



Practice of COVID-19 Preventive Measures among In-School Adolescents in Enugu South Education Zone

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Abstract

This study examined the practice of preventive measures of COVID-19 among in-school adolescents Enugu south education zone. Descriptive survey research design was used for the study. The population for the study comprised 6,987 in-school adolescents in 11 public secondary schools in Enugu South Local Government Area. A sample of 320 in-school adolescent was drawn for the study. A multi-stage sampling procedure was adopted in selection of the sample. The instrument was the researcher' structured questionnaire titled Practice of Preventive Measures for COVID-19 Questionnaire (PPMCQ). The instrument consisted of 14-items which elicited information on Practice of Preventive Measures for COVID-19 from in-school adolescents. Internal consistency of the instrument was determined using Cronbach alpha co-efficient of 0.87 was obtained. Only 318 out of 320 copies of the PPMCQ administered to the participants were used for data analysis. Frequency and percentage were used to answer the research questions while Chi-squared test was used to test the null hypothesis. The results on the overall proportion of in-school adolescents who practice the preventive measures for COVID-19 are low proportion that has good practice of COVID-19 preventive measures. The results on practice of the preventive measures by age and gender are ; results showed that in-school adolescents aged 15-19 had more respondents with very good practice 57(37.25%) while female in-schools adolescents had more respondent with good practice 58(33.91%) and 51(31%) had very good practice. The study recommended that Practice of preventive measures for COVID-19 is vital among in-school adolescents due to the vast amount of misinformation shared on social media that is beclouding people's understanding of COVID-19. Therefore more emphasis should be placed on educating in-school adolescents about this disease and practice of preventive measures.

Keywords: Practice, COVID-19, Preventive measures, In-school adolescents

Introduction

Practice of preventive measures is vital in reducing COVID-19 morbidity and mortality. The World Health Organization (WHO) declared COVID-19 as a pandemic on the 11th of March 2020. Since then, many efforts are being carried out to eradicate the virus. The COVID-19 virus has become endemic in many countries such as US, China, Russia and India. The current effort is to curb its spread and mitigate associated short term and long term consequences on human health. Knowledge and attitude of people should be directed towards strict preventive practices in order to halt the spread of the virus (Alzoubi, Alnawaiseh, Al-Mnayyis, Abu- Lubada, Aqel, & Al-Shagahin, 2020). The virus was initially named as 2019 novel coronavirus (2019-nCoV) by the WHO, then was later on updated as SARS-CoV-2 and the name of the disease as coronavirus disease 2019 (COVID-19) (Lu, Zhao , Li, Niu, Yang, Wu , et al.,2020; Riou & Althaus ,2020).

Globally, there were an estimated 21,294,845 confirmed cases and nearly one million (761,779) deaths according to a WHO report on August 21, 2020, in 216 Countries (Team, 2020).



After the pandemic nature of the diseases, countries take different preventive measures including, people movement restriction, staying at home and closure of the schools and different social services (Burke, 2020; Zettler, Schild, Lilleholt, Bohm, 2020). Following the WHO declaration, Nigeria has implemented preventive measures to halt the pandemic nature of this disease. This includes school closure, staying at home, keeping social distance, appropriate hand washing in places of common use, like the bank, market and church/mosques, and declaring it a state emergency at national level (Tadesse, Melese, Eshetie, Chane, & Ali, 2020).

The SARS-CoV-2 is an enveloped non-segmented positive sense RNA virus (Zhu, Zhang, Wang, Li, Yang, Song, et al., 2020). Coronavirus disease 2019 (COVID-19) is caused by a positive-sense of Ribonucleic Acid (RNA) virus, Severe Acute Respiratory Syndrome Coronavirus (SARS 2-COV-2) virus (Masters, 2019). This disease was originally classified under zoonotic diseases, which is transmitted animal to human, and human to human. The patients confirmed with COVID-19 have a clinical symptom of fever, cough, shortness of breath, and sore throat within 14 days of the incubation period (Guan et al., 2020), (Saitz et al., 2014).

COVID-19 is transmitted from human to human through face–oral, direct contact, and air way droplets. COVID-19 has no effective treatment, nonetheless early recognition of the symptoms of the disease and timely looking for supportive care and the preventive measures will help to mitigate the virus propagation. Older people with medical co-morbidities are more likely affected and lead to poor outcomes (Jemal et al., 2020). Hence it is very important to practice the preventive measures in order to reduce both the morbidity and mortality rate of the disease.

Practice is an action displayed to achieve certain outcome. Practice is the actual application of knowledge (Ezinne, Okwor & Odo, 2019). According to Aurang, Musa, Fazal, Muhammad, Asim, & Neelam (2017) practice is defined as any proceeding action regarded as individual's habit. Also practice can be defined as an established way of doing things being developed through experience and knowledge (Sally, 2004). Practice is also doing an action which is preventive regularly to reduce morbidity and mortality rate of a disease. When right preventive measures are put into practice the desired outcome will be achieved.

Preventive measures are actions that help to stop or limit the spread of an illness. Salama (2017) described preventive measures as actions aimed at stopping a situation from occurring. Also, preventive measures are strategies that will help curb the outcome of an illness or unhealthy situation (Enemuo & Obayi, 2021). In this study, some preventive measures that will help curb the outcome of COVID-19 among in-school adolescents are washing hands frequently, wearing of nose masks and maintaining social distance. Preventive measures of COVID-19 aim at changing the health habit of people to be conducive to enjoy good health. The people to be considered in this study are the in-school adolescents.

In school adolescent are students who are aged 10-19. Adolescence represents a critical period of development during which personal lifestyle choices and behaviour patterns are established including adhering to COVID 19 preventive measures (Blakemore & Mills, 2016). Also, a school is a setting where interpersonal relations are promoted, which are important for adolescents' personal and social develop (Ravert, 2018). In school adolescents spends a great part of their time at school, which makes it essential to involve school in protection from risky behaviours (Adeleye & Oluwatosin, 2014). It has been observed that majority of these in school adolescents in secondary schools are still in the stage of physical, emotional and social maturity, they tend to have problem with their personal hygiene including practice of preventive measures of COVID 19 such as wearing nose masks, maintaining social distance and constant washing of hand (Burke, 2020; Zettler, Schild, Lilleholt, & Bohm, 2020). Studies have shown that practice of



COVID-19 preventive measures can be associated with factors such as sex, educational level age, residency level income, and marital status of the study participants (Akalu , Ayelign, & Molla, 2020). In this study the age and gender were examined.

Age and gender play vital in practicing preventive measures of COVID-19. Gender is a construct validity. A study conducted by Al-Hanawi et al. (2020) on Knowledge, Attitude and Practice Toward COVID-19 Among the Public in the Kingdom of Saudi Arabia, the mean score for practices was 4.34 (SD = 0.87, range: 0–5), indicating good practices. However, the results showed that male have less knowledge, less optimistic attitudes, and less good practice toward COVID-19, than female. It also indicated that older adults are likely to have better knowledge and practices, than younger people. Also a study conducted by Azlan, Hamzah, Sern, Ayub, and Mohamad (2020) on Public knowledge, attitudes and practices towards COVID-19: A cross-sectional study in Malaysia, indicated that wearing of face masks was found to be significantly associated with gender, age group, region, occupation and income group. Males, people between the ages of 18 and 49, students and those earning less than per month showed higher percentages in wearing face masks when leaving the house. People living in the Central region, those above the age of 50 and people with an increased income per month were less likely to wear a face mask. This study intends to make its contribution and add to existing literature on the influence of age and gender on practice of preventive measures of COVID-19 among in-school adolescents in Enugu South LGA.

The location of the study is Enugu south education zones in Enugu State. Enugu South Local Government Area is one of the 17 local governments in Enugu state. It has many secondary schools, both public and private school. There are fifteen Public secondary schools in Enugu south Local Government Area of Enugu State; six mixed schools were used for the study. In-school adolescents are known for their being inquisitive and uncertainty of knowledge, interventions to support adolescents to attain a productive, healthy, and satisfying life are critical to the success of the sustainable development agenda, which practice of preventive measures are inclusive. Also, health related behaviours that under- lie major non-communicable diseases usually start during adolescence, which could affect the morbidity and mortality of adolescents later in their lives as well as of future generations (United Nations Fund for Population Activity, 2011; Vogel, Pileggi-Castro et al., 2015). It is as a result of this that this study was designed to determine in-school adolescents' practice of COVID-19 preventive measures in Enugu South LGA.

Purpose of the Study

The purpose of the study was to determine the practice of preventive measures for COVID-19 among in-school adolescents in Enugu South LGA. Specifically, the study examined the:

1. practice of preventive measures toward COVID-19 among in-school adolescents in Enugu South LGA
2. Practice of preventive measures toward COVID-19 among in-school adolescents in Enugu South LGA based on age.
3. practice of preventive measures toward COVID-19 among in-school adolescents in Enugu South LGA based on gender



Research Questions

The following research questions guided the study:

1. What is the practice of preventive measures toward COVID-19 among in-school adolescents in Enugu South LGA?
2. What is the practice of preventive measures toward COVID-19 among in-school adolescents in Enugu South LGA based on age?
3. What is the practice of preventive measures toward COVID-19 among in-school adolescents in Enugu South LGA based on gender?

Research Hypotheses

The following null hypotheses were formulated for the study and were tested at .05 level of significance.

1. There is no significant difference in the practice of preventive measures toward COVID-19 among in-school adolescents in Enugu South LGA based on age.
2. There is no significant difference in the practice of preventive measures toward COVID-19 among in-school adolescents in Enugu South LGA based on gender.

Methods:

To achieve the objective of the study, the cross-sectional survey research design was adopted. The population for the study comprised 6,987 in-school adolescent in 11, public secondary schools in Enugu South LGA. A sample of 320 in-school adolescents was drawn for the study. The multi-stage sampling procedure was adopted sample selection. First stage, using purposive sampling technique, four mixed secondary schools from eleven secondary schools in Enugu South was selected. Second stage involved selection of only the JSS 2 and SS2, using purposive sampling technique because JSS1 and SSS1 students were undergoing registration, while JSS3 and SSS3 are exam classes. Simple random sampling without replacement was used to select 40 students from each JSS 2 and 40 students from each SSS2 from the sampled schools. Hence, from each school 80 students was selected, so from the selected 4 schools 320 students were selected, The instrument for data collection was the researcher' structured questionnaire titled Practice of Preventive Measures for COVID-19 Questionnaire (PPMCQ). The instrument consisted of 14-items to elicit information on Practice of Preventive Measures for COVID-19 from in-school adolescents in Enugu South LGA. The questionnaire has two sections A and B. Section A contained two items on demographic data of the respondents. Section B contained 12 items that elicited information on the Practice of Preventive Measures for COVID-19. The respondents were required to indicate yes or no to options; when one score; 0-4= poor practice (PP), 5-8=Good Practice (GP), 9-12= Very Good Practice (VGP). That is in percentage; 0-39%=PP, 40-69%=GP, 70-100=VGP. The instrument was validated by three experts in the Department of Human Kinetics and Health Education, University of Nigeria Nsukka. Internal consistency of the instrument was determined using Cronbach alpha co-efficient, reliability co-efficient $r=0.87$ was obtained. The Three hundred and twenty copies of the questionnaire were administered by the researcher and research assistants to the in-school adolescents. However, 318 copies were filled and used for analysis. Frequencies and percentages were used to answer the research questions while Chi – squared was used to test the null hypotheses.



Results

Table 1 Socio-demographic Characteristics of in-school adolescents in Enugu south LGA (n=318)

S/N	Variable	Frequency	Percent (%)
1	Age		
	10-14 years	165	51.89
	15-19 years	153	48.11
	Total	318	100
2	Gender		
	Male	147	46.23
	Female	171	53.77
	Total	318	100

Table 1 shows the socio-demographic characteristics of in-school adolescents in Enugu South LGA. The result shows those aged 10-14 years has higher percentage (51.89%) than those in the age bracket 15-19 years (48.11%). The percentage of female in-school adolescents (53.77%) is greater than that of males (46.23%). The result further reveals that those between the ages of 10-14 years were the major respondents.

Table 2: Percentage responses of in-school adolescents on Practice of preventive measures of COVID-19 in Enugu South Local Government Area (n=318)

S/N	Practice of preventive measures	YES (f)	NO (f)	
	Remark			
1.	Hand washing regularly	131(41.2)	187(58.8)	PP
2.	Using sanitizer to protect hands	103(32.4)	215(67.6)	PP
3.	using face mask protect	187(58.8)	131(41.2)	GP
4.	Avoid touching nose and eyes	97(30.5)	221 (69.5)	pp
5.	Avoid being outdoors	126 (39.6)	192 (60.4)	PP
6.	Avoid touching surfaces	128(40.3)	190 (59.7)	PP
7.	Avoid touching animals	243(76.4)	75 (23.6)	
	VGP			
8.	By coughing and sneezing at the elbow	115(36.2)	203(63.8)	
	PP			
9.	By consuming ailment	108(34.0)	210 (66.0)	
	GP			
10.	Avoid hand shaking	123(38.7)	195(61.3)	
	PP			
11.	By drinking herbal tea	177(55.6)	141(44.4)	
	GP			
12.	By bathing with salt water	105 (33.0)	213 (67.0)	
	GP			
	Percentage Average	43.06	56.94	

Key: 0-39%=Poor Practice, 40-69%=Good Practice, 70 and above =Very Good Practice.



following items; using face mask protect (79.7%), avoid touching nose and eyes (97.6%), avoid being outdoors (79.1%), coughing and sneezing at the elbow (75.6%) and avoid hand shaking (85.0%). The table indicated that in overall practice of preventive measures of COVID-19 that the respondents aged 15-19 years had good practice (67.7%) than the respondents aged 10-14 years (48.7%).

Table 4: Practice of preventive measures of COVID-19 possessed by in-school adolescents in Enugu South Local Government Area based on Gender (n=318)

S/N	Practice of preventive measures	Female (n=171)		Male	
		YES (%)	NO (%)	YES (%)	NO (%)
(n=147)					
NO (%)					
1.	Hand washing regularly	86 (50.3)	60(35.1)	45(30.6)	121(82.3)
2.	Using sanitizer to protect hands	66(38.6)	74(43.3)	37(25.2)	141(95.6)
3.	using face mask protect	95(55.6)	44 (25.7)	92(62.6)	87 (59.2)
4.	Avoid touching nose and eyes	75(51.0)	146(85.4)	57(38.8)	40(23.4)
5.	Avoid being outdoors	103(60.2)	46(26.9)	89(60.5)	80(54.4)
6.	Avoid touching surfaces	78 (45.6)	65(38.0)	50 (34.0)	125
	(85.0)				
7.	Avoid touching animals	148 (86.5)	25 (14.6)	95(64.6)	50(34.0)
8.	By coughing and sneezing at the elbow	73 (42.7)	68(39.8)	42(28.6)	135(91.8)
9.	By consuming ailment	71(48.3)	145 (84.8)	37(21.6)	65(44.2)
10.	Avoid hand shaking	97(56.7)	68 (39.8)	26 (17.7)	127
	(86.4)				
11.	By drinking herbal tea	94(55.0)	53(31.0)	83(56.5)	88(59.9)
12.	By bathing with salt water	65(38.0)	77(45.0)	40(27.2)	136 (92.5)

key: 0-39%=Poor Practice, 40-69%=Good Practice, 70 and above=Very Good Practice.

Results in Table 4 showed that female respondents had good practice on hand washing regularly (50.3%), avoid touching nose and eyes (51.0%), avoid touching animals (86.5%) and avoid hand shaking (56.7%) while male respondents had good practice on using face mask protect (62.6%), Avoid being outdoor (60.5%) and avoid touching animals (64.6 %). The table indicated that female respondents practice coughing and sneezing at the elbow (42.7%), avoid hand shaking (56.7%) than the male respondents. Overall response on practice of preventive measures of COVID-19, female respondent had good practice (52.38%) while male respondents had poor practice (38.9%).



Table 5: Summary of Chi-square (χ^2) Test of significant difference on practice of preventive measures toward COVID-19 possesses by in-school adolescents in Enugu South Local Government Area based on age (n=318)

Variables	N	Practices			χ^2 cal	P-val	df	Decision
		Poor Practice	Good practice	Very good practice				
Age		O (E)	O (E)	O (E)				
10-14	165	75(66.41)	63(55.00)	27(44.58)	15.61	5.99	2	Reject Ho
15-19	153	53(61.58)	43(51.00)	57(40.41)				
Overall	318	128	106	84				

Table 5 showed the Chi-square calculated-values with their corresponding critical or table values. Since the Chi-square calculated-value is greater than Chi-square critical value ($\chi^2\text{-cal}15.61 > P\text{-value}= 5.99$) at 0.05 significant and 2 degree of freedom, the null hypothesis was therefore rejected. This implies that significant difference existed in the practice of preventive measures toward COVID-19 possesses by in-school adolescents based on age.

Table 6: summary of Chi-square (χ^2) Test of significant difference on practice of preventive measures toward COVID-19 possesses by in-school adolescents in Enugu South Local Government Area based on gender (n=318)

Variables	N	Practice			χ^2 cal	P-val	df	Decision
		Poor Practice	Good practice	Very good practice				
Gender		O (E)	O (E)	O (E)				
Male	147	68(68.83)	48 (49.00)	31(38.83)	5.43	5.99	2	Accepted Ho
Female	171	60(59.16)	58 (57.00)	53 (45.17)				
Overall	318	128	106	84				

Table 6 indicated that male in-school adolescents had more respondent with poor practice 68(48.26%) while female in-school adolescents had more respondents with good practice 58(33.91%) and very good practice 53(31%). The Chi-square calculated-value is ($\chi^2\text{-cal}5.43$) while Chi-square critical value is ($P\text{-value}=5.99$). Since the Chi-square calculated-value is less than Chi-square critical value ($\chi^2\text{-cal}5.43 < P\text{-value}= 5.99$) at 0.05 significant and 2 degree of freedom, the null hypothesis was therefore accepted. This implies that significant difference does not exist in the practice of preventive measures toward COVID-19 possesses by in-school adolescents based on gender.

Discussion

The result in table1 revealed that socio demographic factors of in-school adolescents are essential in practice of preventive measures which is in line with other studies, like the study conducted by Azlan, Hamzah, Sern, Ayub, and Mohamad (2020) on Public knowledge, attitudes and practices towards COVID-19 indicated that observing preventive measures of COVID-19 was found to be significantly associated with gender, age group, region, occupation and income group.

The result in table2 revealed that low proportion of in-school adolescent carry out good practice of preventive measures toward COVID-19. The findings in table 2 showed that majority of the proportion did not practice the following; washing hand regularly (58.8%), using sanitizer



to protect hands (67.6%), Avoid touching nose and eyes (69.5%), Avoid being outdoors (60.4%), coughing and sneezing at the elbow (63.8%), Avoid hand shaking (61.3%). According to World Health Organization (2020), practising preventive measures such as hand washing with soap and water, wearing of face mask, social distancing, covering of the mouth and nose when coughing, and avoiding touching of the face can prevent transmission of COVID-19 infection (World Health Organization, 2020). This may be reason behind increase in morbidity and mortality rate of COVID-19. Also, table 2 reveals that respondents aged 15-19 years had good practice on the following items; using face mask protect (79.7%), which is agreement with the study by conducted by Azlan, Hamzah, Sern, Ayub, and Mohamad (2020) on Public knowledge, attitudes and practices towards COVID-19: A cross-sectional study in Malaysia, indicated that wearing of face masks was found to be significantly associated with gender, age group, region, occupation and income group. Males, people between the ages of 18 and 49, students and those earning less than per month showed higher percentages in wearing face masks when leaving the house.

The findings in Table 3 indicated that in overall practice of preventive measures of COVID-19 that the respondents aged 15-19 years had more good practices (67.7%) than the respondents aged 10-14 years (48.7%). Also, the findings in Table 5 showed that significant difference existed in the practice of preventive measures toward COVID-19 possesses by in-school adolescents based on age. In agreement with the study, the studies by Shade, Daminova, Yuldashkhanova, Khudanov, (2011) Yuldashkhanova, Abdullaev, and Khudanov, (2012) also reveal that adolescents 10-14 years are mostly admitted in hospital for dental caries. Also, study by I-Hanawi, et al. (2020), also indicated that older adults are likely to have better knowledge and practices, than younger people.

The findings in Table 4 showed an overall response on practice of preventive measures of COVID-19, female respondent had good practice (52.38%) while male respondents had poor practice (38.9%). Also, the findings in Table 6 indicated that significant difference does not exist in the practice of preventive measures toward COVID-19 possesses by in-school adolescents based on gender. The finding is in line with the study conducted by Al-Hanawi et al. (2020) on Knowledge, Attitude and Practice Toward COVID-19 Among the Public in the Kingdom of Saudi Arabia, the mean score for practices was 4.34 (SD = 0.87, range: 0–5), indicating good practices. However, the results showed that male have less knowledge, less optimistic attitudes, and less good practice toward COVID-19, than female. Contrary, to the study, a study by AL-Daboony (2016) on knowledge, attitude and practices towards non-communicable disease risk factors among medical staff indicated that both female and male have low proportion in physical activity in their leisure time. The low prevalence of leisure time physical activity is apparent throughout all age groups and no gender differences were found at the 0.05 level of significance, males reported higher percentages of daily physical activity 33% of male compared 27% in female.

Conclusion

The findings have shown that low proportion of in-school adolescent had good practice of preventive measures towards COVID-19. The study shows the age 15-19 had good practice of preventive measures towards COVID-19 than the age 10-14years. Also, the study shows that the female in-school adolescents had good practice of preventive measures towards COVID-19 than the male in-school adolescents. Further, more the study shows that there is significant difference in the practice of preventive measures towards COVID-19 among in-school adolescents based on



age and no significant difference in the practice of preventive measures towards COVID-19 among in-school adolescents based on gender. The study, therefore, concludes that majority of in-school adolescents possess poor practice and age was significant in practice of preventive measures towards COVID-19.

Recommendations

Based on the finds of the study, the following recommendations were proffered:

1. Since poor practice of preventive measures towards COVID-19 among in-school adolescents, hence teachers and government should make right in formation known because many confusing information are in the media.
2. Educating and practicing of preventive measures towards COVID-19 among in-school adolescents, especially among the male student because by nature they are less careful.
3. Parents, teacher and government should consider the young adolescents, emphasizing these preventive measures towards COVID-19 and insisting that they adhere to it.

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