

# Symptom Spectrum and the Evaluation of Severity and Duration of Symptoms in Patients with COVID-19

Senol Dane<sup>1\*</sup>, Murat Akyuz<sup>2</sup>

<sup>1</sup>Department of Physiology, Faculty of Basic Medical Sciences, College of Health Sciences, Nile University of Nigeria, Abuja, Nigeria

<sup>2</sup>Department of Business Administration, Nile University of Nigeria, Abuja, Nigeria

## ABSTRACT

**Introduction:** In the present study, three aims were targeted, (1) Determination of symptom spectrum and the evaluation of severity and duration of symptoms in patients with COVID-19, (2) Determination of the effects of some demographic characteristics on symptom severity and duration and (3) Determination of the effects of race (Nigerians and expats) and (4) age group.

**Materials and Method:** Subjects were those who experienced COVID-19 and recovered. Eighty-one subjects were included in the study. All of them accepted to participate in this study (51 men and 30 women). Out of 81 cases, 48 were expat and 33 were Nigerian. Data was collected by using an online survey. The survey was shared by using social media.

**Results:** The severities of generalized body pain, loss of smell, fatigue, headache were moderate or severe. The duration of generalized body pain, loss of smell and fatigue were higher than 1-3 days. Some symptoms were higher in women than in men. There was no race related in symptom severity or duration. Only breath difficulty was higher in 35-45 age group.

**Conclusion:** These results show that COVID-19 cases in Nigeria are quite low compared to other world countries. In general, the severities and durations of COVID-19 symptoms were so weak.

**Key words:** COVID-19, Symptom spectrum, Symptom severity, Symptom duration

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**Corresponding author:** Senol Dane

**e-mail** ✉: senol.dane@nileuniversity.edu.ng

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## INTRODUCTION

The very 1st case of COVID-19 infected in Nigeria was recorded on March 10, 2020. With a constant increment in numbers, all tertiary educational institutions were closed with an order of the Ministry of Education by March 20, 2020, and the government announced the initial lockdown of big cities on March 30, 2020 [1].

Psychological stress due to COVID-19 pandemic can result in fear and worry among people about their health and financial conditions. It can also cause changes in eating patterns, sleeping problems, concentration difficulties, and exacerbation of chronic health problems, mental health conditions, usage of tobacco, alcohol, and other substances [2]. The current pandemic-related coping strategies may harm mental health, such as decreased well-being and increased depression and anxiety symptoms [1,3], insomnia, and anger [4-6]. Also, inactivity due to COVID-19 disease can have a negative effect on physical and mental health and coping with stress and anxiety during isolation time [7,8]. Besides, there were some

negative lifestyle changes due to the COVID-19 pandemic [9]. Furthermore, the fairly big changes in food consumption preferences were reported [10]. Also, in another study, there was a significant decrease in family incomes and a significant increase in family expenditures during the pandemic outbreak [11]. Also, Nigerian women entrepreneurs experienced the negative effect of COVID-19 outbreak on their businesses [12].

A wide range of symptoms are found in COVID-19 patients, ranging from mild/moderate to severe, rapidly progressive, and fulminant disease. Symptoms of COVID-19 are non-specific and disease presentation can range from asymptomatic to severe pneumonia. Incidence of asymptomatic cases ranges from 1.6% to 51.7% and these people do not present typical clinical symptoms or signs and do not present apparent abnormalities in lung computed tomography [13-18]. The most common symptoms of COVID-19 are fever, cough, myalgia, or fatigue and atypical symptoms include sputum, headache, haemoptysis, vomiting, and diarrhoea [19,20]. Some patients may present with sore throat, rhinorrhoea, headache, and confusion a few days before the onset of fever, indicating that fever is a critical symptom, but not the initial manifestation of infection [20]. Furthermore, some patients experience loss of smell (hyposmia) or taste

(hypogeusia), which are now being considered early warning signs and indications for self-isolation [21,22].

In the present study, three aims were targeted, (1) determination of symptom spectrum and the evaluation of severity and duration of symptoms in patients with COVID-19, (2) determination of the effects of some demographic characteristics on symptom severity and duration and (3) determination of the effects of race (Nigerians and expats) and (4) age group.

## MATERIALS AND METHOD

### Participants

Subjects were those who experienced COVID-19 and recovered. All subjects were living in Abuja Nigeria for at least the last one year. Eighty-one subjects were included in the study. All of them accepted to participate in this study (51 men, average age=35.123 years, standard deviation, SD=3.861; 30 women, average age=34.428, SD=4.952). Out of 81 cases, 48 were expat and 33 were Nigerian. Data was collected by using an online survey. The survey was shared by using social media (whatsapp groups).

The experimental protocol was by following international ethical standards. The study was performed per under the Helsinki Declaration (1975, revised in 1996-2013) [23]. The aims and objectives of the study were explicitly explained to the participants before the commencement of the study.

The survey consisted of 3 different parts.

Part 1: Demographic information. In this part the demographic information (gender, age, nationality (Nigerian or expat)) was asked.

Part 2: COVID-19 symptom severity. In the questionnaire, each COVID-19 symptom had 4 answer options: if person had not this symptom (0 point), if symptom was mild (1 point), if it was moderate (2 points) and if it was severe (3 points).

Part 3: COVID-19 symptom duration. In the questionnaire, each COVID-19 symptom had 4 answer options: if person had not this symptom (0 point), if duration of symptom was 1-3 days (1 point), if it was 4-6 days (2 points) and if it was 7 or more days (3 points).

### Statistical analyses

Measured values are given as a mean +/- standard

deviation (SD). Statistical analysis was performed using the software SPSS for Windows, version 26. The student's (one sample test) t test were used. In one sample, Student's t test, test value was 1 (mild in severity and 1-3 day in duration).

## RESULTS

### Symptom spectrum and their severity and duration of patients with COVID-19

Out of 81 patients, 45 had fever, 45 had cough, 55 had general body pain, 46 had loss of smelling, 42 had loss of taste, 55 had fatigue, 19 had eye pain, 51 had headache, 30 had runny nose, 25 had breathing difficulty, 32 had sore throat, 21 had abdominal pain, 23 had shivering, 22 had diarrhoea, 27 had catarrh, 41 had joint pain, 29 had weight loss, 12 had other symptoms (vomiting, loss of voice, sleeplessness, loss of sight, burning tongue, tooth pain, hallucination) (Table 1).

The disease sequelae or lasting condition was general fatigue in 29 patients, sleep disorder or sleep problem in 10 patients, weight loss in 5 patients, and shortness of breath in 8 patients.

Out of 81 patients, only 3 were experienced endotracheal intubation. Endotracheal intubation was applied 2 days for 2 of them and 4 days for 1 of them.

The severity of fever ( $t=0.481$ ,  $p=0.632$ ), cough ( $t=0.592$ ,  $p=0.556$ ), loss of taste ( $t=0.89$ ,  $p=0.376$ ), sore throat ( $t=0$ ,  $p=1$ ), and joint pain ( $t=0.398$ ,  $p=0.692$ ) were not statistically different than mild (1 point). Therefore, it can be stated that the severity of these symptoms was approximately mild in patients of the present study (Table 1).

The severity of generalized body pain ( $t=2.998$ ,  $p=0.004$ ), loss of smell ( $t=2.512$ ,  $p=0.014$ ), fatigue ( $t=3.999$ ,  $p=0.00$ ), headache ( $t=2.646$ ,  $p=0.01$ ) were statistically significantly higher than mild (1 point). Therefore, it can be stated that these symptoms were moderate or severe (Table 1).

The severity of runny nose ( $t=-2.234$ ,  $p=0.043$ ), breathing difficulty ( $t=-4.331$ ,  $p=0.00$ ), abdominal pain ( $t=-5.253$ ,  $p=0.00$ ), shivering ( $t=-4.593$ ,  $p=0.00$ ), diarrhea ( $t=-4.951$ ,  $p=0.00$ ), catarrh ( $t=-2.06$ ,  $p=0.043$ ), weight loss ( $t=-5.828$ ,  $p=0.00$ ) were statistically significantly lower than mild (1 point). Therefore, it can be stated that the severity of these symptoms was less than mild (Table 1).

**Table 1: Symptom spectrum and their severity of patients with COVID-19.**

Symptoms	Frequency (Number and (%))	Symptom severity (Mean ± SD)	t	P
Fever	45 (55.6%)	1.06 ± 1.155	0.481	0.632
Cough	45 (55.6%)	1.07 ± 1.127	0.592	0.556
Generalized body pain	55 (67.9%)	1.37 ± 1.112	2.998	0.004
Loss of smell	46 (56.8%)	1.37 ± 1.327	2.512	0.014
Loss of taste	42 (51.9%)	1.124 ± 1.249	0.89	0.376

Fatigue	55 (67.9%)	1.53 ± 1.195	3.999	0
Eye pain	19 (23.5%)	0.358 ± 1.112	-8.109	0
Headache	51 (62.9%)	1.358 ± 1.218	2.646	0.01
Runny nose	30 (37.1%)	0.78 ± 1.061	-2.234	0.043
Breathing difficulty	25 (30.9%)	0.542 ± 0.949	-4.331	0
Sore throat	43 (53.1%)	1 ± 1.083	0	1
Abdominal pain	21 (25.9%)	0.47 ± 0.909	-5.253	0
Shivering	23 (28.4%)	0.54 ± 0.895	-4.593	0
Diarrhea	22 (27.2%)	0.53 ± 0.853	-4.951	0
Catarrh	27 (33.3%)	0.75 ± 1.079	-2.06	0.043
Joint pain	41 (50.6%)	1.049 ± 1.117	0.398	0.692
Weight loss	29 (35.8%)	0.519 ± 0.743	-5.828	0

The duration of fewer (t=0.546, p=0.586), cough (t=1.227, p=0.224), loss of taste (t=1.045, p=0.299), headache (t=1.668, p=0.099), sore throat (t=-0.74, p=0.462, join pain (t=0.00, p=1) and weight loss (t=-0.92, p=0.36) were not statistically different than 1-3 days (1 point). Therefore, it can be stated that the duration of these symptoms were approximately 1-3 days in patients of the present study (Table 2).

The duration of generalized body pain (t=3.651, p=0.00), loss of smell (t=2.101, p=0.039) and fatigue (t=3.776, p=0.00) were statistically significantly higher than 1-3

days (1 point). Therefore, it can be stated that the duration of these symptoms were 4 or more days (Table 2).

The durations of runny nose (t=-2.229, p=0.047), breathing difficulty (t=-4.272, p=0.00), abdominal pain (t=-7.928, p=0.00), shivering (t=-5.433, p=0.00), diarrhea (t=-6.902, p=0.00) and catarrh (t=-2.329, p=0.042) were statistically significantly lower than 1-3 days (1 point). Therefore, it can be stated that the duration of these symptoms was less than 1-3 days (Table 2).

**Table 2: The duration of symptoms of COVID-19.**

Symptoms	Symptom duration (Mean ± SD)	T	P
Fewer	1.061 ± 1.016	0.546	0.586
Cough	1.161 ± 1.177	1.227	0.224
Generalized body pain	1.444 ± 1.095	3.651	0
Loss of smell	1.296 ± 1.269	2.101	0.039
Loss of taste	1.148 ± 1.275	1.045	0.299
Fatigue	1.518 ± 1.236	3.776	0
Eye pain	0.333 ± 0.758	-7.913	0
Headache	1.197 ± 1.065	1.668	0.099
Runny nose	0.778 ± 1.036	-2.229	0.047
Breathing difficulty	0.543 ± 0.962	-4.272	0
Sore throat	0.914 ± 1.051	-0.74	0.462
Abdominal pain	0.309 ± 0.784	-7.928	0
Shivering	0.493 ± 0.839	-5.433	0
Diarrhea	0.432 ± 0.741	-6.902	0
Catarrh	0.778 ± 1.036	-2.329	0.042
Joint pain	1 ± 1.151	0	1

### Gender related differences in symptom severity and duration

There were gender related differences in only loss of smell and loss of taste symptoms. The percentage of patients with loss of smell (47.1% in men and 73.3% in women) and loss of taste (43.1% in men and 66.7% in women) was higher in women than in men (respectively,

chi square=5.314, p=0.036; chi square=4.189, p=0.041). Also, severity of loss of smell was higher in women ( $1.157 \pm 1.254$ ) than in men ( $1.066 \pm 1.257$ ) ( $t=2.877$ ,  $p=0.005$ ). Duration of loss of smell ( $t=3.286$ ,  $p=0.002$ ), loss of taste ( $t=3.364$ ,  $p=0.001$ ), fatigue ( $t=2.59$ ,  $p=0.01$ ) and headache ( $t=1.996$ ,  $p=0.049$ ) symptoms was higher in women than in men (Table 3). There was no gender related difference in other symptoms of COVID-19.

**Table 3: Gender related differences in the duration of COVID-19 symptoms.**

Symptoms	Men	Women	t	p
Loss of smell	0.961 ± 1.182	1.867 ± 1.224	3.286	0.002
Loss of taste	0.804 ± 1.144	1.733 ± 1.284	3.364	0.001
Fatigue	1.255 ± 1.246	1.966 ± 1.098	2.59	0.01
Headache	1.019 ± 1.067	1.5 ± 1.008	1.996	0.049

### Race related difference

There was no race related (Nigerian or expat) in symptom spectrum, symptom severity and symptom duration in the present study.

### Age related difference

Only breath difficulty was statistically significantly higher in 35-45 age group (chi square=17.792,  $p=0.013$ ). For other symptoms, there were not statistically significant age related differences.

## DISCUSSION

As of today (03/27/2021), Nigerian COVID-19 statistics are following: Total number of cases=162.388, Total number of deaths=2.039, Total number of recovered patients=149.986, The number of active cases=10.363, The number of serious/critical cases=10, Total number of cases per 1 million population=774, The total number of deaths per 1 million population=10 [24]. These statistics show that COVID-19 cases and deaths in Nigeria are quite low compared to other world countries.

In the present study, the severity of fever, cough, loss of taste, sore throat, and joint pain were not different than mild the severities of these symptoms were approximately mild. The severities of generalized body pain, loss of smell, fatigue, headache was higher than mild these symptoms were moderate or severe. The severities of runny nose, breathing difficulty, abdominal pain, shivering, diarrhea, catarrh, weight loss was lower than mild the severities of these symptoms were so weak.

The duration of fever, cough, loss of taste, headache, sore throat, joint pain and weight loss were not different than 1-3 days the duration of these symptoms were approximately 1-3 days. The duration of generalized body pain, loss of smell and fatigue were higher than 1-3 days the durations of these symptoms were 4 or more days. The durations of runny nose, breathing difficulty, abdominal pain, shivering, diarrhoea and catarrh were

lower than 1-3 days, the duration of these symptoms was less than 1-3 days.

Out of 81 patients, only 3 were experienced endotracheal intubation for a short time. These results show us that the severity and duration of COVID-19 symptoms were very low, and the disease can be easily overcome.

Duration and severity of loss of smell and loss of taste and durations of fatigue and headache symptoms was higher in women than in men. These results can be attributed the gender related differences in depression [3,25] and anxiety [1,3]. In previous studies, the relationships of some environmental and hereditary factors such as gender, education, physical abnormalities, handedness, marital status, visual memory, and salivary testosterone with some psychologies including self-esteem, alexithymia, depression [25-28,29-32].

There was no race related (Nigerian or expat) in symptom spectrum, symptom severity and symptom duration. Already, there is no country, race, ethnicity, or religion related differences in COVID-19 mediated infections and deaths [33].

Only breath difficulty was higher in 35-45 age group. In a recent study, all age groups are susceptible to COVID-19 infection, but the elderly and those with certain pre-existing health conditions are particularly prone to severe disease [34].

## CONCLUSION

These results show that COVID-19 cases in Nigeria are quite low compared to other world countries. In general, the severities and durations of COVID-19 symptoms were so weak.

## REFERENCES

1. Rakhmanov O, Dane S. Knowledge and anxiety levels of African university students against COVID-19 during the pandemic outbreak by an online survey. J Res Med Dent Sci 2020; 8:53-56.

2. <https://www.cdc.gov/coronavirus/2019-ncov/daily-life-coping/managing-stress-anxiety.html>
3. Rakhmanov O, Demir A, Dane S. A brief communication: anxiety and depression levels in the staff of a Nigerian private university during COVID 19 pandemic outbreak. *J Res Med Dent Sci* 2020; 8:118-122.
4. Wang C, Pan R, Wan X, et al. Immediate psychological responses and associated factors during the initial stage of the 2019 coronavirus disease (COVID-19) epidemic among the general population in China. *Int J Environ Res Public Health* 2020; 17:1729.
5. Rajkumar RP. COVID-19 and mental health: A review of the existing literature. *Asian J Psychiatr* 2020; 52:102066.
6. Torales J, O'Higgins M, Castaldelli-Maia JM, et al. The outbreak of COVID-19 coronavirus and its impact on global mental health. *Int J Soc Psychiatry* 2020; 66:317-320.
7. Ravalli S, Musumeci G. Coronavirus outbreak in Italy: Physiological benefits of home-based exercise during pandemic. *J Funct Morphol Kinesiol* 2020; 5:31.
8. Rakhmanov O, Shaimerdenov Y, Dane S. The effects of COVID-19 pandemic on anxiety in secondary school students. *J Res Med Dent Sci* 2020; 8:186-190.
9. Rakhmanov O, Shaimerdenov Y, Nacakgedigi O, et al. COVID-19 outbreak negatively impacted Nigerian secondary school students lifestyles. *J Res Med Dent Sci* 2021; 9:279-284.
10. Celik B, Dane S. The effects of COVID-19 pandemic outbreak on food consumption preferences and their causes. *J Res Med Dent Sci* 2020; 8:169-173.
11. Celik B, Ozden K, Dane S. The effects of COVID-19 pandemic outbreak on the household economy. *J Res Med Dent Sci* 2020; 8:51-56.
12. Dane S, Akyuz M, Opusunju MI. COVID-19 and entrepreneurship development among Nigerian women. *J Res Med Dent Sci* 2021; in press.
13. Mizumoto K, Kagaya K, Zarebski A, et al. Estimating the asymptomatic proportion of coronavirus disease 2019 (COVID-19) cases on board the Diamond Princess cruise ship, Yokohama, Japan, *Eurosurveillance* 2020; 25:2000180.
14. Kimball A, Hatfield KM, Arons M, et al. Asymptomatic and presymptomatic SARS-CoV-2 infections in residents of a long-term care skilled nursing facility-King County, Washington, March 2020. *Morb Mortal Wkly Rep* 2020; 69:377-381.
15. Nishiura H, Kobayashi T, Miyama T, et al. Estimation of the asymptomatic ratio of novel coronavirus infections (COVID-19). *Int J Infect Dis* 2020; 94:154-155.
16. Surveillances V. The epidemiological characteristics of an outbreak of 2019 novel coronavirus diseases (COVID-19)—China, 2020. *China CDC weekly* 2020; 2:113-22.
17. Lu X, Zhang L, Du H, et al. SARS-CoV-2 infection in children. *N Engl J Med* 2020; 382:1663-1665.
18. Ki M. Epidemiologic characteristics of early cases with 2019 novel coronavirus (2019-nCoV) disease in Korea. *Epidemiol Health* 2020; 42:e2020007.
19. Guan W, Ni Z, Hu Y, et al. Clinical characteristics of coronavirus disease 2019 in China. *N Engl J Med* 2020; 382:1708-1720.
20. Huang C, Wang Y, Li X, et al. Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. *Lancet* 2020; 395(10223):497-506.
21. Lao WP, Imam SA, Nguyen SA. Anosmia, hyposmia, and dysgeusia as indicators for positive SARS-CoV-2 infection. *World J Otorhinolaryngol Head Neck Surg* 2020; 6:S22-S25.
22. Li Z, Liu T, Yang N, et al. Neurological manifestations of patients with COVID-19: potential routes of SARS-CoV-2 neuroinvasion from the periphery to the brain. *Front Med* 2020; 14:533-541.
23. <https://www.wma.net/policies-post/wma-declaration-of-helsinki-ethical-principles-for-medical-research-involving-human-subjects/>
24. <https://www.worldometers.info/coronavirus/>
25. Christina ON, Akin OM, Salisu RA, et al. The effects of sex, physical defect on body, acne on face and education on depression in Nigerian university students. *J Res Med Dent Sci* 2019; 7:103-108.
26. Boukar MM, Dane S. The effects of sex, education and handedness on Rosenberg. *J Res Med Dent Sci* 2019; 7:17-20.
27. Saka MJ, Biliaminu SA, Sanni EO, et al. Gender related relationships among salivary cortisol and testosterone hormones and self-esteem and aggressiveness in university students. *J Res Med Dent Sci* 2020; 8:136-140.
28. Demir A, Dane S. Simian crease related differences in self-esteem and depression scores in university students. *J Res Med Dent Sci* 2019; 7:70-73.
29. Rakhmanov O, Dane S. The relationships among gender, handedness, GPA, depression and visual memory in the ROCF test in university students. *J Res Med Dent Sci* 2020; 8:37-42.
30. Boukar MM, Dane S. The effects of sex, education and marital status on alexithymia. *J Res Med Dent Sci* 2019; 7:82-85.
31. Biliaminu SA, Saka MJ, Sanni EO, et al. Gender-related differences in correlations among BMI, salivary testosterone and cortisol and depression and alexithymia scores in university students. *J Res Med Dent Sci* 2020; 8:152-157.
32. Demir A, Dane S. Gender related differences in the possible effect of simian crease on alexithymia scores in university students. *J Res Med Dent Sci* 2020; 8:1-4.
33. <https://coronavirus.jhu.edu/map.html>
34. Machhi J, Herskovitz J, Senan AM, et al. The natural history, pathobiology, and clinical manifestations of SARS-CoV-2 infections. *J Neuroimmune Pharmacol* 2020; 15:359-386.