Original Research Article

Prevalence and Symptomatology of People with Covid 19 in Rivers State

Abstract

Coronavirus disease 2019 (COVID-19) has dramatically spread all over the world, crossing the borders of all countries. It is presented mainly by lower respiratory tract symptoms such as fever, cough, dyspnea, and chest tightness. However, COVID-19 causes different upper respiratory tract-related symptoms including nasal congestion, sore throat, and olfactory dysfunction. Therefore, this study was aimed to evaluate the Prevalence and Symptomatology of Individual with Covid 19 in Rivers State. The study was a prospective descriptive study of all consenting patients who received care through hospitals, designated for COVID-19 treatment in Rivers State. A total number of 2223 Samples consisting of 137 (6.16%) symptomatic and 2086 asymptomatic (93.84%) were taken in accordance with Nigerian protocol for samples collection and PCR Diagnosis for SARS COV-2. The age, sex, date onset of symptoms, and date of sample collection were documented. A diagnosis of COVID-19 infection was made according to the guidance developed by the NCDC using multiplex RT-PCR which identified the E-gene, RDRP-gene, and N-gene using GeneFinder by Osang Korea. Results revealed that out of the total number of 2223 patients tested 206 were positive of COVID 19 and 2017 (91%) were tested negative. Out 206 positive cases recorded 110 patients were with symptoms, the most frequent recorded ENT manifestations were dry cough and fever (24.5%), loss of smell (24.5%), Difficulty in Breathing (11.8%),Headache (10.9%), Sore throat (7.3%), Nasal congestion (6.5%),,Loss of taste (6.4%),Sneezing (3.6%), dizziness (2.7%), and running nose (1.8%). The study has shown that the prevalence of COVID-19 among symptomatic and asymptomatic patients in the study location is high and a cause of epidemiologic concern as asymptomatic patients contribute a significant burden and carriers of COVID-19 infections. The study also revealed that ENT syndrome is the major symptoms associated with Covid 19.

Keywords:ENT, Prevalence, Asymptomatic, Symptomatic and , Covid 19 and People

1. Introduction

The evaluation of COVID-19 prevalence among Asymptomatic patient within the general population of COVID-19 cases is an important epidemiologic variable. The response to the COVID-19 pandemic as declared by the World Health Organisation (WHO) in March 2020 [1], elevated global cognizance of the role of Asymptomatic patient as a critical resource for the world. This acknowledgement was accentuated as asymptomatic patient became major carriers including healthcare workers who combatants across all pillars of the COVID-19 response with the attendant risk of infection. Healthcare worker infection, therefore, became an issue of concern in the early period of the pandemic response with documentation of alarming rates of asymptomatic patient infections [2] [3].

As the year 2019 turned, the news of the spread of the novel coronavirus went viral. The case definition initially was that of cough, fever, catarrh,

difficulty in breathing, and a history of international travel; it was also associated with a significant rapid mortality. The highly infectious disease later called COVID-19 by the WHO in March 2021 was rapidly spreading globally; there were some concerns that developing countries in Africa would be the next epicenter for severe COVID-19 infection because of the high population density and weak health systems.[1] The infection was first confirmed in Africa on February 14, 2021 in Egypt and Nigeria reported the first case in Sub-Saharan Africa.[2]

Several reports of symptomatic positive cases of COVID-19 reported by various authors including the WHO joint mission to China in February 2020 [2]. Correspondingly Wang *et al.* [3], reported that 29% of asymptomatic patients with COVID-19 infection from a cohort of 138 patients treated in a hospital in Wuhan. The WHO Africa region office also reported asymptomatic positive cases of COVID-19 in Africa as of July 2020, with an average rate of 20% of infections in some key countries [5]..

Globally, concerns were raised about cases that tested positive but did not have any symptoms, this set of people need to be identified promptly to limit the chance of inadvertent spread of the virus. To control the spread of infectious diseases,

it is important to ascertain the prevalence of asymptomatic carriers, especially with regard to measures aimed at isolating individuals who can potentially transmit the infection to others. It is alleged those asymptomatic positive cases are a significant source of the spread of this virus, especially as more young people were found to have asymptomatic infections.[3] Studies show that people who are positive but asymptomatic make up 40%–45% of severe acute respiratory syndrome-coronavirus-2 (SARS-CoV-2) infections, and they can shed the virus for a long time, up to two weeks.[4]. Therefore this study was aimed to determine the prevalence and symptoms of Covid 19 among individual in Rivers State with on focus on the different ear, nose and throat (ENT) manifestations in COVID-19-positive patients and their relation to other manifestations and to the severity of COVID-19.

1. Methodology

2.1. Study Location

The study was conducted in Rivers State, one of Nigeria's 36 states located in south-south, Nigeria. The state ranks within the top 7 in the number of COVID-19 cases in the country as stated by the Nigerian Centre for disease control (NCDC) since June 2020 [15].

2.2. Study Design, and Population

This study was a prospective descriptive study of all consenting patients who received care through hospitals, designated for COVID-19 treatment in Rivers state either as in-patient or ambulatory (out-patient) following a laboratory-confirmed diagnosis of COVID-19 based on a positive SARS-CoV-2 RT-PCR after presentation with suggestive symptoms or contact tracing of other patients from August 2020 to August 2022. The patients were categorised based on their symptoms into asymptomatic and symptomatic.

2.3. Data Collection and Diagnosis

A total number of 2223 Samples were taken in accordance with Nigerian protocol for samples collection and PCR Diagnosis for SARS COV-2. The age, sex, date onset of symptoms, and date of sample collection were documented. A diagnosis of COVID-19 infection was made according to the guidance developed by the NCDC using multiplex RT-PCR which identified the E-gene, RDRP-gene, and N-gene using GeneFinder by Osang Korea. All positive patients were referred to the treatment facility.

2.4. Statistical Analysis

The data was exported from the Microsoft Excel spreadsheet into IBM Statistical Package for Social Sciences (SPSS) version 25 for the data analysis. Descriptive statistics of basic data were done; Symptoms, gender, age was transformed into age groups with 10-year intervals and presented as Table, bar and pie chats Categorical variables were presented as proportions and compared using the Chi-square test. The level of statistical significance was set at a $P < 0.05$

3. Results and Discussion

Since December 2019, the world has been in the grip of the severe acute respiratory syndromecoronavirus 2 and the disease it causes, coronavirus disease 2019 (COVID-19) [6]. Since then, the spread of COVID-19 has increased exponentially, with the World Health Organization (WHO) declaring a pandemic on 11 March [7], Coronavirus disease 2019 (COVID-19) has dramatically spread all over the world, crossing the borders of all countries. It is presented mainly by lower respiratory tract symptoms such as fever, cough, dyspnea, and chest tightness. However, COVID-19 causes different upper respiratory tract-related symptoms including nasal congestion, sore throat, and olfactory dysfunction. In this study total number of 2223 patients were assessed the age, sex, presence of symptoms, and tested over the period with 137 (6.16%) symptomatic and 2086 asymptomatic (93.84%) in the patient population. The patients were consisted largely of male gender with a percentage of 70.6% while female gender had a percentage of 29.3%. The distribution of percentage of patients categories are displayed in Figure 1.
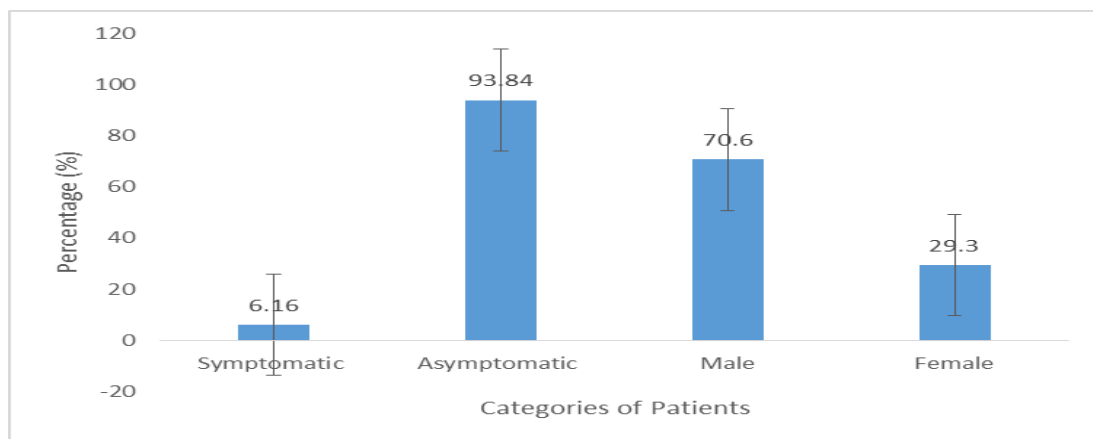
Figure 1:Percentage of patients categories Tested

Out of the total number of 2223 patients were tested 206 were positive of COVID 19 and 2017 (91%) were tested negative and 206 (9%) were positive, 75.24% of positive cases were asymptomatic while 24.76% were with one or two symptoms ranging cough, sore throat, etc. Among the negative cases 95.74% were without symptoms and 4.26% were symptoms. The results are presented in Figures 2 and 3 respectively.
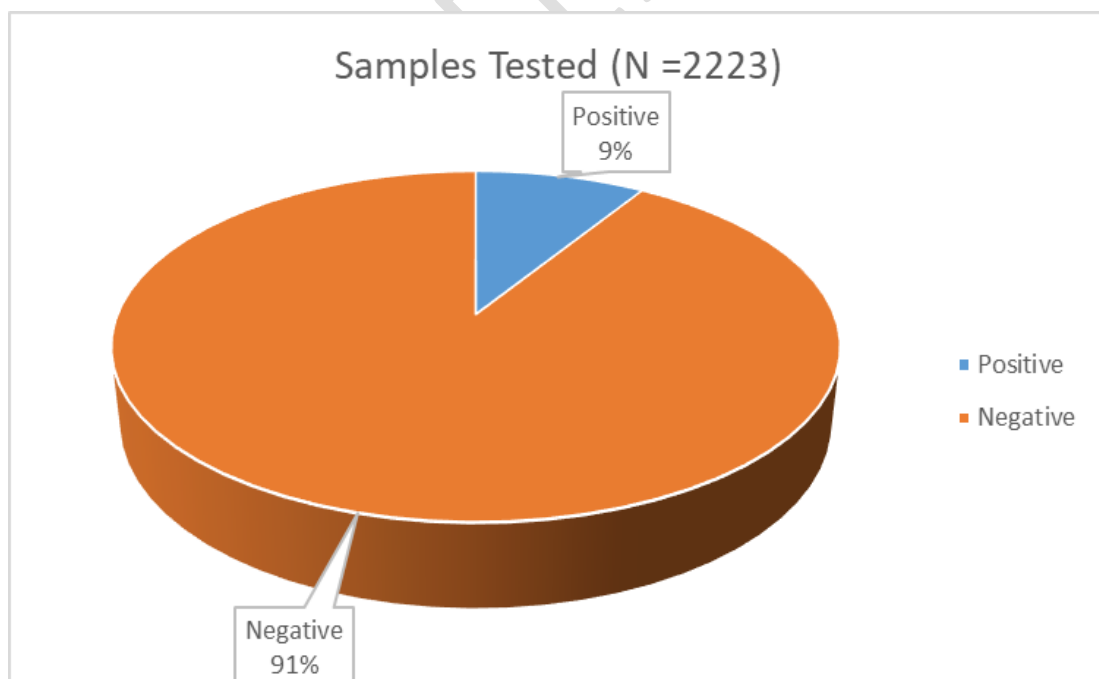

Figure 2: Percentage of Positive and Negative Cases Among Patients Tested
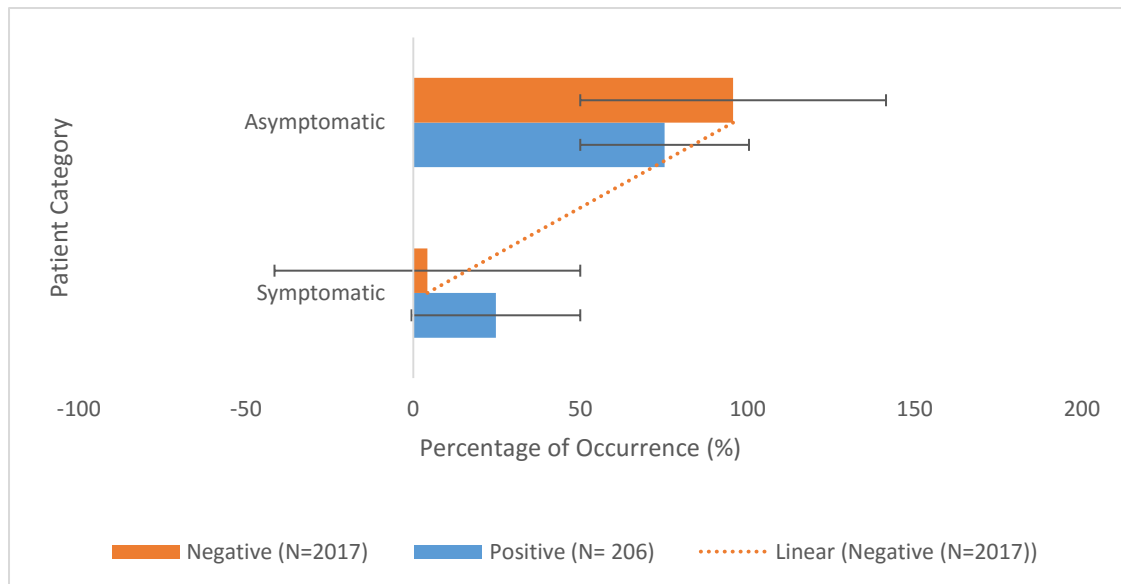
Figure 3: Percentage of Positive and Negative Results among Patient Categories

Among the 110 COVID-19 positive patients with symptoms, the most frequent recorded ENT manifestations were dry cough and fever (24.5%), loss of smell (24.5%), Difficulty in Breathing (11.8%),Headache (10.9%), Sore throat (7.3%), Nasal congestion (6.5%),,Loss of taste (6.4%),Sneezing (3.6%), dizziness (2.7%), and running rose (1.8%) as presented in Table1 comparative description of symptoms among positive and negative cases of patients with symptoms is displayed in figure 4

Table 1: Distribution of Signs shown by Respondents Who Tested Positive and Negative of Covid 19

| SYMPTOMS	Covid 19 Positive		Covid 19 Negative	
	Frequency	Percentage	Frequency	Percentage
Loss of Smell	27	24.5	21	14.9
Cough and fever	27	24.5	47	33.3
Difficulty in Breathing	13	11.8	17	12.1
Headaches	12	10.9	17	12.1
Sore Throat	8	7.3	10	7.1
Loss of Taste	7	6.4	6	4.2
Sneezing	4	3.6	3	2.1
Dizziness	3	2.7	2	1.4
Runny Rose	2	1.8	2	1.4
Nasal congestion	7	6.5	16	11.3
Loss of Speech	0	0	0	0
Ear fullness and or pain	0	0	0	0
Hearing Lost	0	0	0	0
Total	110	100	141	100
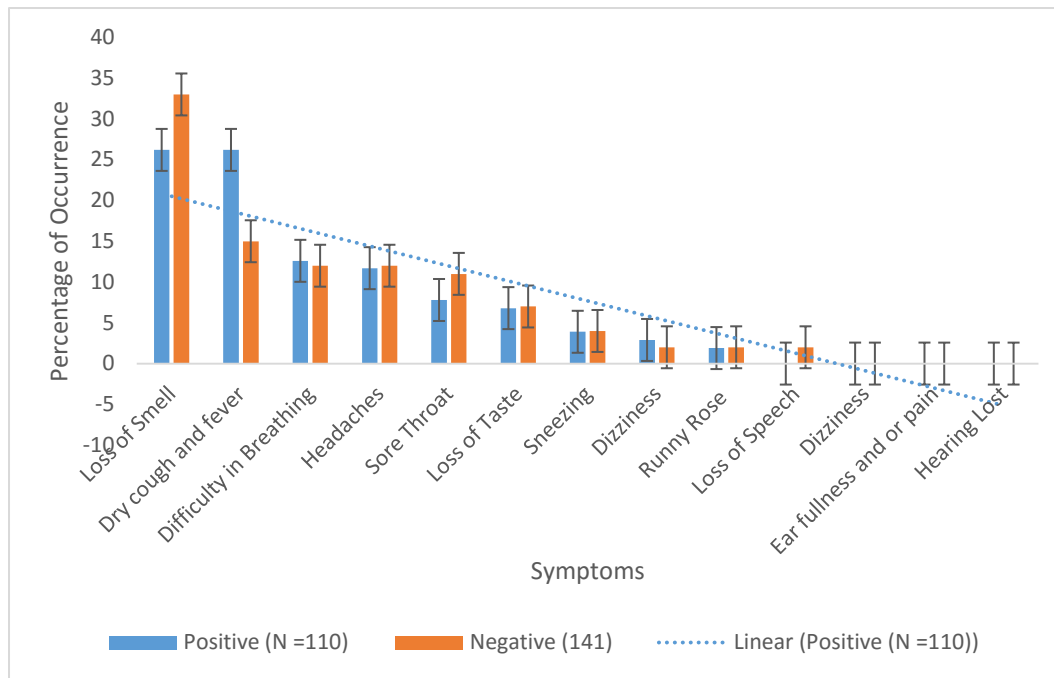
Figure 4: comparative description of symptoms among positive and negative cases.

The pattern of symptoms among the positive patients in this study was similar and did not differ significantly from negative, dry cough and fever , loss of smell, Difficulty in Breathing, Headache , Sore throat , Nasal congestion, Loss of taste, Loss of taste,Sneezing, dizziness, and running rose as the leading symptoms in line with the existing symptom pattern and other studies involving the general population [25] . The presence of loss of smell among positive as the second most common symptom in this study is a finding of interest as loss of smell is predictive of less severe disease, reduced hospitalizations', and lower in-

hospital mortality in COVID-19 patients [26] [27].

The Age groping of Symptomatic and Asymptomatic Respondents tested in this study is presented in in Table 2. The most occurring age group among the 137 Symptomatic patient tested in this study was 60-69 with a percentage of (25%) while among the total number of 2086 asymptomatic patients, age group ranged from 40 - 49 and 30 - 39 recorded the highest percentage of occurrence of   27.8% and 27.1% respectively.

Table 2: Age groping of Symptomatic and Asymptomatic Respondents

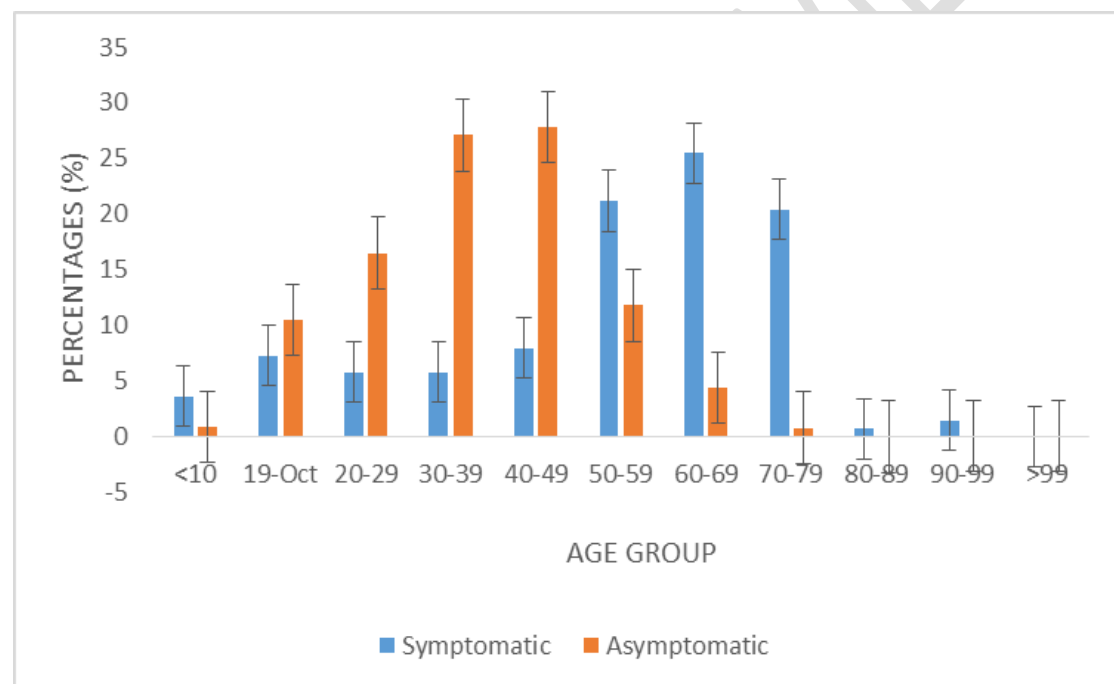| Age	Symptomatic		Asymptomatic	
	Frequency	Percentage	Frequency	Percentage
<10	5	3.65	19	0.9
10-19	10	7.3	219	10.5
20-29	8	5.8	344	16.5
30-39	8	5.8	566	27.1
40-49	11	8.0	580	27.8
50-59	29	21.2	245	11.8
60-69	35	25.5	92	4.4
70-79	28	20.4	16	0.8
80-89	1	0.7	1	0.05
90-99	2	1.5	2	0.10
>99	0	0	2	0.10
	137	100	2086	100

Figure 4: comparative description of symptoms among positive and negative cases

4. Conclusion

The study has shown that the prevalence of COVID-19 among symptomatic and asymptomatic patients in the study location is high and a cause of epidemiologic concern as asymptomatic patients contribute a significant burden and carriers of COVID-19 infections. This calls for action to improve and frequent screening of the infections in hospital settings in addition to improving HCW infection prevention behaviour in the community. The study also revealed that ENT manifestations associated with Covid 19 include dry cough and fever

loss of smell , Difficulty in Breathing ,Headache , Sore throat , Nasal congestion ,,Loss of taste Sneezing, dizziness and running rose

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