PERCEPTION AND IMPACT OF COVID-19 PROTOCOLS ON THE LIFESTYLE OF PATIENTS ATTENDING GENERAL OUTPATIENT DEPARTMENT OF A TERTIARY HOSPITAL IN SOUTH EAST NIGERIA

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Abstract: **On 31 December 2019, the WHO was informed of a severe respiratory disease of unknown cause in Wuhan City, China. This was later identified as a coronavirus and named COVID-19. Due to its high mortality rate, the WHO and governments established prevention protocols to be followed by the public to curtail its spread. This study was carried out in the GOPD, COOUTH, Awka, Nigeria to determine the impact of the pandemic and its prevention protocols on the lifestyle of patients. Preventive practices observed by the patients during the pandemic included cleaning hands with soap and water or alcohol-based sanitizer (100%), covering mouth with bent elbow when sneezing or coughing (96.2%), cleaning and disinfecting surfaces frequently (86.7%). Some respondents (40.0%) had been vaccinated against COVID-19. The greater impact of the pandemic was observed in income as 90.5% of respondents had less income, 81.4% cooked more at home, while 76.2% and 88.6% had improved relationship with God and family members/friends respectively. Some respondents had tested positive to COVID-19 (15.2%), 17.1% think that they may have been infected but did not do the test while 67.6% have not been infected or don't know if they have been.**

Keywords: **attitude, COVID-19, impact, knowledge, lifestyle, perception, prevention, protocol.**

I.   INTRODUCTION

The WHO China Country Office was informed of cases of pneumonia of unknown aetiology on 31 December 2019, detected in Wuhan City, Hubei Province of China. The outbreak was linked to a wholesale fish and live animal market indicating a link to exposure to animals. The symptoms were common to several respiratory diseases.[1] A novel coronavirus was identified as the cause on 7 January 2020 and was temporarily named "2019-nCoV". Coronaviruses (CoV) are a large family of viruses that cause illness that range from common cold to severe diseases. A novel coronavirus (nCoV) is a new strain which has not been previously identified in humans. This new virus was later named the "COVID-19 virus".[2]

WHO Director-General, on 30 January 2020, declared the novel coronavirus outbreak a public health emergency of international concern (PHEIC), WHO's highest level of alarm. By that time there were 98 cases and no deaths in 18 countries outside China. But by 11 March 2020, more than 118,000 cases have been recorded in 114 countries and 4291 deaths had been reported.[3] Because of this high mortality rate, the WHO acted fast to ensure that this virus was curtailed. They set out protocols for the public to follow to prevent transmission. These include getting vaccinated as soon as it is your turn and following local guidance on vaccination. Others are keeping physical distance of at least 1 metre from others, even if they don't appear to be sick, avoiding crowds and close contact, wearing a properly fitted mask when physical distancing is not possible and in poorly ventilated settings. Clean your hands frequently by washing with soap and water or with alcohol-based hand rub. Cover your mouth and nose with a bent elbow or tissue when coughing or sneezing. Dispose of used tissues immediately and clean hands regularly. If you develop symptoms or test positive for COVID-19, self-isolate until you recover.[4]

Prior to the first case of COVID-19 in Lagos, Nigeria on February 20, 2020, many Nigerians regarded the disease as a distant problem that cannot reach their shores. Misinformation and stories regarding the COVID-19 has further jeopardize patients' attitudes and adherence to COVID-19 protocols.[5] These protocols could have also altered the clinic attendance and the patient-health care provider relationship. These protocols would have affected each patient in a peculiar way, depending on their occupation, level of education and the type of care needed.

A study carried out among outpatients and inpatient at University Medical Centre, Ho Chi Minh City, Vietnam showed that almost all participants had sufficient knowledge (93.7%).[6] High knowledge and positive attitude were reported in more than half of the study population in India, with a proportion of 58.6% and 62.1%, respectively.[7] According to a study in Saudi Arabia, the majority of the study participants were knowledgeable about COVID-19.[8] In a study in Kenya, the majority of the respondents (83.97%) had very good knowledge about COVID-19. Social media platforms served as a major source of information for 55% of the respondents.[9]

According to a study among Egyptians, most (70.2%) had satisfactory knowledge of COVID-19.[10] High educational level was associated with good knowledge. This corroborates with another study in Nigeria where there was a significantly higher knowledge level among correctional officers sampled with higher educational qualifications [11]. The majority (84.7%) of respondents in Sudan had a good level of knowledge. Age (≤17 years), education (primary or lower school), low-income earner, and those who reside outside Khartoum were related to lower COVID-19 knowledge score.[12] A cross-sectional study conducted across all seven sub-districts of the Kitampo North Municipal showed that about 98% of the study participants demonstrated high level of awareness regarding covid-19.[13] Among respondents studied in Cameroon, only 21.9% had very good knowledge about COVID-19, while others had intermediate (43.8%), poor (34.4%), and no knowledge (11.92%) [14].

In a study in Bangladesh [15] immediately after the lockdown were implemented and during the peak period of the outbreak. Online-based survey showed that 62.3% of participants had positive attitudes. In a study in Yaoundé, Cameroon, the overall score was 84.19% for knowledge, 69% for attitude, and 60.8% for practice towards COVID 19 [16]. A survey of Malaysian residents found that most participants held positive attitudes toward the successful control of COVID-19 (83.1%) [17]. A study among Egyptians showed good knowledge but poor adherence to COVID-19 preventive measures. Poor practice was found associated with young age, unemployment, and low educational level [18].

A survey assessed the compliance and attitude of adults residing in the Southern African Kingdom of Eswatini to government activities and travel measures aimed at controlling the spread of COVID-19. Most respondents (70%) were reportedly compliant to public health and social measures [18]. A study conducted in supermarkets in Kampala Capital City and Mukono Municipality of Uganda found that only 16.6% (38/229) of the supermarkets complied with the COVID-19 prevention and control guidelines. This study revealed low compliance with COVID-19 guidelines [19]. A Community based study conducted in Oromia, Ethiopia showed that the overall level of adherence to COVID-19 preventive measures in the study area was low. Age, level of education, occupation, and knowledge were factors associated with level of adherence to COVID-19 preventive measures.[20] Market men and women in Ogun State, Nigeria possessed low level of adherence to COVID-I9 Protocol.[21]

Hospitalizations due to non-coronavirus disease 2019 respiratory illness decreased dramatically after social distancing was implemented in a high-risk population in rural Alaska. This demonstrates the potential secondary benefits of implementing social distancing and travel restrictions on respiratory illnesses.[22] Findings of recent study conducted in New Zealand showed that after 9 months of lockdown, the incidence of influenza decreased 79-fold. They also reported a significant

reduction in the incidence of other respiratory viruses during post-lockdown in comparison with the same time in the past year.[23] A reduction in the number of people infected with the influenza virus in 2020 compared to the previous year was also observed in a study from Japan.[24] A study in Hong Kong showed that non-pharmaceutical interventions (including border restrictions, quarantine and isolation, distancing, and changes in population behaviour) were associated with reduced transmission of COVID-19 and are also likely to have substantially reduced influenza transmission in early February 2020. [25] A study in Taiwan showed that policies aimed at reducing COVID-19 transmission also reduced significantly the transmission and occurrence of influenza.[26]

Among students in India, the impact of COVID-19 was seen in time spent on online classes and self-study, medium used for learning, sleeping habits, daily fitness routine, weight, social life, and mental health. In order to deal with the resulting stress and anxiety, the students adopted different coping mechanisms and also sought help from those close to them. They also spent time on social media platforms.[27]

About 30% of German and Swiss employees reported that their work and private life had worsened. Living in a single household, reduction in leisure time, and changes in quantity of caring duties (i.e., increase or decrease) were strongly associated with the negative impact. Mandatory short-time workers and those who lost their job felt the negative impact the most. On the contrary, about 10% reported improvements in work and 13% in private life. Some employees (10%) reported a positive impact of the pandemic on their work life. Those working in home-office, particularly those experiencing it for the first time, felt the positive impact the most. Mandatory short-time work, living with a partner or family, increases in leisure time and caring duties were strongly associated with the positive impact.[28]

The impact of COVID-19 pandemic on the lifestyle, mental health and quality of life of adults in South Korea showed a significant decline in physical and other activities, including activities of daily living, leisure, social activity, and education. However, there were no significant changes in nutrition, except in the consumption of carbohydrates and minerals. Participants reported that their quality of life and mental health had decreased after the pandemic struck.[29]

II. RESEARCH METHODS

2.1 Description of Study Area

The study area was the General Outpatient Department (GOPD) of Chukwuemeka Odumegwu Ojukwu University Teaching Hospital (COOUTH), Awka, Anambra State, Nigeria. The GOPD clinic runs from Monday to Friday and has a daily average of 70 attendees, which includes new and returning patients.

2.2 Study Design

A cross sectional descriptive study was carried out.

2.3 Study Population

Patients attending the GOPD in COOUTH Awka.

2.4 Determination of sample size

The sample size was calculated using the formula:

$$n = \frac{\frac{Z^2 \times P(1-P)}{e^2}}{1 + \left(\frac{Z^2 \times P(1-P)}{e^2 N}\right)}$$

Where:

n = minimum sample size.

Z = standard normal deviate (aka Z-score).

This was set at 1.96 which corresponds to the 95% confidence level.

P= Prevalence from premium study. Therefore, p = 93.7% i.e. 0.937.[30]

e = margin of error that was sit at 0.05.

N= the estimate of population size.

Inputting the above data formula for sample size at;

$$n = \frac{\frac{Z^2 \times P(1-P)}{e^2}}{1 + \left(\frac{Z^2 \times P(1-P)}{e^2 N}\right)}$$

$$n = \frac{\frac{1.96^2 \times 0.937(1-0.937)}{0.05^2}}{1 + \left(\frac{1.96^2 \times 0.937(1-0.937)}{0.05^2 x 1484}\right)}$$

 n = 85.50 (approximately 86 patients)

Estimated 10% attrition of 86 is equal to 8.6 (approximately 9 patients) giving a total sample size was 95 patients.

2.5 Sampling Method

Systematic sampling technique was used.

2.6 Data Collection

Data was collected in September, 2022 using self-administered, semi-structured questionnaires.

2.7 Data Analysis

Data was analysed using statistical package for social sciences (SPSS) version 21.0.

2.8 Ethical Consideration

Participation was voluntary and assurance was given with regards to confidentiality. Verbal consent was obtained from the respondents, after they were informed about the research and its objectives.

III.   RESULTS

Table 1 shows the socio-demographic characteristics of respondents. The mean age of the participants was 28.3 (±7.2) years. Majority of the participants (27.8%) were within the middle age category of 24 to 29 years.

Table 1: Sociodemographic characteristics of respondents

Characteristics	N=105 Frequency (n)	Percentage (%)
Age		
20-24	16	14.8
25-29	30	27.8
30-34	35	32.4
35-39	17	15.7
Mean (+/-SD)	**28 (±7.2)**	
Sex		
Male	49	45.4
Female	56	51.9
Ethnicity		
Igbo	83	79.9
Hausa	7	6.5
Yoruba	15	13.9

Marital status		
Single		29.5
Married	61	58.1
Separated/ Divorced	13	12.4
Religion		
Christian	90	85.7
Islamic	12	11.4
Traditional	3	2.9
Highest educational level		
Primary school	18	17.1
Secondary school	23	21.9
Diploma	12	11.4
University degree	38	36.2
Postgraduate	14	13.3
Occupation		
Student	20	19.0
Civil servants	16	15.2
Job seeker/unemployed	19	18.1
Retired	38	36.2
Self employed	12	11.4

As shown in Table 2, majority of the respondents (87.6%) correctly identified that the nose is a route of transmission of COVID-19. Also sneezing or coughing from an infected person is an important source of infection (98.1%).

Table 2: Knowledge of routes of transmission and sources of infection of COVID-19

	Frequency (N=105)	
	Yes (%)	**No (%)**
Routes of transmission		
Nose	92 (87.6)	13 (12.3)
Mouth	77 (73.3)	28 (26.7)
Eye	18 (17.1)	87 (82.9)
Ears	25 (23.8)	88 (76.1)
Skin	84 (80.0)	21 (20.0)
Hair	13 (12.4)	92 (87.6)
Source of infection		
Sneeze or cough from an infected person	103 (98.1)	2 (1.9)
High touch surface	101 (96.2)	4 (3.8)
Contaminated hands	98 (93.3)	7 (6.7)
Clothing	10 (9.5)	95 (90.5)
Witchcraft	0 (0.0)	105 (100.0)

Table 3 shows the responses to knowledge of preventive measures for COVID-19 virus infection. The most commonly known measures were wearing face mask (76.2%), cleaning high touch surfaces (61.0%), washing hands with soap and water (57.1%), and working from home (57.1%).

Table 3: Knowledge of preventive measures for COVID-19 infection

Which of these are preventive measures for COVID-19 virus?	Frequency (N=105)		
	Yes (%)	Unsure (%)	No (%)
Wearing face mask when ill	80 (76.2)	18 (17.1)	7 (6.7)
Cleaning high touch surfaces e.g. doors, handles etc.	64 (61.0)	24 (22.9)	17 (16.2)
Washing hand for 20 seconds with soap and water	60 (57.1)	34 (32.4)	11 (10.5)
Working from home	60 (57.1)	26 (24.8)	19 (18.1)
Using alcohol-base hand sanitizer	56 (53.3)	36 (34.3)	13 (12.4)
Avoiding gathering of more than ten persons	56 (53.3)	36 (34.3)	13 (12.4)
Taking COVID-19 vaccine	53 (50.5)	43 (41.0)	9 (8.6)
Staying indoors	50 (47.6)	37 (35.2)	18 (17.1)
Distance learning	48 (45.7)	45 (42.9)	12 (11.4)
Covering mouth when sneezing or coughing with the elbow	46 (43.8)	42 (40.0)	17 (16.2)
Standing 6 feet from another person	41 (39.0)	39 (37.1)	25 (23.8)
Drinking warm water	32 (30.5)	51 (48.6)	22 (21.0)
Drinking bottled water only	29 (27.6)	41 (39.0)	35 (33.3)

Table 4 shows the participants' opinion about COVID-19 and attitude towards government's protocols to halt its spread. Majority of the participants agree with prompt reporting of any suspected cases and isolation in isolation centres 103 (98.1%) and 98 (93.3%) agree with restricting of mass gathering outside the workforce to on more than 50 persons, and quarantine of passengers from other countries.

Table 4: Attitude towards protocols implemented by government to halt the spread of COVID-19

Variables	Frequency (N=105)		
	Agree n(%)	Unsure n(%)	Disagree n(%)
Prompt reporting of any suspected cases and isolation in isolation centre	103 (98.1)	1 (1.0)	1 (1.0)
Quarantine of passenger from other countries.	98 (93.3)	5 (4.8)	2 (1.9)
Restricting of mass gathering outside the workforce to on more than 50 persons	98 (93.3)	3 (2.9)	4 (3.8)
Ban on international flights	92 (87.6)	5 (4.8)	8 (7.6)
COVID-19 is a serious disease	59 (56.2)	21 (20.0)	25 (23.8)
Initial lockdown of non-essential activities	43 (41.0)	36 (34.3)	26 (24.8)
Closure of schools	51 (48.6)	30 (28.6)	24 (22.9)
COVID-19 vaccine is safe	51 (48.6)	24 (22.9)	30 (28.6)
COVID-19 vaccine should be mandatory	40 (38.1)	30 (28.6)	57 (54.3)

Table 5 shows the practices and protocol of COVID-19 that participants adhered to or are willing to adhere to if need be. Hand cleaning by washing with soap and water or by using alcohol-based sanitizer was the protocol most complied with by 105 (100%) of the participants. Only 40.0% of the respondents got vaccinated against COVID-19.

Table 5: Adherence to COVID-19 prevention protocols

	Frequency (N=105)	
	Yes (%)	No (%)
Cleaning hands with soap and water or alcohol-based sanitizer	105 (100.0)	0 (0.0)
Wearing properly filled mask	104 (99.0)	1 (1.0)
Covering mouth when sneezing or coughing with the elbow	101 (96.2)	4 (3.8)
Physical distance of at least 1m from others	99 (94.3)	6 (5.7)
Self-isolation if I develop symptoms	98 (93.3)	7 (6.7)
Cleaning and disinfecting surface frequently.	91 (86.7)	14 (13.3)
Got vaccinated	42 (40.0)	63 (60.0)

Table 6 shows the impact COVID-19 pandemic on lifestyle. Majority of the respondents 72 (68.8%) had substantially less income. Many of the respondents (53.3%) prepared substantially more meals at home than before the pandemic. Relationship with family members was substantially more in 47.6% of the respondents while relationship with God was substantially more in 44.8%.

Table 6: Impact COVID-19 pandemic on lifestyle

	Frequency (N=105)				
	Substantially less (%)	A bit less (%)	No changes (%)	A bit more (%)	Substantially more (%)
Income	72 (68.6)	23 (21.9)	10 (9.5)	0 (0.0)	0 (0.0)
Use of traditional/alternative medicine	41 (39.0)	25 (23.8)	30 (28.6)	9 (8.6)	9 (8.6)
Eating take-away food	40 (38.1)	63 (60.0)	2 (1.9)	0 (0.0)	0 (0.0)
Frequency of exercise	17 (16.2)	25 (23.8)	25 (23.8)	18 (17.1)	20 (19.0)
Duration of screen time	7 (6.7)	5 (4.8)	19 (18.1)	67 (63.8)	7 (6.7)
Weight	6 (5.7)	7 (6.7)	16 (15.2)	58 (55.2)	18 (17.1)
Cooking at home	3 (2.9)	3 (2.9)	3 (2.9)	40 (28.1)	56 (53.3)
Level of cleanliness	2 (1.9)	5 (4.8)	34 (32.4)	19 (18.1)	45 (42.9)
Quality of sleep	1 (1.0)	5 (4.8)	16 (15.2)	48 (45.7)	35 (33.3)
Relationship with God	1 (1.0)	2 (1.9)	22 (21.0)	33 (31.4)	47 (44.8)
Relationship with family and friends	0 (0.0)	0 (0.0)	12 (11.4)	43 (41.0)	50 (47.6)

Figure 1 shows that 15.2% of participants had tested positive to COVID-19, 17.1% think that they may have been infected but did not do the test while 67.6% have not been infected or don't know if they have been.
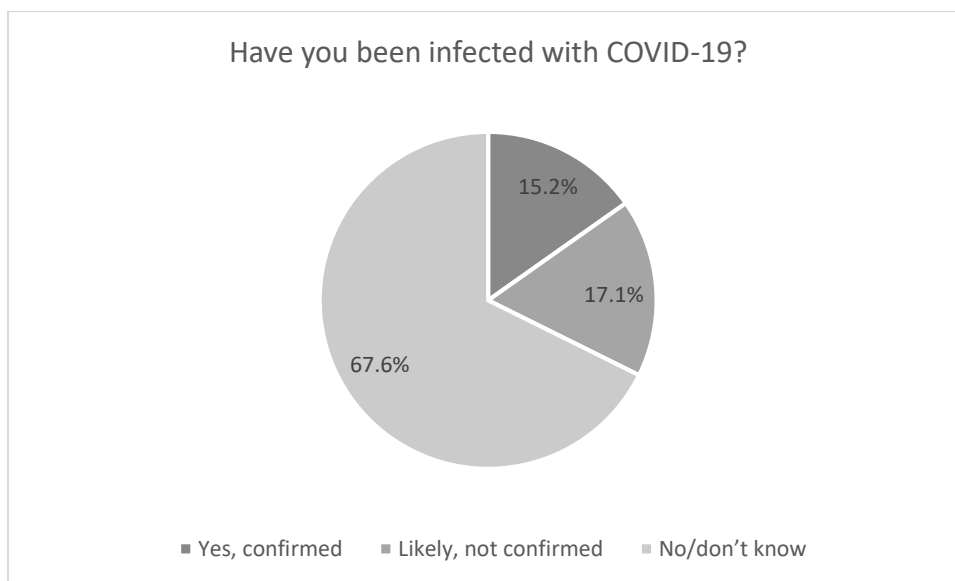

Figure 1: Pie showing infection with COVID-19

IV. DISCUSSION

The majority of our respondents correctly identified the sources and the routes of infection for COVI-19. Similarly, the majority of patients attending the outpatient department in a study carried out in Vietnam had sufficient knowledge regarding COVID-19.[30] Our respondents have high educational level with 11.4% having a diploma, 36.2% having undergraduate degree, while 13.3% have postgraduate degree. This makes our findings similar to that of a study in Egypt which showed that high educational level was associated with satisfactory knowledge of COVID-19.[11]

Findings in this study revealed that majority of the respondents agreed with the prevention protocols for COVID-19 instituted by the government. This is similar to the findings of a study done in Malaysia where most participants (83.1%) had positive attitude towards the successful control of COVID-19.[17] This is also comparable to the findings of a study carried in Eswatini which assessed the compliance and attitude towards government policies, activity and travel measures aimed at controlling the spread of COVID-19. Level of education was associated with knowledge about the health hazards of COVID-19.[18] Our results showed most patients attending the GOPD clinic of COOUTH had good knowledge of

COVID-19. They also possess positive attitude and good practice towards COVID-19. However, there were areas where poor knowledge, negative attitudes and poor practices were observed.

Our study found that the respondents' relationship with family and friends increased (substantially more, 47.6% and a bit more, 41.0%) with no respondents reporting a decrease. This finding was supported by a study among students in India where the coping mechanism for the resulting stress and anxiety was to seek help from those close to them.[27] They also reported weight gain which was same as our study. About 30% of German and Swiss employees reported that their work and private life had worsened. On the contrary, about 10% reported improvements in work and 13% in private life. Some employees (10%) reported a positive impact of the pandemic on their work life.[28] Similarly, 68.6% of our respondents reported having substantially less income, while 21.9% had a bit more income during the pandemic. However, none of our respondents had more income during the pandemic.

A study among of adults in South Korea showed a significant decline in physical and other activities, including activities of daily living, leisure, social activity, and education. There were no significant changes in nutrition, except in the consumption of carbohydrates and minerals. Participants reported that their quality of life and mental health had decreased after the pandemic.[29] Our study did not show a significant decline in frequency of exercise and other physical activities as some participants had an increase while others had a decrease in frequency of exercise. This was same for leisure activities as shown by the duration of screen time. However, time spent with friends and family substantially improved. Our respondents also prepared more meals at home.

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