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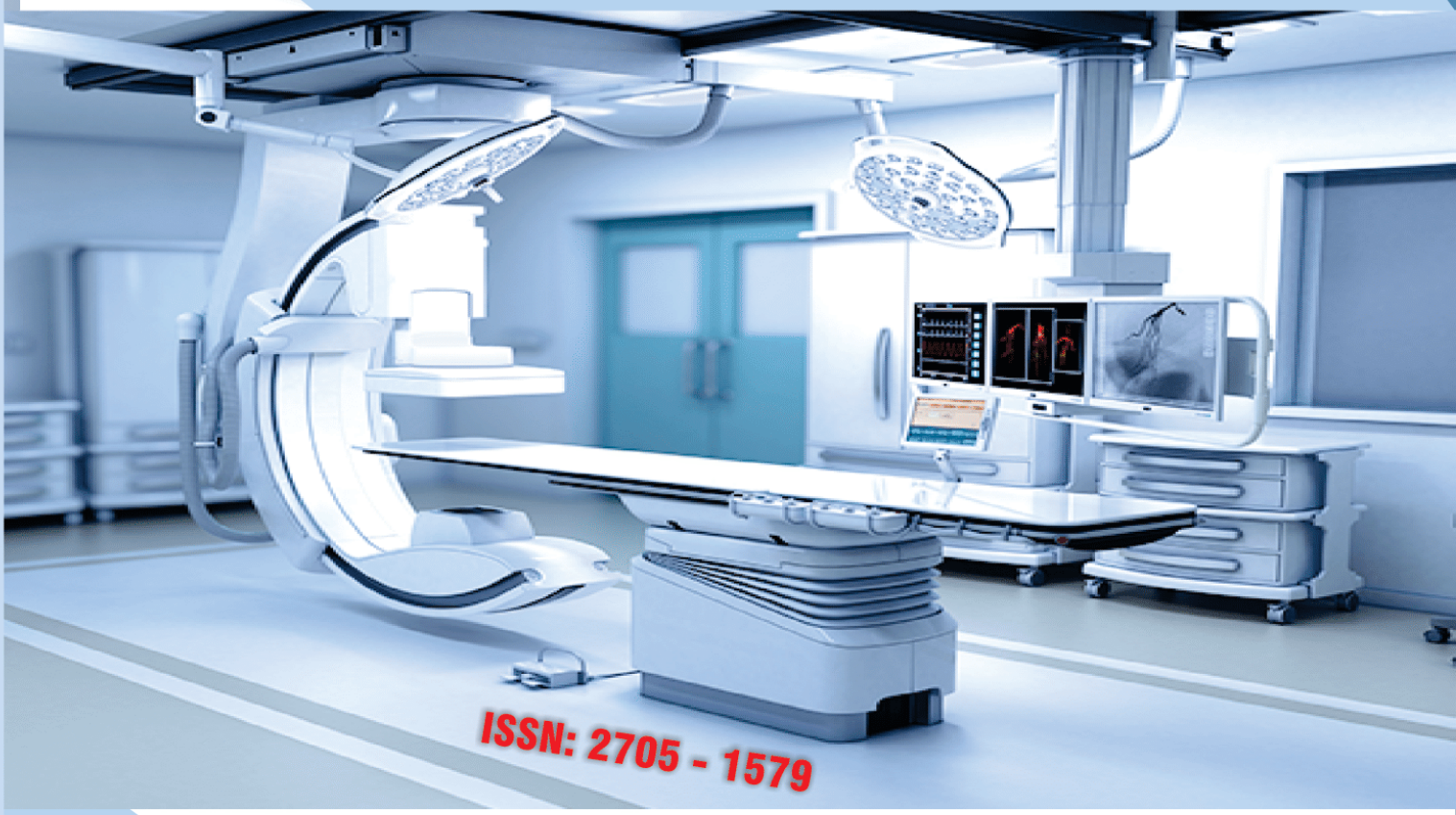

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EDITORIAL

The task of effectively applying Science, Technology, Engineering and Mathematics (STEM) education research of utmost importance to STEM educators and other stakeholders, even the survival of any nation depends on the sustainability of its STEM education programme.

Currently, we are facing the challenges of COVID-19 pandemic. Our country Nigeria did not anticipate such disease and as such caught up with the pandemic. Hence the un-preparedness of our nation led to the closure of public places including schools.

Therefore, Science Teachers' Association of Nigeria (STAN) Anambra State Chapter dedicated this 2nd Biennial State conference hold on decencies 8th-9th, 2021 at Federal Science and Technical College, Awka, Anambra State, Nigeria to COVID-19 and Emerging issues in STEM Education.

The editorial board had welcomed our members whose papers - articles were extracted from conference.

Happy Reading.

Prof. Rita N. Nnorom
Editor-In-Chief

KNOWLEDGE AND ATTITUDE OF SECONDARY SCHOOL STUDENTS TOWARDS THE OBSERVANCE OF COVID-19 PROTOCOL IN NJIKOKA LOCAL GOVERNMENT AREA OF ANAMBRA STATE.

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Abstract

The COVID-19 is the most current public health problem around the world as the disease has affected most countries of the world and no scientific approved medicine for the treatment of this rapidly spreading disease. The only way left to this situation is to slow down or eradicate the spreading by adopting preventive measures. This study examined knowledge and attitude of students towards the observance of covid-19 protocol in public secondary schools in Njikoka local government area of Anambra state, Nigeria. Two research questions and two hypotheses guided the study. A descriptive survey research design was adopted for the study. The population comprises of 4,071 senior secondary students for the 2020-2021 academic session in Njikoka local government area of Anambra State. A sample of 200 students was randomly selected from four out of 12 governments owned coeducational secondary schools in the area. A multistage sampling technique was used to draw the sample. The instrument for data collection was a questionnaire titled knowledge and attitude of secondary school students on covid-19 protocol scale (KASS). The validation was down by three experts, the validity was done through pilot testing and co-efficient gotten was 0.85. Research questions were analyzed using mean responses while t-test was used for hypothesis. The result revealed that there was no significant difference in students' observance of COVID-19 protocol in the rural and urban areas. It was recommended that the state ministry of education should lay emphasis on the strategies for the prevention and control of COVID-19 to school administrators, and ensure adherence by the students. They should also try as much as possible to disseminate the information to the rural areas.

Keywords: Knowledge, attitude, COVID -19.

Introduction

The corona virus disease 2019 (COVID-19) pandemic in Nigeria is part of the worldwide pandemic caused by severe acute respiratory syndrome corona virus (SAR COV-2). Corona viruses are common in certain species of animals, such as cattle - camels and bats which can be transmitted to humans. The COVID-19 disease caused by this virus started in China (Lu, Zhao, Li, Niu, Yang and Wu, 2020). The disease has now spread globally, causing a significant burden on humans' health and has threatened the continued existence of human race. Though there have been series of epidemic and diseases outbreak globally, there has not been any as devastating and destructive as covid-19 pandemic.

The new corona virus has been responsible for millions of infections, and it has caused more than 2 million deaths (WHO, 2020). The mortality rate varies from country to country. Hence, leading to sudden closure of schools in order to reduce the spread. SARS-COV-2 first infected bats before spreading to other animals, including, humans. Some of the first people with Covid-19 had links to a live animal and sea food market in Wuhan China. People with a higher risk of severe Covid-19 symptoms include older adults and those with underlying medical condition, including high blood pressure, heart and lung' problems, diabetes and cancer (WHO, 2020). According to the centers for disease control and prevention (CDC, 2019), most children with Covid-19 have mild or no symptoms. Fewer children have developed Covid-19 than adult more especially children with certain medical conditions have an increased risk of severe illness and death.

The means of transmission can be through respiratory droplets produced when a person coughs or sneezes or by direct physical contact with an infected person .such as shaking of hands, this commonly spread during close (within 6 feet) person to person contact within enclosed spaces that-had inadequate ventilation. Corona virus can spread through contaminated surface by touching a surface or object that has the virus on it and then touching their own mouth, nose, or possibly their eyes. A person infected with the new Corona Virus can spread the virus to 15-35people (CDC, 2019).

Apart from human life, covid-19 has adversely affected the economic, social, political and psychological lives of the people, globally. The devastating effect of covid-19 on mankind has generated a lot of efforts by scientists all over the world to find solution to this virus. Currently, there is vaccine against COVIDI9, prevention of epidemic is not only the grand but the mere option (Heymann and Shindo, 2020 as cited Abdur and

Nusrat, 2020) After all, World Health Organization (WHO, 2020) offers the most effective preventive measures: maintain physical distance minimum 3 feet or 1 meter) from other persons; the hands must be cleaned immediately after contact with the respiratory tract; avoid touching eyes, nose and mouth frequently; regular cleaning and disinfection of environmental and other frequently touched surfaces; improve living space airflow by opening as many windows and doors as possible; fever, cough, and difficulty in breathing, seek immediate treatment (WHO, 2020). The measures adopted to prevent the spread of this virus among students include social distancing, washing of hands, wearing of a mask and use of infra-red thermometer to monitor students Temperature. All these measures' are tagged as Covid-19 protocols. The prevalence of this disease in Nigeria and other parts of the world has been a source of concern to many individuals and scholars. This could be as a result of ignorance of the people on the mode of transmission and spread.

In Nigeria, so many people do not believe on the existence of this virus while others who believe trust traditional or religion means to be free from the virus. Knowledge of a problem is said to be half solved especially in the rural areas. Students from rural areas tend to exhibit different attitude towards covid-19 protocols to their urban counterparts. Hence this study was conceived to ascertain the knowledge and attitude of secondary school students dwelling in the rural and urban areas towards covid-19 protocols.

Statement of the Problem

The rapid increase in the number of infected cases and mortalities due to the 2019 novel corona disease (Covid-19) which led to the closure of all academic Institutions including elementary secondary schools with the hope of slowing the transmission of the virus among the population. All students were advised to be at home quarantined regarding their safely. A report by the United Nation Educational Scientific and Cultural Organization (UNESCO) showed that until APRIL 2020, school functions were affected by the Covid-19 pandemic and almost 196 countries experienced nationwide closure of school but subsequently affecting almost 1.6 billon young learners. The federal ministry of health in Nigeria ordered a country wide closure of schools on March 2020 as a preventive measure in order to reduce the risk of viral transmission among the students and staff. The ministry of Basic education in Anambra state of Nigeria introduced a platform for distance learning, through teaching broadcast at Anambra broadcasting station (ABS) and use of whatapps voice teaching by various

teachers in school with their android phone. These entire program was not successful with almost 30% of them (students) being able to participate actively in the program as a result of constraints these students face in their respective homes. The absence from academic and educational environment can affect the student's behavior and emotions towards education and school attendance. Hence, students in Anambra state were asked to resume school on the 14th September 2020 with the instruction of observing preventive measures against Covid-19 viral infection. These preventive measures such as wearing of face masks, regular washing of hands and use of hand sanitizers, use of infrared thermometer to check student's temperature at the entrance of the school, and social distancing in classes.

These measures also led to the collapse of recess, general morning assembly as well as sports competitions within school; it is proposed that school should collaborate in managing, these situations by providing crises' oriented psychological support and facilities for their j students. This study was conducted to investigate the students' knowledge as well as positive and negative attitudes toward the observance of Covid-19 protocols due to Covid-19 pandemic and to evaluate its correlation with student's health factors among the rural and urban dwellers.

Purpose of the Study

The main purpose of the study is to assess the knowledge and attitude of secondary school students towards the observance of covid-19 protocol in Njikoka local government area of Anambra State. Specifically the study sought to examine:

1. The difference between the knowledge of secondary school students dwelling in the rural and urban areas towards the observance of covid-19.
2. The difference between attitude of secondary school students dwelling in the rural and urban areas towards the observance of covid-19.

Research Questions

The following were the research questions that guided the study:

1. What is relationship between students' knowledge and their attitude towards the observance of Covid-19 in public secondary school in Njikoka Local Government Area.
2. What is the difference between the knowledge of secondary school students dwelling in the rural and urban areas towards the observance of COVID-19.
3. What is the difference between attitude of secondary school students dwelling in the rural and urban areas towards the observance of COVID-19

Hypotheses

1. There is no significance difference between the knowledge of secondary school students in rural and urban areas towards observance of covid-19.
2. There is no significance difference between the attitude of secondary school students dwelling in rural and urban areas towards the observance of covid-19.

Theoretical frame work

The study was guided by health belief model as purposed by social psychologists Irwin M. Rosenstock, Godfrey, M. Hochbanm, S. Stephen Kegeles and Howad Levenmal in 1960s. The health belief model has been applied to a broad range of health behaviours and subject populations. The two components of health related behaviour are (the desire to avoid illness, or conversely get well if already ill and the belief that a specific health action will present, or cure illness. figure 1 shows, the health belief model constructs which includes perceived susceptibility, perceived severity, perceived benefits, perceived barriers, self-efficacy and cues to action.

Feeling the threatening risk of COVID-19 perceives susceptibility is the first step for preventive action. After wards, the intensity and life threatening complications of Covid-19, believing in accuracy and the benefits of the preventive programmes and the inhibitory factors of accurate behavior which have less importance than its advantages and finally performing preventive behavior which has been summarized in the figure 1.

The Health Belief Model

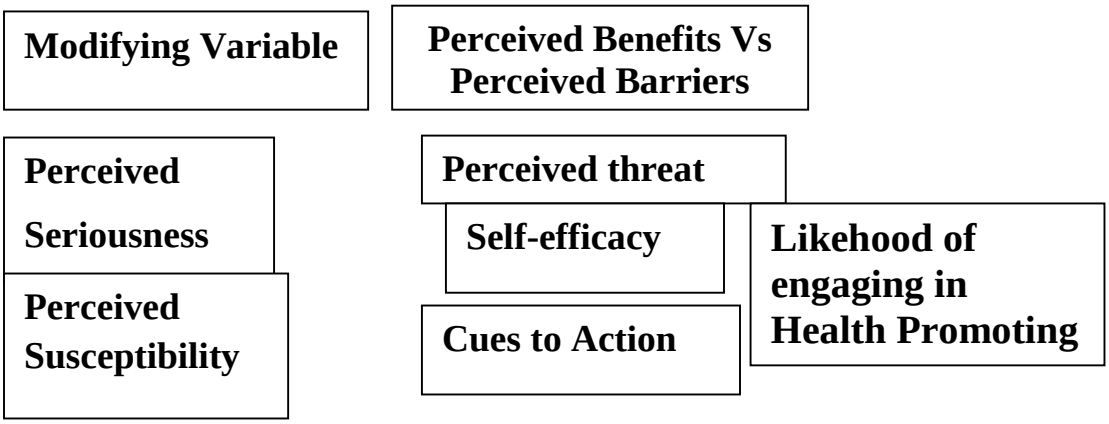

Figure 1: The health belief model of attitude of students-towards the observation of Covid-19 Protocol in public Secondary Schools in Njikoka Local Government of Anambra State.

Method

Design and Area of the Study

Based on the specific objectives of the study, descriptive survey design was used in order to gather data at a particular point in time with the intention of describing the nature of existing conditions. The study was carried out in Anambra state, south-east Nigeria. Anambra state has its capital at Awka. Boundaries are formed by Delta state to the west, Imo state and Rivers state to the south, Enugu state to the east and Kogi state to the north. Anambra state indigenes are mainly Igbos.

Population, Sample and Sampling Technique

The population of this study is made up of 4,071 secondary school students from 12 secondary schools using Njikoka local government area of Anambra State. Purposive sampling was used to select 4 public secondary schools from urban and rural areas within the local government area. While simple random sampling was used to select 50 students from each of the 4 selected schools given a sample size of 200 students.

Instrument for Data Collection

The instrument used for the study was self-structured questionnaire tagged knowledge and attitude of secondary school students covid-19 protocol scale (KASS). The instrument was made up of three sections A, B, and C, section A featured the demographic data of respondents, section B contained items generated on general views of the respondents about students' knowledge and section C is on the attitude of students towards Covid-19 observance of protocols.

Method of Data Analysis

The collected data was analyzed using mean and Pearson Product Moment correlation coefficient. Hence, the decision rule follows the mean of 2.5 and above was regarded as being accepted while less than 2.50 was regarded as being rejected. A statistical t-test was used to determine the difference in knowledge of -secondary school students in rural and urban areas.

Results

Research Question 1: What is the difference in knowledge of secondary school students dwelling in the rural and the urban areas towards the observance of COVID-19?

Table 1: Descriptive analysis of difference in knowledge of secondary school students towards their observance of covid-19 protocols among rural and urban dwellers.

	Gender	N	Mean	Std. Deviation	
Q1	Male	100	3.6000	.69631	A
	Female	100	3.3800	.92965	A
Q2	Male	100	3.5200	.71746	A
	Female	100	3.2500	.95743	A
Q3	Male	100	3.7300	.58353	A
	Female	100	3.7700	.66447	A
Q4	Male	100	3.5600	.74291	A
	Female	100	3.3500	.99874	A
Q5	Male	100	3.7300	.52905	A
	Female	100	3.6300	.71992	A
Q6	Male	100	3.6500	.67232	A
	Female	99	3.6465	.77345	A
Q7	Male	100	3.6500	.60927	A
	Female	99	3.5354	.89572	A
Q8	Male	100	3.8000	.49237	A
	Female	100	3.7600	.69805	A
Q9	Male	100	3.4100	.80522	A
	Female	100	3.3800	.92965	A

The result in Table 1 shows that secondary school students from both rural and urban areas have sufficient knowledge of the prevalence disease called covid-19, its effect and protocols. This is evident in mean response scores of all the items having 2,50 and above which is the criterion midpoint for agreement.

Research Question 2: What are the differences in Attitude of secondary school students dwelling in the rural and the urban areas towards the observance of COVID-19?

Table 2: Descriptive analysis of differences in Attitude of secondary school students' towards their observance of covid-19 protocols among rural and urban dwellers.

	Location	N	Mean	Std. Deviation	
Q10	Male	100	3.6500	.67232	A
	Female	100	3.5600	.94623	A
Q11	Male	100	3.3400	.84351	A
	Female	100	3.2400	1.04563	A
Q12	Male	100	3.2900	.80773	A
	Female	100	3.1200	1.11265	A
Q13	Male	100	1.7100	.99793	D
	Female	100	1.8700	1.17770	D
Q14	Male	100	2.9700	.96875	A
	Female	100	2.7900	1.16597	A
Q15	Male	100	3.2800	.89983	A
	Female	100	3.0700	1.09411	A
Q16	Male	100	3.3200	.88626	A
	Female	100	3.2200	1.08786	A
Q17	Male	100	1.7600	1.00624	D
	Female	100	1.9900	1.22676	D
Q18	Male	100	1.7500	.92524	D
	Female	100	1.7200	1.01583	D
Q19	Male	100	3.7800	.56102	A
	Female	100	3.6800	.83943	A
Attitude	Male	100	21.4200	3.64921	A
	Female	100	21.0200	4.16813	A

The result in Table 2 points equal agreement with both locations on the students' attitude towards observance of covid-19 protocols. This is evident in both location dwellers having equal agreement and disagreement on the items. This is evident in the students response from both location agreeing with the same seven items as their means scores of each of the item is above the criterion midpoint of 2.50 and above and equally disagreed with the three remaining items as their means scores are below the criterion midpoint of 2.50.

Hypothesis. 1: There is no significance difference in the knowledge of secondary school students in rural and urban areas towards observance of covid-19.

Table 3: t-test analysis on the knowledge of rural and urban students towards covid-19 observation.

Source of Variation		No	mean	sd	df	t-test	level of sig	
knowledge	Urban	100	36 .300	3 .047	198	1.937	.054	Not sig.
	Rural	100	35. 190	4. 855				

Result in Table 3 shows that there is no significant relationship between the attitude of students located in the rural areas and their counterparts in the urban area. This is evident in the p-value = .054 greater than the level of significant = 0.05. Therefore the researcher did not reject the null hypotheses and concluded that there is no significant difference in the knowledge of secondary schools students in urban and rural areas towards observation of COVID-19 protocol.

Hypothesis 2: There is no significance difference in the attitude of secondary school students in rural and urban areas towards observance of COVID-19

Table 4: t-test analysis on the knowledge of rural and urban students towards covid-19 observation.

	Source of variation	No	mean	Sd	df	t-test	Level of sig	
Attitude	Male	100	21.42	3.649	198	.722	.471	Not sig.
	Female	100	21.020	4.168				

In Table 4, it shows that there is no significant relationship between the attitude of students located in; the rural area and their counterparts in the urban area. This is evident in the p-value - .471 greater than the level of significant - 0.05. Therefore, the researcher did not reject the null hypotheses and concluded that there is no significant

difference in the attitude of secondary schools students in urban and rural areas towards observation of COVID-19 protocol.

Discussion

The secondary school students from the findings are sufficiently knowledgeable about the existence of COVID-19 virus. The secondary school students for the study were highly knowledgeable concerning covid-19 protocols as seen effective in the prevention of the disease both in the rural and urban areas. This is evident in high mean score of all the items in both rural and urban areas. This result negates the perception of people that the secondary school students in the urban area get information more than their fellow counterparts in the rural area.

The students have positive attitude towards the observance of covid-19 protocol as rural and urban secondary school students agree with the majority of the items on observance of covid-19 protocol. The finding negates the posit of Abdur and Nusrat (2020) who opined that people who had sufficient knowledge of covid-19 protocol has negative attitude towards covid-19 observance.

The findings also revealed that all the students agreed on the prevalence of disease called covid-19, its effect and protocols.

Conclusion

The study has been able to survey knowledge and attitude of secondary school students towards the observance of covid-19 protocol in Njikoka Local Government Area of Anambra State. The study revealed that students had the knowledge of covid-19 infections, thus, leading to the covid-19 protocol which includes the use of masks, wash hands, and use of sanitizers, practicing social/physical distancing and avoiding crowed places.

Based on the above, it can easily be concluded that the world has a long history of successful efforts to prevent or cure widespread infections.

Recommendations

The following recommendations were made based on the findings and conclusions of the study;

1. Seminars should be organized for secondary school students to enlighten them more on covid-19, mode of transmission, prevention and current information protocols.

2. Provision of wash hand basins, alcohol based sanitizers and more tables and chairs to decongest our classrooms, by the school administrators.
3. Health education on improving personal hygiene and sanitary conditions to help reduce/eliminate the virus.

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