International Journal of Pharmacy and Pharmaceutical Science

ISSN Print: 2664-7222
ISSN Online: 2664-7230
Impact Factor: RJIF 8
IJPPS 2023; 5(1): 01-06
www.pharmacyjournal.org
Received: 01-11-2022
Accepted: 05-12-2022

Owonaro Peter A
Faculty of Pharmacy, Niger Delta University, Wilberforce Island, Bayelsa, Nigeria

Eniojukan Joshua F
Faculty of Pharmacy, Niger Delta University, Wilberforce Island, Bayelsa, Nigeria

Godwin Gloria
Faculty of Pharmacy, Niger Delta University, Wilberforce Island, Bayelsa, Nigeria

Owonaro Daughter E
Faculty of Clinical Sciences Niger Delta University, Wilberforce Island, Bayelsa, Nigeria

Corresponding Author:
Owonaro Peter A
Faculty of Pharmacy, Niger Delta University, Wilberforce Island, Bayelsa, Nigeria

Participants reported COVID-19 knowledge and prevalence of symptoms of COVID-19 among students in Bayelsa state, Nigeria

Owonaro Peter A, Eniojukan Joshua F, Godwin Gloria and Owonaro Daughter E

DOI: https://doi.org/10.33545/26647222.2023.v5.i1a.25

Abstract
Purpose: This study investigated participants reported COVID–19 knowledge and prevalence of symptoms of covid – 19 among students in Niger Delta University in Bayelsa State, Nigeria.
Method: A random simple sampling techniques was employed with 376 questionnaires were distributed among the students.
Results: A total of 350 questionnaires were retrieved from the participants (n = 1376) cutting across all the students. Participants reported that they had adequate knowledge of COVID-19 signs and symptoms. The male participants were more. Those with age range of 18 – 25 years were most common. Participants most reported signs and symptoms of COVID–19 during the peak, last one month and in the last week were loss of taste, loss of appetite, and loss of smell. The majority of the participants reported adequate knowledge of COVID-19, origin as China, and causative agent as a virus with incubation period from 3 -14 days, often treated with antibiotics. Participants revealed that cancer patients were most affected were 50 years and above. Also, participants had adequate knowledge of COVID–19 as contagious, worst in patients with weak immune system. Participants reported that they had adequate knowledge of covid -19 signs and symptoms. Most reported were symptoms of fever, cough, and sore throat among the participants.
Discussion: The majority of the participants reported adequate knowledge of COVID–19, means of transmission of COVID-19, side effect with COVID–19. Also, the study clearly identify adequate knowledge means of COVI D - 19 transmission sign and symptom. There was a statistically significant difference (p>0.005) on knowledge of COVID – 19 among the student's population.

Keywords: COVID – 19, Knowledge, Bayelsa State, Students, symptoms, signs, and Transmission

Introduction
COVID 19 was first discovered in Wuhan, China where numerous cases of the virus were recorded [1, 3]. This brought Wuhan to the world's attention with numerous cases of the infection was recorded [5, 8, 9, 16]. Covid -19 emergent can be linked to the Human seafood market, where live animals were sold. At the initial stage of COVID–19 emergent, 41 cases were recorded with symptoms such as Malaise, dry cough, shortness of breath, etc. [6, 7 9, 10]. The knowledge gained through previous coronavirus outbreaks provides a favorable scientific basis for vaccine design to identify potentially protective measures [3, 7, 8,11, 15]. Therefore, knowledge and experience in coronavirus knowledge and vaccination is limited. In view of the urgency of making vaccines available for use, researchers must primarily focus on vaccines that can be produced massively Although, the availability of the equipment and raw materials to produce them should be given priority [2, 4, 6, 12, 13,14], based on the virulent nature of viruses (live-attenuated or inactivated). Erfani, *et al*. (2020) study on the knowledge, attitude, and practices towards COVID-19 among Iranian population of 8591 revealed that 60.8% of the general population having moderate knowledge towards the disease. Above all, the findings suggest that Iranian population demonstrated decent knowledge, appropriate practice, and positive attitude towards COVID-19 at the time of the outbreak.
This study aimed to investigate participants reported covid-19 knowledge and prevalence of symptoms of covid – 19 among students in Niger Delta University in Bayelsa State, Nigeria Method.

Study Location/Setting
The study was conducted among students in Niger Delta University in Bayelsa State, Nigeria

Study Design and Sample Size
A cross-sectional study design using a validated questionnaire was employed in this study. The population studied was 376 patients across the hospitals. There was no bias for ethnicity, age, religion, marital status.

Sampling Technique
A random simple sampling techniques was employed with 376 questionnaires were distributed among the hospital pharmacists. A total of 350 questionnaires were retrieved from the participants (n = 1376) cutting across all the students. About 26 questionnaires were rejected due to incompleteness.

Instrument for Data Collection
Data was collected using a well-structured questionnaire which was given to all hospital pharmacists that participated. The questionnaire comprises of three sections, namely: demographic data, knowledge of COVID – 19, knowledge of COVID -19 sign and symptom.

Method of Data Collection
The questionnaire was administered to 376. Some of the respondents did not complete their questionnaire. Most of the respondents did not need much assistance while filling the questionnaire.

Method of Data Analysis
Retrieved questionnaire was analyzed using SPSS version 27 and Graph pad. The data was represented percentages, mean as descriptive data with few inferential statistics analyses.

Inclusion criteria
All students at the Niger Delta University were qualified to participated in the study.

Ethical Approval
Ethical approval was gotten from Niger Delta University Ethics committee.

Results
A total of 376 students participated in the study and 350 participants completed the self – report questionnaire. The male participants were more of the male counterpart. A higher proportion of the students' participants were in the faculty of management sciences. Those with age range of 18 – 25 years were most common. Participants were in their 400 level and majority of the respondent's native language is ijaw (Table 1).

Table 1: Socio-demographic data

S/N	Variables	Frequency N=350	Percentage 100%
1.	**Faculty**		
	Pharmacy	75	21%
	Nursing	80	23%
	Management	150	42%
	Art	45	13%
2.	**Department**		
	Pharmacy	75	21%
	OIM	50	14%
	Accountancy	50	14%
	Fine & applied Art	15	4%
	Philosophy	15	4%
	Nursing	80	23%
	Insurance	50	14%
	ELS	15	4%
3.	**Level**		
	100	55	16%
	200	42	12%
	300	72	21%
	400	125	36%
	500	56	16%
4.	**Age**		
	18-25	219	63%
	25-30	125	35%
	30 years and above	6	2%
5.	**Gender**		
	Male	193	55%
	Female	157	45%
6.	**Ethnicity**		
	Ijaw	192	55%
	Yoruba	69	20%
	Igbo	75	21%
	Hausa	8	2%
	Others	77	22%

Participants most reported signs and symptoms of COVID – 19 during the peak, last one month and in the last week were loss of taste, loss of appetite, and loss of smell. In between were diarrhea, feverish, oral fever nasal congestion, cough, sore throat, and unusual headache (Table 2).

Table 2: Participants reported Prevalence of signs and symptoms of COVID-19

S/N	Signs and Symptoms	During the Peak N=350	In the last one Month N=350	In the last Week N=350
1	feverish	220(63%)	122(35%)	8(2%)
2	flu-like chills	198(57%)	37(11%)	115(31%)
3	Fever with an oral temperature of 38.1C or higher?	208(60%)	123(35%)	19(5%)
4	sudden loss of smell	270(77%)	72(21%)	8(2%)
5	nasal congestion (stuffy nose),	23(7%)	46(13%)	281(80%)
6	loss of taste	292(84%)	50(14%)	8(2%)
7	a cough or a chronic cough that gets worse	142(41%)	24(7%)	184(52%)
8	trouble breathing or shortness of breath	298(85%)	2(1%)	50(14%)
9	a runny nose or nasal congestion of unknown cause	269(77%)	28(8%)	53(15%)
10	sore throat	241(69%)	78(22%)	31(9%)
11	stomach ache	78(22%)	198(57%)	74(21%)
12	Diarrhea	269(77%)	81(23%)	-
13	unusual intense fatigue for no obvious reason	350(100%)	-	-
14	significant loss of appetite	241(69%)	63(18%)	46(13%)
15	unusual or unexplained muscle pain or stiffness (not related to physical activity	350(100%)	-	-
16	unusual headache	246(70%)	36(10%)	68(20%)
	Mean ($\bar{x}$)	230	61	58

Most of the participants reported adequate knowledge of COVID – 19, mostly in the areas of its origin from China, causative agent as virus with incubation period from 3 -14 days, often treated with antibiotics. Cancer patients were most affected and those above 50 years. Also, participants had adequate knowledge of COVID – 19 as contagious, worst in patients with weak immune system. There was a statistically significant different (p>0.005) between knowledge of COVID – 19 among the student population (Table 3).

Table 3: Reported knowledge of COVID -19

S/N	Knowledge of COVID-19	Frequently N=350	Percentage (100%)
1.	I have heard of COVID-19		
	Yes	350	100%
	No	-	-
2.	**COVID-19 originated from**		
	China	350	100%
	Europe	-	-
	Africa	-	-
	Don't know	-	-
3.	**COVID-19 is contagious**		
	Yes	350	100%
	No	-	-
	Don't know	-	-
4.	**Which can cause COVID-19**		
	Bacteria	53	15%
	Fungi	263	75%
	Virus	30	9%
	Parasite	4	1%
	Don't know	-	-
5.	**Incubation period of COVID-19**		
	Less than 2 days	-	-
	2-5 days	-	-
	3-14 days	350	100%
	Don't know	-	-
6.	**Treatment for COVID-19**		
	Symptom therapy	165	48%
	Antibiotics	185	52%
	No treatment	-	-
	Don't know	-	-
7.	Age group where COVID-19 is more dangerous		
	15 years	11	3%
	15-30 years	41	12%
	30-50 years	56	16%
	Above 50 years	242	69%

	Don't know	-	-
8.	**More prevalence in old individual**		
	Yes	345	99%
	No	5	1%
	Don't know	-	-
9.	More dangerous in people with weakened immune system		
	Yes	334	95%
	No	16	5%
	Don't know	-	-
10.	More dangerous in people with Cancer		
	Yes	321	92%
	No	29	8%
	Don't know	-	-
11.	More dangerous in pregnant women		
	Yes	248	71%
	No	90	26%
	Don't know	12	3%

Participants reported that they had adequate knowledge of covid -19 signs and symptoms. Most reported were symptoms of fever, cough, and sore throat among the participants. There was a statistically significant different (p>0.005) between knowledge of COVID – 19 signs and symptoms among the student population (Table 4).

Table 4: Knowledge of COVID – 19 signs and Symptoms

S/N	Signs/symptoms of COVID-19	Agree N=350	Disagree N=350	Neutral N=350
1.	Fever is a symptom of COVID-19	350(100%)	-	-
2.	Cough is a symptom of COVID-19	291(85%)	1(1%))	50(14%)
3.	Sore throat is a symptom of COVID-19	235(67%)	15(4%)	100(29%)
4.	Body pain is a symptom of COVID-19	-	50(14%)	300(86%)
5.	Diarrhea or constipation is a symptom of COVID-19.	9(3%)	21(6%)	300(91%)
6.	Headache is a symptom of COVID-19	150(43%)	2(1%)	198(56%)
	Mean ($\bar{x}$)	174	15	161

Most of the participants reported adequate knowledge of how Covid – 19 can be transmitted. Most reported were touching face, eyes, mouth, contacted with infected surface, sneezing, coughing avoid infected person, handshaking, through public transport, and poor hygiene. There no statistically significant different (p>0.006) between knowledge of COVID – 19 transmission among the student population (Table 5).

Table 5: Knowledge of Covid -19 Transmission

S/N	COVID-19 CAN be transmitted	Agree N=350	Disagree N=350	Don't Know N=350
1.	through sharing of towel	248(71%)	102(29%)	-
2.	through household Pets to humans	10(3%)	340(71%)	-
3.	through touching my face unnecessarily	100(50%)	-	-
4.	through touching my eyes unnecessarily	350(100%)	-	-
5.	through touching my mouth unnecessarily	330(91%)	30(9%)	-
6.	through sharing eating utensils like fork/knife/plates	315(90%)	35(10%)	-
7.	through going out of my home unnecessarily	250(71%)	100(29%)	-
8.	through unnecessary vacations	246(70%)	104(30%)	-
9.	through handshaking	350(100%)	-	-
10.	through kissing	322(%)	28(8%)	-
11.	through hugging	350(100%)	-	-
12.	through going to work/Class	242(69%)	98(28%)	10(3%)
13.	Through public transportation (Taxi, buses).	184(52%)	160(46%)	6(2%)
14.	through consuming outdoor food	58(17%)	290(82%)	2(1%)
15.	through poor personal hygiene	302(86%)	48(14%)	-
16.	Through sneeze and cough	350(100%)	-	-
17.	through contact with infected surfaces	350(100%)	-	-
18.	To avoid contacting COVID-19, I avoid contact with individuals suspected to be infected	350(100%)	-	-
19.	Washing of hands with soap and water can eliminate the disease cause	350(100%)	-	-
20.	The disease can be transmitted directly through cough	301(85%)	49(15%)	-
21.	The disease can be transmitted directly through the consumption of contaminated diary and meat.	314(90%)	36(10%)	-
	Mean ($\bar{x}$)	284	65	1

Discussion

The students that participated were more of the male counterpart with a higher proportion of from the faculty of management sciences and within age group of 18 – 25 years. Students at their 400 level were more common in the study.

Participants most reported signs and symptoms of COVID – 19 during the peak, last one month and in the last week were

loss of taste, loss of appetite, and loss of smell. In between were diarrhea, feverish, oral fever nasal congestion, cough, sore throat, and unusual headache. These findings reported above agreed with Amin *et al*. (2021) study carried out in Bangladesh [20]. Also, this was similar with Yousef *et al*. (2020) review with Fever 81.2%, Cough: 58.5%; Fatigue 38.5%; Dyspnea: 26.1%; and the Sputum: 25.8% [21]. The above might be due to early manifestation of the signs and symptom as they are express within 14 days. Also, the above reported knowledge of signs and symptoms of COVID – 19 might be attributed to the widespread enlightenment campaign on covid – 19 signs and symptoms in the social media by government and non-government agencies. Although, in Abayomi *et al*. (2021) study done in Lagos Nigeria, coughing was the most reported sign and symptoms of COVID – 19 [22].

Many of the participants reported adequate knowledge of COVID – 19. Such as side effects and means of transmission. Most reported were touching face, eyes, mouth, contacted with infected surface, sneezing, coughing avoid infected person, handshaking, through public transport, and poor hygiene. There was a statistically significant different between knowledge of COVID – 19 among the student population. This statistical difference was influence by pharmacy, medical and nurse students. A review by Abayomi *et al*. (2021) that covers Ethiopia, Nigeria, Cameroon, Uganda, Rwanda, Ghana, Democratic Republic of Congo, Sudan, and Sierra Leone showed evidence of knowledge related to COVID-19. Most (82%) of the participants declared they had stayed at home in recent days, 96.49% had not attended parties, funerals, or crowded places and 93.19% confirmed changes in daily routines due to COVID-19. The above findings were similar with Rasha and Kabel (2021) study carried out among undergraduate students in Egypt [23]. Also, Chesser *et al*. (2020) was indifferent with adequate knowledge of COVID – 19 [25]. This reported good knowledge of COVID – 19 signs symptoms and method of transmission must have been due to Government in all country's interventions with public enlightenment programme. Obiageli *et al*., (2021) study carried out in the United Kingdom and Nigeria equally reported good knowledge of COVID – 19 prevention protocols [26]. This was indifferent with Hager (2020), binational study in Egypt and Nigeria reported good attitude toward COVID – 19 preventive measure protocol. Udoakang *et al*., (2022) study done in West Africa countries were indifferent [27]. The above reported adequate knowledge of COVID -19 might be due to the shared information on the social media on COVID – 19. On the other hand, Kathie *et al*. (2022) study among students at Wroclaw medical University reported low knowledge of COVIDs -19 transmission which was contrary to this study findings. Many of the participants, 1797 (90.26%), reported receiving information about COVID-19 in Portuguese language through trusted health care professionals. Furthermore, television, radio, and newspapers were the other sources commonly preferred means of transmitting information on COVID-19. The study revealed that participants' knowledge influenced COVID-19 prevention and control practices.

Conclusion

This study investigated COVID – 19 signs and symptoms. Also, students' knowledge of signs and methods of COVID – 19 Transmission. Participants reported signs and symptoms of COVIDs – 19 and the most reported was loss of taste, loss of appetite, and loss of smell. The study also showed evidence of adequate of knowledge of COVID – 19 among the students investigated.

Recommendation

Despite the reported knowledge of COVID – 19 among the students, there is still need to enlighten the students on COVID – 19 on the signs, symptoms and means of transmission.

Acknowledgement

The authors are most grateful to all students that fill out the self-reported questionnaire. No conflict of interest was declared among the authors after reading the manuscript.

References

1. Assiri Al-Tawfiq JA, Al-Rabeeah AA, *et al*., "Epidemiological, demographic, and clinical characteristics of 47 cases of Middle East respiratory syndrome coronavirus disease from Saudi Arabia: a descriptive study," The Lancet Infectious Diseases. 2013;13(9):752-761.
2. Gorbalenya AE, Baker SC, Baric RS, *et al*. Severe acute respiratory syndrome-related coronavirus: The species and its viruses – a statement of the Coronavirus Study Group," BioRxiv; c2020.
3. Sahin AR, Erdogan A, Agaoglu PM, *et al*. novel coronavirus (COVID-19) outbreak: a review of the current literature," Eurasian Journal of Medicine and Oncology. 2019;4(1):1-7.
4. Adela N, Nkengazong L, Ambe LA, Ebogo JT, Mba FM, Goni HO, *et al*. Knowledge, attitudes, practicesof/towards COVID 19 preventive measures and symptoms: A cross-sectional study during the exponential rise of the outbreak in Cameroon. PLoS neglected tropical diseases. 2020 Sep 4;14(9):e0008700.
5. Adhena G, Hidru HD. Knowledge, Attitude, and Practice of High-Risk Age Groups to Coronavirus Disease-19 Prevention and Control in Korem District, Tigray, Ethiopia: Cross-Sectional Study. Infection and Drug Resistance. 2020 Oct 23:3801-3809.
6. Amanat F, Krammer F. SARS-CoV-2 Vaccines: Status Report. Immunity. 2020;52(4):583-589. [CrossRef]
7. Blendon RJ, DesRoches CM, Cetron MS, Benson JM, Meinhardt T, Pollard W. toward the use of quarantine in a public health emergency in four countries. Health Aff (Millwood), 2006, w15-w25.
8. Biscayart C, Angeleri P, Lloveras S, Chaves TSS, Schlagenhauf P, Rodríguez-Morales AJ. "The next big threat to global health? 2019 novel coronavirus (2019-nCoV): what advice can we give to travellers? – Interim recommendations January 2020, from the Latin. 2020 Jan 1;33:101567.
9. American society for travel medicine (SLAMVI)," Travel Medicine and Infectious Disease. 2020;33:101567.
10. Huang C, Wang Y, Li X, *et al*., Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China, The Lancet. 2020;395(10223):497-506.

11. Li C, Yang Y, Ren L. Genetic evolution analysis of novel coronavirus and coronavirus from other species, Infection, Genetics and Evolution, 2019, vol. 82.
12. Chen N, Zhou M, Dong X, Qu J, Gong F, Han Y, *et al*. Epidemiological and clinical characteristics of 99 cases of 2019 novel Corona virus pneumonia in Wuhan, China: a descriptive study. The Lancet. 2020;395(10223):507-513.
13. Hui DS, Azhar I, Madani E, Ntoumi TA, Kock F, Dar R, *et al*. The continuing 2019-nCoV epidemic threat of novel coronaviruses Virus emergentes y reemergentes: unnuevoreto para la saludmundial del milenio 3 to global health-The latest 2019 novel coronavirus outbreak in Wu han, China. Int J Infect Dis. 2020 Feb 1;91:264-266.
14. Hussain TA. Education and COVID-19 in Nigeria: Tackling the digital divide. London: SOAS University of London; c2020.
15. Xia XY, Wu J, Liu HL, Xia H, Jia B, Huang WX. Epidemiological and initial clinical characteristics of patients with family aggregation of COVID-19. J Clin Virol. 2020;127:104360.
16. Yamey G, Schäferhoff M, Hatchett R, Pate M, Zhao F, McDade KK. Ensuring global access to COVID-19 vaccines. Lancet. 2020;395(10234):1405-1406. [CrossRef]
17. Yang AP, Liu JP, Tao WQ, Li HM. The diagnostic and predictive role of NLR, d-NLR and PLR in COVID-19 patients. Int Immunopharmacol. 2020;84:106504.
18. Zhu J, Ji P, Pang J, Zhong Z, Li H, He C, *et al*. Clinical characteristics of 3062 COVID-19 patients: A meta-analysis. J Med Virol 2020 Apr 15. https://doi.org/10.1002/jmv.25884. Online ahead of print; c2020.
19. Zhu FC, *et al*. Safety, tolerability, and immunogenicity of a recombinant adenovirus type-5 vectored COVID-19 vaccine: A dose-escalation, open-label, non-randomised, first-in-human trial. Lancet. 2020;395(10240):1845-1854. [CrossRef]
20. Amin T, Hasan MM, Bhuiya M. Prevalence of COVID-19 Associated Symptoms, Their Onset and Duration, and Variations Among Different Groups of Patients in Bangladesh. Public Health, 29 September 2021. Sec. Infectious Diseases – Surveillance, Prevention and Treatment; c2021. https://doi.org/10.3389/fpubh.2021.738352.
21. Yousef A, Sepand M, Hadiseh H. Determine the most common clinical symptoms in COVID-19 patients: a systematic review and meta-analysis. PMCID: PMC7595075; c2020.
22. Abayomi, *et al*. Presenting Symptoms and Predictors of Poor Outcomes Among 2,184 Patients with COVID-19 in Lagos State, Nigeria. International Journal of infectious Disease; c2021.
23. Nwagbara, *et al*. Knowledge, attitude, perception, and preventative practices towards COVID-19 in sub-Saharan Africa: A scoping review; c2021. https://doi.org/10.1371/journal.pone.0249853.
24. Maria, *et al*. Knowledge, attitudes and practices towards COVID-19: A cross-sectional study in the resident cape-verdean population. Social Sciences & Humanities Open. 2021;4(1):100184
25. Rasha, Kabel. Awareness and knowledge of undergraduate dental students about the signs and symptoms of Corona viral infection (COVID-19), and the required infection control measures to prevent its spread.Bulletin of the National Research Centre. 2021;45 Article number: 32.
26. Chesser, *et al*., Assessment of COVID-19 Knowledge Among University Students: Implications for Future Risk Communication Strategies. 2020;47(4):540-543. https://doi.org/10.1177/1090198120931420
27. Obiageli, *et al*., Knowledge, Attitude, and Perception of COVID-19 among Maritime Workers in the United Kingdom and Nigeria during the First Wave of the Pandemic. Journal of Biosciences and Medicines. June 2021;9(6):114-126.
28. Udoakang, *et al*., Knowledge, attitude and perception of West Africans towards COVID-19: a survey to inform public health intervention. BMC Public Health. 2022;22(1):445.