

Knowledge, Attitude and Practices of Students of Pharmacy in a Tertiary Institution in Rivers State, Nigeria, Towards the Covid-19 Pandemic

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ABSTRACT

Study Background: This study assesses the knowledge, attitude, and practices of undergraduate students in the Faculty of Pharmacy, Madonna University, Elele, Rivers State, Nigeria, towards the COVID-19 pandemic. Pharmacists work in the healthcare system, and they play a significant role in drug information and dissemination, inpatient care, and the proper dispensing of drugs. There is the need to increase their interest and enthusiasm in their profession and public health and disease response, especially on COVID-19 response in the country.

Methods: The survey used the stratified sampling method, and each class formed a stratum. Structured questionnaires were distributed among students in the 2nd to the 5th academic year (200 to 500 study levels) of Pharmacy at Madonna University. Then, simple random sampling was used within each stratum, with each student in the various levels having the same probability of being chosen at any stage during the sampling process. The objective was to improve the precision of the sampling by reducing sampling error. Questionnaires were self-administered to investigate students' demographic data: their ages, sex, marital status, religion, study levels, their knowledge on COVID-19, their attitude to it, and their practices towards the disease. Data were entered into a Microsoft-Excel worksheet and analyzed using Statistical Package for the Social Sciences (SPSS) version V27.

Results: More than half of the respondents had adequate knowledge about COVID-19, on the symptoms, prevention, repositioned drugs, and the age group most affected by the disease. Of the respondents, 96.9% confirmed that COVID-19 started in Wuhan, China, that coronavirus is the cause of the disease (93.8%) and that the elderly was the most severely affected by the disease (78.7%). Respondents (45.7%) agreed to the importance of following the Centre for Disease Control (CDC) recommendations, such as hand washing and social distancing, self-quarantine for 14 days, and prompt reporting to the Nigeria Centre for Disease Control as measures for reducing the transmission of COVID-19. Some new drugs suggested for the management of COVID-19 had been known before the pandemic outbreak. As pharmacy students, respondents were requested to provide information on the newly repositioned drugs and their previous use in medicine. Of the respondents, 74% could explain drug repositioning and some recommended drugs, such as Chloroquine (95%), the antimalarial agent, Ritonavir (80%), and Lopinavir (60%), antiviral agents, and Tocilizumab (60%), an immunomodulatory agent. The students would like the government to increase measures to combat COVID-19 disease and provide basic facilities for public and private medical frontline workers, increase awareness programs on the condition, and increase COVID-19 testing centers.

Conclusion: The outbreak of COVID-19 has continued to task the whole healthcare workforce. Pharmacists played a significant role in reducing the burden of the disease during the COVID-19 pandemic lockdown in the country by ensuring the administration of the right drug therapy to patients, creating awareness on the disease, informing on the prevention guidelines, and clarifying misconceptions on the condition. As COVID-19 rages on, with its different variants, it is desirable to stimulate the pharmacy students, early in their profession, on the future roles they will play in the healthcare system and the effort towards eliminating the disease.

Keywords: COVID-19; Pandemic lockdown; Pharmacy students; Drug repositioning; SARS-COV-2

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INTRODUCTION

The discovery of the Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) responsible for COVID-19 came up in January 2020, and the World Health Organization, (WHO) in collaboration with partners, expert networks, national authorities, institutions, and researchers, have been monitoring and assessing the evolution of the disease [1,2]. The first case of COVID-19 in Nigeria was in February 2020 [3]. Since then, the Nigeria Centre for Disease Control (NCDC), and the world health agencies such as the WHO has developed a system of diagnosing and managing patients infected with the disease [4]. Efforts to reduce the spread of the COVID-19 are increasing, but the virus has continued to spread. There were up to 191,773,590 confirmed cases, including 4,127,963 deaths by July 2021 [5]. The rate of disease spread is made worse by the emergence of COVID-19 variants, the alpha, beta, gamma, delta, omicron variants, and much more, making the disease of public health concern in the world and especially in Nigeria, that has been reported the delta and omicron variants of COVID-19 [6,9]. The need to evaluate the knowledge, attitude, and perception of the students of pharmacy, future health professionals, who will engage in disease management including that of COVID-19, is urgent, as this will contribute to the strengthening of the healthcare system in the ongoing response to the COVID-19 pandemic.

MATERIALS AND METHODS

Study design

Structured questionnaires were distributed among students in the 200 to 500 study levels of pharmacy at Madonna University, Elele, Rivers State, Nigeria. Rivers State is one of the 36 States of Nigeria, and it is in the South-south region.

The stratified sampling method was employed in the survey with each class to form a stratum. Then, simple random sampling was employed within each stratum with each student in the various levels having the same probability of being chosen at any stage during the sampling process. The objective was to improve the precision of the sampling by reducing sample error.

Questionnaires were self-administered to investigate students' demographic data and to obtain information on their ages, sex, marital status, religion, and study levels. Students were asked about their knowledge of COVID-19, their attitude, and their practices on the disease. There are about 740 pharmacy students in the 2nd academic year of study (200 level) to the 5th and final academic year of study (500 level). Information was obtained from 260 respondents in these classes who were on-campus at the time of the study. They were briefed on the significance of the study and made to recall their actions at the time of the COVID-19 pandemic lockdown, March to August 2020, before they returned to the university campus in October 2020.

Data analysis

The data was entered into a Microsoft-Excel worksheet and analyzed using Statistical Package for the Social Sciences (SPSS) version V27.

The sample size was determined using Taro Yamane's formula [10].

The data obtained were entered into a Microsoft-Excel worksheet and analyzed using Statistical Package for the Social Sciences (SPSS) version V27.

Inclusion criteria

- Pharmacy students within the class of 200 to 500 study levels.
- Pharmacy students present in the school during the time of administration of the questionnaire and who agreed to participate in the study.

Exclusion criteria

- Non-Pharmacy students.
- Pharmacy students who were not on campus at the time of the study.

RESULTS

Demographic data

The respondents were more females (53.5%) than males. Most of them, 88.8%, were unmarried. For age differentiation, 39.3% of respondents were of ages 16-20 years, 57.0% within 21-25 years, and 3.7% within 26-30 years. Most of the respondents, 96.1%, were of the Christian faith, 1.9% Muslims, and 2% did not oblige (Table 1).

Respondents' year of study

The respondents were 24.23% in year 200; 14.23% in year 300; 32.69% in year 400 and 28.85% in year 500. The total number of students was grouped as one data and not differentiated into class levels because there were no significant differences in the class data.

Respondents' knowledge and attitude towards COVID-19

The knowledge of the respondents on COVID-19 disease was evaluated using multiple questions. Most of the respondents (96.9%) understood that COVID-19 started in Wuhan, China; that the coronavirus is the cause of the disease (93.8%), and that the elderly was most badly affected by the disease (78.7%). The common symptoms of COVID-19 stated by the respondents include chronic cough, fever, fatigue, body ache, dyspnoea, ageusia, anosmia, wheezing 88.8%. The respondents said that there is a need for symptomatic support to aid recovery for COVID-19 patients.

The drugs used in the management of COVID-19 had been in existence before the outbreak of the pandemic. As future pharmacists, respondents were asked to provide information on the drugs being repositioned for COVID-19. A majority (74%)

Table 1: Demographic Data of Respondents.

| Sex Difference | Respondents | % Response |
|------------------------|-------------|------------|
| Male | 120 | 46.15 |
| Female | 138 | 53.08 |
| No response | 2 | 0.77 |
| Academic year of Study | | |
| 200 | 63 | 24.23 |
| 300 | 37 | 14.23 |
| 400 | 85 | 32.69 |
| 500 | 75 | 28.85 |
| Age range | | |
| 16-20 | 103 | 39.62 |
| 21-25 | 146 | 56.15 |
| 26-30 | 11 | 4.23 |
| 41-50 | 0 | 0 |

of the respondents knew the meaning of drug repositioning and specified some repositioned drugs. These include the antimalaria drug, Chloroquine (95%), antiviral agents, Ritonavir and Lopinar (80%), and the immunomodulatory agent, Tocilizumab (60%).

Respondents' attitude and practices towards COVID-19

Most respondents (99.6%) expressed doubt on the true nature of the disease and described it as a myth. This is because at the time of the survey in 2020 they had not met with real cases of COVID-19 infected persons. Such responses suggest a need for increased and continuous awareness programs by the government and by the school authorities.

On NCDC recommendations and keeping to recommendations, 45.7% of the respondents agreed to the importance of keeping to the rules, such as hand washing, social distancing, self-quarantining for 14 days, and prompt reporting of any suspected case, as measures for the control of the COVID-19 transmission.

For COVID-19 mitigation strategies, the respondents suggested that the government should provide more health facilities for both the public and private healthcare institutions, and that the frontline medical personnel should always be provided with prompt and adequate facilities, such as personal protective equipment for safety and efficiency and that there should be extra disease awareness programs which should be extended to the grassroots.

DISCUSSION

The individual's knowledge of a particular disease can be affected by various factors such as the gravity of the illness, the severity of its spread, and the fatality rate. People become more conscious when there is a greater disease risk and then seek adequate and appropriate information about the disease [11-13]. The students reflected a good understanding of the disease and clearly stated the symptoms and the need to report illnesses to the NCDC. The assumption in this study is that the interest and knowledge of the pharmacy students on COVID-19 could form a good assessment of their understanding of the disease and then reflect the adequacy of information available to them from literature and other sources on the disease in the country.

Pharmacy is a profession that is located within the health care system and health, hygiene, and pharmacy are inextricably linked [14]. The new and recent outbreak of the Omicron variant of COVID-19 is challenging to the already overtaken healthcare system. This variant has been reported to be deadly too [8] and it is desirable to stimulate the pharmacy students, early in their profession, on their future roles in the fight against the disease. The students reflected a good understanding of the disease and clearly stated the symptoms, and the need to report illnesses to the NDDC. Many of the respondents were aged 21-25 (56.15%) and fit into the age group of the youths in the tertiary institutions in the country now [15]. At the time of the survey, the ongoing 400 academic year curriculum was on disease epidemiology and clinical therapeutics, and this might have stimulated the students' interest in participating in the study.

The students in this study were eager to know more about COVID-19. They showed expected levels of knowledge on COVID-19 and offered proper strategies to prevent its spread. In a similar survey carried out with medical students in some universities in Jordan, their expertise on COVID-19 was adequate [16] while for Pharmacy and Pharm. D students, the researchers concluded that the student's level of knowledge was unsatisfactory [17,18].

This report on Jordanian Pharmacy and Pharm. D students may be due to the many institutions involved in their study. However, the government must deploy more effort to educate pharmacy students about COVID-19 as student support may be necessary during emergencies and disease surveillance. This study encourages students to appreciate the wealth of the challenge before them during pharmacy practice [18].

CONCLUSION

With the new variants of COVID-19 emerging at a regular pace, it is desirable to stimulate the pharmacy students, early in their profession, on their future roles in disease response and Infection, Prevention, and Control (IPC) strategies. The efforts to curtail COVID-19 will require the adherence of the citizenry to the government's efforts and this depends largely on their level of awareness and knowledge of the disease [19].

LIMITATION OF THE STUDY

At the time of the COVID-19 restrictions and lockdown in the country, the students stayed in different parts of the country. It was assumed that their responses to the survey would reflect the COVID-19 country response.

ETHICAL REVIEW

This study was approved by the Departmental Board for students' projects.

CONFLICT OF INTEREST STATEMENT

The authors declare that there is no conflict of interest.

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