, it was concluded that despite the impressive rate of lecturers' utilisation of innovative educational teaching Conclusions technologies to reduce direct contact with students and clustering of large crowds of students as a measure of transmission control; the level of academic staff academic staff compliance with COVID-19

protocols was acutely low. This is dangerous for the university campus community given the diversity of its population drawn across different states of the federation and beyond, most of whom migrate from areas that are highly prone to the virus as this could result in an overwhelming outbreak of the delta variant of the virus if this attitude continues.

Recommendations

The following recommendations were made for the study:

1. Management should procure more personal protective equipment for staff and students use.
2. Hand washing facilities and alcohol based sanitizers should be made available at entrances to offices, libraries and classrooms
3. Schools should constitute COVID-19 taskforce to routinely embark on campus surveillance to check for compliance with COVID-19 protocols.
4. Conditions that enhance the use of technology for teaching such as poor supply, internet access and ICTs should be made readily available for both staff students use.

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