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Assessment of the Implementation of Safe School Protocols on Coronavirus among Secondary School Students in Joe-bar, Paynesville City

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Abstract:

Background: Implementing safe school measures for COVID-19 in Liberia is essential for protecting all school-aged children from catching the virus. During this global pandemic, it is essential for the health and safety of students who are believed to be future leaders that secondary schools execute coronavirus safety practices effectively.

Methods: To achieve the research objectives, both qualitative and quantitative research methodologies were employed. During the research process, descriptive research design was utilized to determine the frequency, central tendency, and distribution of data sets. Questionnaires were utilized as data collection instruments. The collected data was analyzed using the statistical analysis tool included in Jamovi 2.3.2.

Results: Based on the data analysis and discussion, the majority of students responded positively to all data sets with mean values between 1.0 and 1.49, while the majority of students responded negatively to all data sets with mean values between 1.5 and 1.99. The majority of students responded positively to thirteen (13) of twenty (20) variables, equating to 65 percent of students who believe secondary schools adhere to the implementation of safe school protocols for coronavirus and understand the nature of the virus. Seven (7) out of twenty (20) variables had a majority of students responding 'NO', accounting for 35% of students who believe secondary schools are not implementing safe school protocols for coronavirus and do not comprehend the nature of the virus.

Conclusion: Coronavirus-related safe school protocols are essential for protecting secondary school students. It is impossible to ignore the numerous benefits that safe school protocols on COVID-19 provide to students during school hours. It is imperative that schools operate in accordance with the Ministry of Health and Ministry of Education's safe school protocols.

Keywords **—COVID-19, Safe School Protocols, Secondary School, COVID-19 in Liberia**

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1. RATIONALE AND BACKGROUND INFORMATION

Coronavirus disease remains a very life-threatening global human health experiment which continues to negatively impact high-income, middle-income and low-income economies across the globe [4], [8]. Coronaviruses are enveloped, positive-sense, single stranded RNA viruses that are distributed broadly among humans, other mammals, and birds, which cause respiratory, enteric, hepatic, and neurologic diseases [17].

It all began in December 2019 when reports of an outbreak of an unexplained pneumonia with cases clustered around Wuhan Seafood Wholesale Market [5], [13], [14], [23]. The World Health Organization termed the virus 2019-nCoV while the International Committee on Taxonomy of Viruses (ICTV) coined it SARS-Cov-2; and the pneumonia caused by the viral infection was called novel coronavirus pneumonia (COVID-19) by WHO [24].Since the emergence of coronavirus in Wuhan, China in December 2019, with its rapid sporadic spread across other nations beginning March 2020 with a pandemic status, all schools across the world either closed down or transitioned from the regular traditional face-to-face classroom learning to remote learning for specific period in time [6]. Liberia is just one of those countries that the COVID-19 pandemic has had great effects on its education sector. Most of the schools across Liberia do not have a learning management system to provide lessons for their students while their schools are closed due to the existence of COVID-19. As such, it became a very challenging moment for schools and students during the closure of schools as a result of COVID-19. Some of the schools' teachers had to organize radio programs and Youtube channel to be providing general lessons for students during that period.

Globally, as of May 18, 2022, there are 520,372,492 confirmed cases of COVID-19 with 6,270,232 deaths. As of May 15, 2022, 11,660,363,722 vaccine doses against COVID-19 have been administered. As of May 2022, Africa has recorded 8,918,007 confirmed cases of COVID-19 with 254,000 deaths; while Liberia has recorded 1,732 confirmed cases of COVID-19 with 294 COVID-19 deaths [22].

On March 13, 2020, Liberia reported its first COVID-19 case. On March 16, 2020, the Ministry of Education issued a public service announcement mandating that all schools (primary, secondary, and higher education institutions) suspend classes for one week beginning on March 17, 2020. This initial measure was implemented to enable the Ministry of Health and the National Public Health Institute of Liberia to conduct surveillance and contact tracing in an effort to contain the virus' spread. This had an effect on the mental health of the students, as nearly all of them were saddened by this unfortunate circumstance. The Ministry of Education issued another announcement on March 20, 2020, informing citizens that classes would remain suspended until March 31, 2020, in response to advice from the health authorities. The Ministry of Education informed the public on 11 May 2020 that the academic year 2019/2020 remains suspended in accordance with the Stay Home Order issued by the President of the Republic of Liberia. When the COVID-19 outbreak subsides, the ministry added, all schools will complete the remaining lessons as outlined in their curricula.

Following the closure of schools, a measure taken by the government of Liberia to prevent the spread of the COVID-19 virus, over 1.4 million students in the country's fifteen political subdivisions were affected by this order [19]. Since March 17, students have been engaged in home-based remote learning via radio lessons, the Internet, and paper-based lessons delivered to their homes. UNICEF helped acquire Infection Prevention Control and Teaching and Learning Materials for more than 41,000 Grade 12 students and over 5,000 teachers in 707 schools as part of the government's preparedness measures and commitment to reopen schools using a phased approach (139 publics and 568 private) [19].

Fast forward to June 22, 2020, the Ministry of Education made a public service announcement informing the public of the reopening of high schools to enable only 12th graders to get back to school on June 29, 2020 in preparation for their West African Senior Secondary Certificate Exam (WASSCE). With such announcement, the Ministry of Education and the United Nations International Children's Emergency Fund provided Safe School Protocols, hand-washing facilities and sanitary materials to schools that were reopening for traditional face-to-face learning. These Safe School Protocols on COVID-19 included: students, teachers, administrators, support staff, parents and visitors to always wash their hands at the hand-washing stations before entering the premises of schools; to always wear nose mask; to always keep physical/social distance in classes and during recess periods; and to do their temperature measurement before entering the campuses. This was done so that secondary schools will adhere to those protocols to prevent the spread of the virus. It is from this backdrop that we decided to conduct a study on the implementation Safe Schools Protocols on COVID-19 in secondary schools in Montserrado County, which recorded the highest number of COVID-19 cases.

The clinical manifestations of coronavirus – fever, dry cough, fatigue, and poor breathing [14], [24] are unwell signs that most school age children usually experience

on a daily basis. As such, the implementation of safe school protocols on coronavirus is not just important but very vital to ensuring that all kids at school are protected from contracting the virus.Effectively implementing safe school protocols on coronavirus (COVID-19) in secondary schools during this global pandemic is of essence to the wellness and safety of students whom are considered future leaders. It is cardinal to operate schools nowadays in line with safe school protocols provided by partners through the Ministry of Health and Ministry of Education.

1.1 Study Objectives

2. To evaluate the effective use of all COVID-19 protocols at secondary schools in Paynesville Joebar.
3. To discuss the significance of the implementation of safe school protocols on COVID-19.

1.2 Causal Theory Illustration of Health Problem

Causal theory statement:

The risk of COVID-19 mostly among populations of the age range 18 to 90 years, indicated in the high rate of hospitalization and mortality from the assessment conducted [16, 3], is caused by SARS-CoV-2 virus [21], [10], [11], [20], overcrowding, close contact with someone who has COVID-19 [10], [11], and being coughed or sneezed on by an infected person [10], given that denial of the existence of the virus, lack of knowledge on the nature of the virus, and the environment one visits moderate the causes and that age (elderly), race, pre-existing comorbidities, and gender [20] exist prior to the causes.
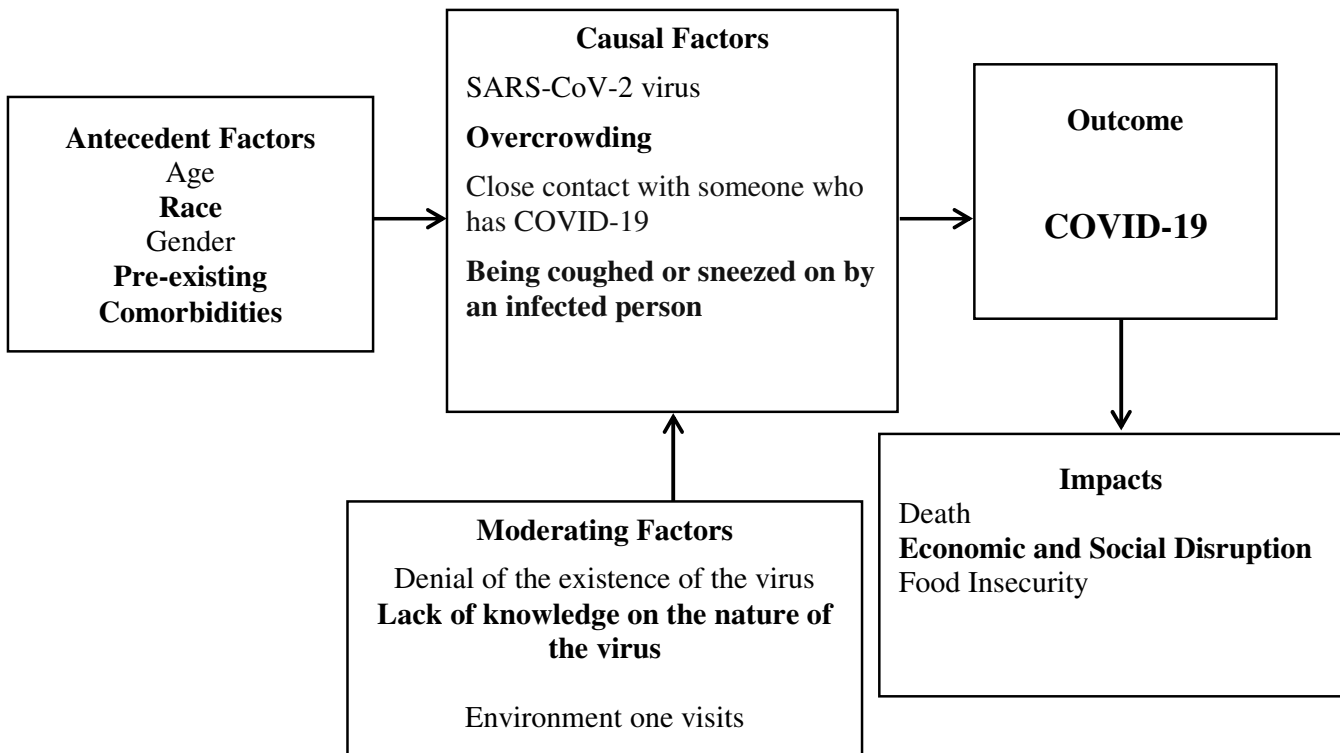

Figure I: Causal Theory Illustration

II.   METHODOLOGY

Both qualitative and quantitative research approaches were utilized in addressing the research objectives. In the questionnaires that were used, there were structured questionnaire for quantitative component and existing secondary reports for qualitative process. It involved collecting and converting data into numerical form for smooth analysis of data [1], [12]. And such required direct interactions with the students from a physical/social distancing angle.

2.0 Study Design and Sampling Method

The Descriptive Research Design was used during the research process in order to measure the frequency, central tendency and spread of data sets [6]. It was selected to obtain reliable information on the existing situation of the effective utilization of drafted safe school protocols on COVID-19 that were provided to all schools across Liberia before the reopening of schools when the total number of incident cases dropped in Liberia at a particular period of time. It took a critical look at how effective selected schools in Paynesville City are making use of all COVID-19 safe school protocols for the safety of school age children and by extension, analyze whether the practice level of students and administrators towards the prevention of COVID-19 are risk factors or protective factors of the causation of coronavirus. The baseline data collection was done by gathering and evaluating primary/field work data and existing/secondary data sources from Google scholar and reports. The simple random sampling technique was utilized to select participating schools in Paynesville Joebar. After that, the cluster sampling technique was used to randomly select students who participated in responding to the questionnaires. These students were placed in separate groups of cluster based on class levels (Grade 10, Grade 11 and Grade 12). The target sample population studied was 150 students. Students were included into the research process based on whether they were students of Grade 10, Grade 11 or Grade 12.

2.1 Data Collection and Statistical Analysis

Questionnaires were used as the data collection methods. A demographic survey to develop respondent's profile was done. Few students were also asked to briefly give their views on the significance of the use of the safe school protocols on COVID-19. For questionnaires, questions were adopted and modified from existing statements in the safe school protocols provided to schools by the Ministry of Health, National Public Health Institute of Liberia and UNICEF. The questions in this category were close-ended questions in the form of binary questions. The demographics section had 4 possible responses. The section regarding water, sanitation and hygiene had 9 possible responses. The section concerning general health had 11 possible responses. With regards to such, the total variables used were 24 variables.

The statistical analysis tool in Jamovi 2.3.2 was used to analyze the data that was collected (15, 18]. With the descriptive analysis tool, the following was analyzed: the mean of the sample data, the mode of the sample, the minimum and maximum values, the sample standard deviation measure for the data set, and tables and percentages with data condensation from interactions.

III.   DATA ANALYSIS

The data entry was done in Microsoft Excel 2010. It was then transferred to Jamovi data analysis software for further data analysis.

Below are data analyses done in Jamovi 2.3.2 relative to all of the variables that were used in the survey. The first analyses look at the demography profile of students relative to age, gender, class level and future career; descriptive statistics and frequencies of responses to each question.

Table I. Frequencies of Age

Levels	Counts	% of Total	Cumulative %
18-24	109	72.7 %	72.7 %
25-34	2	1.3 %	74.0 %
12-17	39	26.0 %	100.0 %

Table II. Frequencies of Gender

Levels	Counts	% of Total	Cumulative %
Female	83	55.3 %	55.3 %
Male	67	44.7 %	100.0 %

Table III. Frequencies of Class Level

Levels	Counts	% of Total	Cumulative %
Grade 10	40	26.7 %	26.7 %
Grade 12	60	40.0 %	66.7 %
Grade 11	50	33.3 %	100.0 %

Table IV. Frequencies of Future Career

Levels	Counts	% of Total	Cumulative %
Education	9	6.5 %	6.5 %
Health and Medicine	52	37.4 %	43.9 %
Communications and Media	3	2.2 %	46.0 %
Theology, Community and Social Services	3	2.2 %	48.2 %
Farming, Fishing and Forestry	4	2.9 %	51.1 %
Science and Technology	10	7.2 %	58.3 %
Arts, Culture, Sports and Entertainment	5	3.6 %	61.9 %
Law and Public Policy	12	8.6 %	70.5 %
Architecture and Engineering	17	12.2 %	82.7 %
Business, Management and Administration	24	17.3 %	100.0 %

Table V. Descriptives of Questions 1-9

	N	Mean	Mode	SD	Minimum	Maximum
Question 1	148	1.25	1.00	0.434	1	2
Question 2	150	1.10	1.00	0.301	1	2
Question 3	150	1.38	1.00	0.487	1	2
Question 4	148	1.30	1.00	0.462	1	2
Question 5	150	1.63	2.00	0.484	1	2
Question 6	150	1.13	1.00	0.334	1	2
Question 7	150	1.31	1.00	0.463	1	2
Question 8	150	1.15	1.00	0.362	1	2
Question 9	148	1.61	2.00	0.488	1	2

Table VI. Frequencies of Question 1 -9

Levels	Counts	% of Total	Cumulative %
1	111	75.0 %	75.0 %
2	37	25.0 %	100.0 %
Frequencies of Question 2			
Levels	Counts	% of Total	Cumulative %
1	135	90.0 %	90.0 %
2	15	10.0 %	100.0 %
Frequencies of Question 3			
Levels	Counts	% of Total	Cumulative %
1	93	62.0 %	62.0 %
2	57	38.0 %	100.0 %
Frequencies of Question 4			
Levels	Counts	% of Total	Cumulative %
1	103	69.6 %	69.6 %
2	45	30.4 %	100.0 %
Frequencies of Question 5			
Levels	Counts	% of Total	Cumulative %
1	55	36.7 %	36.7 %
2	95	63.3 %	100.0 %
Frequencies of Question 6			
Levels	Counts	% of Total	Cumulative %
1	131	87.3 %	87.3 %
2	19	12.7 %	100.0 %
Frequencies of Question 7			
Levels	Counts	% of Total	Cumulative %
1	104	69.3 %	69.3 %
2	46	30.7 %	100.0 %
Frequencies of Question 8			
Levels	Counts	% of Total	Cumulative %
1	127	84.7 %	84.7 %
2	23	15.3 %	100.0 %
Frequencies of Question 9			
Levels	Counts	% of Total	Cumulative %
1	57	38.5 %	38.5 %
2	91	61.5 %	100.0 %

Table VII. Descriptives of Questions 10-20

	N	Mean	Mode	SD	Minimum	Maximum
Question 10	148	1.40	1.00	0.491	1	2
Question 11	148	1.71	2.00	0.456	1	2
Question 12	150	1.83	2.00	0.380	1	2
Question 13	150	1.65	2.00	0.480	1	2
Question 14	149	1.75	2.00	0.433	1	2
Question 15	149	1.15	1.00	0.356	1	2
Question 16	149	1.10	1.00	0.302	1	2
Question 17	149	1.09	1.00	0.293	1	2

Questio n 18	150	1.25	1.00	0.433	1	2
Questio n 19	150	1.75	2.00	0.433	1	2
Questio n 20	150	1.25	1.00	0.436	1	2

Table VIII. Frequencies of Question 10-20

Levels	Counts	% of Total	Cumulative %
1	89	60.1 %	60.1 %
2	59	39.9 %	100.0 %

Frequencies of Question 11

Levels	Counts	% of Total	Cumulative %
1	43	29.1 %	29.1 %
2	105	70.9 %	100.0 %

Frequencies of Question 12

Levels	Counts	% of Total	Cumulative %
1	26	17.3 %	17.3 %
2	124	82.7 %	100.0 %

Frequencies of Question 13

Levels	Counts	% of Total	Cumulative %
1	53	35.3 %	35.3 %
2	97	64.7 %	100.0 %

Frequencies of Question 14

Levels	Counts	% of Total	Cumulative %
1	37	24.8 %	24.8 %
2	112	75.2 %	100.0 %

Frequencies of Question 15

Levels	Counts	% of Total	Cumulative %
1	127	85.2 %	85.2 %
2	22	14.8 %	100.0 %

Frequencies of Question 16

Levels	Counts	% of Total	Cumulative %
1	134	89.9 %	89.9 %
2	15	10.1 %	100.0 %

Frequencies of Question 17

Levels	Counts	% of Total	Cumulative %
1	135	90.6 %	90.6 %
2	14	9.4 %	100.0 %

Frequencies of Question 18

Levels	Counts	% of Total	Cumulative %
1	113	75.3 %	75.3 %
2	37	24.7 %	100.0 %

Frequencies of Question 19

Levels	Counts	% of Total	Cumulative %
1	37	24.7 %	24.7 %
2	113	75.3 %	100.0 %

Frequencies of Question 20

Levels	Counts	% of Total	Cumulative %
1	112	74.7 %	74.7 %
2	38	25.3 %	100.0 %

IV. RESULTS AND DISCUSSION

To appreciate the comprehensive application of COVID-19 safe school policies in secondary schools in Paynesville, Joebar, it is essential to interpret and debate each data set presented by the survey. Regarding this, there will be a discussion and interpretation of each variable used in the data gathering and analysis. Having established this, let's examine Tables I through IV.

Table I under data analysis is the Age Group Frequencies table. 26 percent of the research participants were between the ages of 12 and 17, 72.7% were between the ages of 18 and 24, and the remaining 1.3% were between the ages of 25 and 34. This means that more than two-thirds of the research participants were between the ages of 18 and 24, indicating that the bulk of respondents were adolescents who comprehended the questions. Table II contains the Gender Frequencies. It is believed that 56% of the participants were female, whereas 44% were male. In terms of gender, more than half of the participants were female. Table III displays Class Level Frequencies. It is reported that 26,7 percent of the students that participated were in 10th grade, 33,3 percent were in 11th grade, and 40 percent were in 12th grade. It goes without saying that the bulk of students who participated in the study were in the twelfth grade, indicating that a good percentage of them had a solid understanding of what they were involved in. Table IV displays Future Career Distributions. There is evidence that 6.5 percent of students are interested in the Education field, 37.4 percent are interested in the Health and Medicine field, 2.2 percent are interested in the Communications and Media field, 2.2 percent are interested in the Theology, Community, and Social Services field, 2.9 percent are interested in Farming, Fishing, and Forestry, 7.2 percent are interested in the Science and Technology field, and 3.6 percent are interested in the Business field. The majority of students (37.4 percent) chose a career in the Health and Medicine field, followed by the Business, Management, and Administration department (17.3 percent) and the Architecture and Engineering field (17.3 percent) (12.2 percent). High school students' interest in the

Health and Medicine profession has increased in recent years relative to their interest in the Business, Administration, and Management field.

Tables V and VI include the descriptive and frequency data for Questions 1 through 9. Each question has a simple 'YES' or 'NO' response. Question 1 is titled "Access to potable water and water supply." According to descriptive statistics (N=148; Mean=1.25; SD=0.434), 75 percent of the pupils reported having access to safe drinking water and water supply, while 25 percent reported not having access to clean drinking water and water supply. In this data collection, the lower the mean, the greater the likelihood that the majority of students answered "YES" to a question, and the higher the mean, the larger the likelihood that the majority of students answered "YES." The mean response to Question 1 is 1.25, indicating that many students selected 'YES'. The Question 1 standard deviation is 0.434, indicating that the data sets cluster around the mean. 84 percent of urban households had access to an improved source of drinking water, according to the Liberia Demographics and Health Survey conducted in 2019-2020 [9]. With such evidence, it is safe to assert that the quality and availability of drinking water in Liberia's urban areas have vastly improved. Question 2 is "Are there hand-washing facilities on campus?" With descriptive data (N=150; Mean=1.10; SD=0.301), 90 percent of the students indicated that there is a hand washing facility on campus, whereas 10 percent stated that there is no hand washing facility. The mean response to Question 2 is 1.10, indicating that many students selected 'YES'. The Question 2 standard deviation is 0.301, indicating that the data sets cluster around the mean. Question 3 is "Assign employees to supervise various hand washing stations." With descriptive data (N=150; Mean=1.38; SD=0.487), 62 percent of the students indicated that there is assigned personnel at various hand-washing stations on campus, while 38 percent stated that there is no assigned personnel at various hand-washing stations on campus. The mean score for Question 3 is 1.38, indicating that many students reacted positively.

Question 3's standard deviation is 0.487, indicating that the data sets cluster around the mean. "Do you wash your hands before arriving and leaving campus?" is the fourth question. According to descriptive statistics (N=148; Mean=1.30; SD=0.462), 69.6% of students indicated that they wash their hands before entering and leaving school, whereas 30.4% of students indicated that they do not wash their hands before entering and leaving campus. The mean of 1.30 suggests that the majority of students replied positively, whilst the standard deviation of 0.462 indicates that the data sets cluster around the mean. Question 5 is "Is your water supply tested?" With descriptive data (N=150; Mean=1.63; SD=0.484), 36.7 percent of the students stated that the source of water on campus is tested, while 63.3 percent stated that the source of water is not checked. The mean of 1.63 suggests that the majority of students answered 'NO,' while the standard deviation of 0.484 indicates that the data sets cluster around the mean. The sixth question is, "Does your institution have restrooms for kids and staff?" With descriptive data (N=150; Mean=1.13; SD=0.334), 87.3% of the students reported that their school has toilet facilities for students and staff, whereas 12.7% said that their school does not have toilet facilities for students and staff. The mean of 1.13 suggests that the majority of students replied positively, whilst the standard deviation of 0.334 indicates that the data sets cluster around the mean. Are pupils instructed in the correct use of toilets and hand washing facilities? According to descriptive statistics (N=150; Mean=1.31; SD=0.463), 69.3 percent of the students indicated that students are trained to use toilets and hand washing facilities properly, whereas 30.7% stated that students are not instructed to use toilets and hand washing facilities properly. The mean of 1.31 suggests that the majority of students answered 'YES,' whilst the standard deviation of 0.463 indicates that the data sets cluster around the mean. Question 8 is "Are restrooms routinely cleaned?" With descriptive statistics (N=150; Mean=1.15; SD=0.362), 84.7 percent of the students indicated that the toilet facility is routinely cleaned, whereas 15.3 percent

indicated that the toilet is not routinely cleaned. The mean of 1.15 shows that the majority of students answered 'YES,' whilst a standard deviation of 0.362 suggests that the data sets cluster around the mean. Does your school have a hygiene awareness program? is the ninth question. Using descriptive data (N=148; Mean=1.61; SD=0.488), 38.5% of the students indicated that their school had a hygiene awareness program, whereas 61.5% indicated that their school does not have a hygiene awareness program. The mean of 1.61 indicates that the majority of students answered 'NO', while the standard deviation of 0.488 suggests that the data sets cluster around the mean.

Tables VII and VIII contain descriptive and frequency data for questions 10 through 20. Question 10 is "Mandatory mask use (teachers, pupils, and staff)" Using descriptive statistics (N=148; Mean=1.40; SD=0.49), 60.1% of the students indicated that all students, instructors, and staff are required to wear masks, whereas 39.9% of them stated that masks are not required (N=148; Mean=1.40; SD=0.49). The mean of 1.40 suggests that the majority of students answered 'YES,' whilst the standard deviation of 0.491 indicates that the data sets cluster around the mean. Does your school have a thermometer at the entrance for temperature checks? With descriptive data (N=148; Mean=1.71; SD=0.456), 29.1% of the students said that their school has a thermometer at the entrance for temperature checks, while 70.9% stated that their school does not have a thermometer at the entrance for temperature checks. A mean of 1.71 indicates that the majority of students answered 'NO', whilst a standard deviation of 0.456 demonstrates that the data sets cluster around the mean value. Did the administration supply nose masks or face shields for kids and educators? Using descriptive statistics (N=150; Mean=1.83; SD=0.380), 17.3 percent of the students stated that the administration provided nose masks and face shields for teachers and students, while 82.7 percent stated that the administration did not provide nose masks and face shields for teachers and students. A mean of 1.83 suggests that the majority of students answered

'NO', whilst a standard deviation of 0.380 indicates that the data sets cluster around the mean value. The thirteenth question is, "Is social distancing implemented by all instructors, students, and staff?" Using descriptive statistics (N=150; Mean=1.65; SD=0.480), 35.3% of the students indicated that social distancing was practiced by all teachers, students, and staff, while 64.7% stated that social distancing was not done by all teachers, students, and staff. The mean of 1.65 suggests that a large proportion of students answered 'NO', while the standard deviation of 0.480 indicates that the data sets cluster around the mean. Question 14 is "Are there any referral procedures in place for suspected COVID-19 cases?" With descriptive statistics (N=149; Mean=1.75; SD=0.433), 24.8 percent of students indicated that there was a measure in place to refer suspected COVID-19 cases, whereas 75.2 percent of students stated that there was no such measure in place (Tables). The mean of 1.75 indicates that the majority of students answered 'NO', whilst the standard deviation of 0.433 suggests that the data sets cluster around the mean value. Do you feel that touching an object or surface containing the COVID-19 virus and then touching your nose or eyes could cause you to contract the COVID-19 virus? With descriptive statistics (N=149; Mean=1.15; SD=0.356), 85.2% of the students stated that they believe touching an object or surface containing the COVID-19 virus and then touching their noses or eyes could cause them to contract the virus, while 14.8% of the students stated that they do not believe touching an object or surface containing the COVID-19 virus and then touching their noses and eyes could cause them to contract the virus. A mean value of 1.15 shows that the majority of students answered positively, whilst a standard deviation of 0.356 suggests that the data sets cluster around the mean value. The answer to question 16 is 'Fever, dry cough, shortness of breath, and exhaustion are the primary symptoms of COVID-19' With descriptive statistics (N=149; Mean=1.10; SD=0.302), 89.9 percent of the students indicated that the primary symptoms of COVID-19 are fever, dry cough, shortness of breath, and fatigue, while 10.1% stated

that the primary symptoms of COVID-19 are not fever, dry cough, shortness of breath, and fatigue. The mean of 1.10 suggests that the majority of students answered 'YES,' whilst the standard deviation of 0.302 indicates that the data sets cluster around the mean value. The 17th question asks, "Is COVID-19 an airborne virus?" With descriptive statistics (N=149; Mean=1.09; SD=0.293), 90.6% of the students stated that COVID-19 is an airborne virus, whereas 9.4% of them stated that COVID-19 is not an airborne virus. A mean value of 1.09 indicates that the majority of students answered 'YES,' while a standard deviation of 0.293 demonstrates that the data sets cluster around the mean value. Question 18 asks, "Is there a policy that allows kids or teachers to remain home when they are ill?" According to descriptive statistics (N=150; Mean=1.25; SD=0.433), 75.3% of students stated that there is a policy in place to allow students or instructors to remain home when they are ill, while 24.7% stated that there is no policy in place to allow students or teachers to stay home when they are ill. A mean of 1.25 suggests that a large number of students answered 'YES,' while a standard deviation of 0.43 indicates that the data sets cluster around the mean value. Question 19 is "Has anyone previously experienced COVID-19 viral symptoms?" According to descriptive statistics (N=150; Mean=1.75; SD=0.433), 24.7 percent of students said that someone in their school has been diagnosed with COVID-19 viral symptoms, whereas 75.3% of students reported that no one in their school has been diagnosed with COVID-19 virus symptoms. A mean value of 1.75 indicates that the majority of students answered 'NO', whilst a standard deviation of 0.433 indicates that the data sets cluster around the mean value. Do you believe that you are at risk for contracting COVID-19? According to the descriptive statistics (N=150; Mean=1.25; SD=0.436), 74.7 percent of the students believe they are at risk of contracting COVID-19, while 25.3% of them believe they are not at danger of contracting COVID-19. A mean of 1.25 shows that the majority of students answered 'YES,' while a standard deviation of 0.436 indicates that the data sets cluster around the mean value.

The significance of straight adherence to safe school protocols of coronavirus cannot be overemphasized. All of these safe school protocols being surveyed, analyzed, interpreted and discussed serve as layers of maximum prevention and protection to keep schools safe at all time [3]. They further serve as indications for implementing layered prevention strategies to protect students, teachers, staff, visitors, and other members of their households and support in-person learning [3].

V.   CONCLUSION

Coronavirus safe school practices must be strictly adhered to in order to protect secondary school children, and by extension all pupils in school. It is impossible to deny the numerous benefits that coronavirus-safe school policies provide for pupils while they are in school. The issue of safe school routines should not be restricted to coronavirus alone, but should also include mechanisms to prohibit pupils from entering school grounds with firearms, knives, or other sharp tools that could be used to accidentally kill other students or themselves. From the results and discussion, it is clear that the majority of students answered "YES" to all queries for data sets with mean values between 1.0 and 1.49, but "NO" to all queries for data sets with mean values between 1.5 and 1.99. These mean values between 1.0 and 1.49 reflect both adherence to safe school measures for coronavirus and knowledge of the biology of the virus. These mean values account for noncompliance with safe school measures for coronavirus as well as a misunderstanding of the virus's biology. According to the data analysis, interpretation, and discussion, thirteen (13) out of twenty (20) variables had a majority of students responding 'YES,' which accounts for 65 percent of students who believe secondary schools are adhering to the implementation of safe school protocols for coronavirus and comprehending the nature of the virus. Seven (7) out of twenty (20) variables had a majority of students replying 'NO',

accounting for 35% of students who believe secondary schools are not implementing safe school practices for coronavirus and do not comprehend the nature of the virus. These protocols can only be implemented if they are enforced by secondary school officials.

Recommendations

After doing extensive research, we have formulated the following suggestions for public consumption and implementation:

i) That all primary, secondary, and tertiary institutions of learning in Liberia maintain hand-washing facilities for use by students, teachers, and staff during school hours. This proposal is based on the researchers' awareness that regular hand washing has been one of the protective factors against practically all infectious diseases that have caused pandemics or epidemics. In light of the foregoing, hand washing could potentially protect kids from various environmental-related diseases, in addition to the once-every-decade infectious outbreaks.

ii) That the Ministry of Education and Ministry of Health [Liberia] collaborate to ensure that all primary, secondary, and tertiary schools employ a health practitioner (nurse or public health professional) to monitor hand washing facilities and ensure that school campuses meet the minimum safety criteria for the promotion of the health and well-being of students, faculty, and staff.

iii) That the Ministry of Education include Epidemic or Pandemic Preparedness, Management, and Response Mechanisms as a particular topic in the Health Science curricula of all primary and secondary schools in the country, and ensure that all schools provide students with the appropriate materials.

iv) That going forward, the West African

Examination Council (WAEC) and Ministry of Education guarantee that hand washing facilities are installed at all West African Senior Secondary Council Examination (WASSCE) examination centers for the National Examination.

v) That procedures be put in place to prohibit kids from entering school grounds with weapons, knives, cutlasses, needles, syringes, razor blades, etc.

Safety Considerations

Sanitary materials (hand sanitizers) and face masks were procured for each team member who was involved in the data collection process in the communities. All team members and respondents were encouraged to observe social distancing and follow all of the preventive health protocols of COVID-19.

Informed Consent

Respondents read with interest the statement of consent at the top of every survey paper. After reading, they willingly decided to form part of this research activity.

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Competing Interests

The authors declared no competing interests.

Author Contributions

Forkpah Pewee prepared the write-ups in the manuscript from abstract to conclusion as well as revision and recommendations. Students Lawrence Sergbou, Peace Karnkeh and Randolph S. Tamba did the data collection and recommendations as well as reviewing of grammatical errors and sentence structures.

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