Original Research Article

Perceived effect of COVID-19 on the Health of Charcoal producers in the Guinea Savannah Agro-ecological Zone of Nigeria

This work was carried by the author. The author read and approved the final manuscript

Abstract

Charcoal producers ignored the health implications of the activity especially during the COVID-19 pandemic resulting in several health disorders. Thus, the study examined perceived effect of COVID-19 on the health of charcoal producers in the derived savannah agro-ecological zone of Nigeria. Data were collected through the use of structured interview scheduled. A total of 178 respondents were selected using multistage sampling technique. Data were analysed through the use of frequency, mean, standard deviation and inferential statistics: chi-square and Analysis of Variance (ANOVA). The study reveals that most of the respondents strongly agreed that they usually use local herbs to treat all ailments during COVID-19. More than 50% of them always experienced difficult breathing during COVID-19, and that high death were recorded than before COVID-19 pandemic, while 88.2% of the respondents perceived low level of the effect of COVID-19 on their health. In addition, more than 50% of them strongly agreed that COVID-19 does not exist at all, that it is a taboo, while shaking hands with customers/friends is a symbol of love and that they cannot do without touching both face and nose during COVID-19 pandemic respectively. However, 93.3% of the respondents did not comply with the COVID-19 preventive measures. The study concludes that charcoal producers did not believe in the existence of COVID-19 and this may be dangerous to their health. Hence, education awareness on the hazard of COVID-19 to the health of charcoal producers should be encouraged.

Keyword: Charcoal Production, COVID-19 Pandemic, Health of charcoal producers, Compliance, Environment

1. Introduction

It is fully known that the health situation of every person will significantly influence how each individual will discharge her means of livelihood [1]. In the absence of ill-health and stable emotional, psychological and mental state of mind, people will be able to achieve greater ends meet. Most rural dwellers that engage in intensive labour work such as farming, logging and charcoal production are always at the risk of one aliment or the other.

According to [2] most charcoal producers in the Sub-Sahara Africa had various occupational hazards. Charcoal production will continue to constitute health menace in as much as its rate of production increases. For instance, charcoal production in the World has increased tremendously from about 37 million tons in 2000 to 51.2 million tons in 2017. Of this quantity, Nigeria, Egypt, and Ethiopia produced the highest quantity [3]. From the quantity produced in Nigeria, about 70% were exported to Europe. Thus, to meet this requirement, a lot of energy is required by charcoal producers especially since they make use of crude methods of production with its health attendants.

The major diseases that charcoal producers experienced during production are as follows respiratory disease: cough, sneezing, difficult breathing, chest pain, among others [4]. Most of these have similar symptoms with COVID-19 [5].

The pandemic called COVID-19 otherwise known as Corona Virus ravaged the whole World since late 2019. This pandemic began like began like a mirage in China and now spread to most of the continent and left about 586,431 deaths recorded as at 25th of June 2021 [6]. Most of the Africa countries are still in panic because WHO approved vaccines has not gone around the world.

The disease has led to a lot of economic loss because of the total lockdown introduced by most of the World leaders including Nigeria. Since March 27, 2020 when the first index case was recorded in Nigeria through an Italian business man, and thereafter, several Europe returnees

brought it into the country and this led to community spreading with more than four thousand within three months because of its fast mode of transmission [7]. As at June, 2021, about 167,401 cases and 2,118 deaths were confirmed in Nigeria [8]. The unfortunate part of the disease is that it does not discriminate between the upper and the lower echelon of the society.

This affected both the public and private sectors of the economy. The pandemic that ravaged the country early in the year 2020 also have economic implications especially when budget implementation had not been commenced. It also affected transportation of charcoal from one place to the other. Since charcoal production activity are carried out in the bush, the restriction placed on the populace did not have much effect on charcoal production. They always interact with the family members and friends without caution. Hence, they are at risk of contracting multiple diseases during the COVID-19 periods.

Despite the awareness made by the Nigeria Centre for Disease Control (NCDC) such as regular washing of hands with soap, rinsing of hands with sanitizer, social distancing, use of face mask, and report of those with COVID-19 symptoms [9], it is worth noting that most rural dwellers including charcoal producers still produces charcoal especially in Oyo and Kwara states and strive to sell their products to the end users without considering the multiple effect of all these activity on their health. This act may aggravate the pandemic and cause more socio-economic problems.

Hence this study will determine the effect of COVID-19 among charcoal producers in Nigeria.

The specific objectives include: to determine the socio-economic characteristics of charcoal producers in the study area; to assess the effect of COVID-19 on the health of charcoal producers; and assess the level of compliance of charcoal producers to COVID-19 preventive measures.

1.1Study Area

1.1.1 Location of the study area

The study area is the guinea savannah zone of Nigeria. This zone is the largest part of the savannah zone and is sometimes divided into the southern guinea savannah which consists of the

following States; Benue, FCT, Plateau, parts of kwara State and Niger States and northern guinea savannah (which consists of Kaduna State). It is the broadest vegetation zone in the country. It covers an area that has 100 – 150 cm of annual rainfall and where the wet season lasts for 6 - 8 months. The long period of dry season in this zone favours large scale production of charcoal. The common trees are Acacias, Baobab, and Shea-butter [10].

2. METHODOLOGY

2.1 Research design

Descriptive research was used for the study. Multi-stage sampling procedure was used to select respondents from the population of registered charcoal producers in guinea savannah zone. Forty-three (43) major charcoal producing communities were purposively identified. Twenty percent (9) from the population of charcoal producing communities were randomly selected. These are Doka (48), Ubaya, (34) Bida (42), Borgu (45), Edati (38), Katcha (40), Awajir (52), Layun (34), and Obi (22) communities. Fifty percent (50) of the population of charcoal producers in each community were selected using simple random sampling technique. A total of one hundred and seventy-eight charcoal producers were used as respondents for this study. A Likert-type five-point rating scale of "strongly agree" to "strongly disagree" were used. Respondents were requested to indicate their opinion on each of the selected statements about perceived effect of COVID-19 among charcoal producers in Nigeria.

2. RESULTS AND DISCUSSION

Table 1: Distribution of Respondents on their Socio-economic Characteristics N=178

Socio-economic characteristics	Freq	%	
Age (Years)			
25-34	64	36.0	Age= 37, SD=5.2
35-44	86	48.3	

45-54	11	6.2	
More than 54	17	9.5	
Education Attainment			
Non-Formal Education	63	35.3	
Koranic School	51	28.7	
Primary School	37	20.6	
Secondary School	20	11.2	
Tertiary Institution	7	3.9	
Sex			
Male	156	87.6	
Female	22	12.4	
Marital Status			
Single	20	11.2	
Married	142	79.8	
Widowed	6	3.3	
Divorced	10	5.6	
Primary Occupation			
Crop Farming	97	54.5	
Livestock	0	0.0	
Fishing	17	9.6	
Charcoal Production	35	19.7	
Hunting	7	3.9	
Working as hired hand	22	12.3	
Secondary Occupation			
Crop Farming	40	22.5	
Livestock	-	-	
Fishing	-	-	
Charcoal Production	136	76.4	
Hunting	2	1.2	
Working as hired hand	-	-	
Year of experience			
< 5years	21	11.8	M=15, SD=5.1
6-10years	12	6.7	
11-15years	66	37.1	
> 15years	79	44.4	
Household size			
< 5	40	22.5	
6-10	57	32.0	
11-15	81	45.5	
Annual Income			

Less than #100,000	32	18.0
#100,001-#200,000	20	11.2
#200,001-#300,000	49	27.5
#300,001-#400,000	77	43.3

Socio-economic Characteristics of Respondents

Table 1 indicates that mean age of respondents was 37±5.2 years. This shows that they are in their productive ages. About, 48.3% of the respondents fell between 35 and 44years of age, 36.0% of the respondents fell between 25years and 34years of age. About, 35.3% of the respondents had no formal education, 28.7% attended Koranic School, 20.6% had primary school leaving certificate. The reveals that few of the respondents had little or non-formal education in the study area. Majority (87.6%) of respondents were males while about, 12.4% of the respondents were female. This result is in consonance with the study of [11], which reported that charcoal production appears to be dominated by young men. Majority (79.8%) of respondents were married. In this area, 54.5% had crop farming, 19.7% had charcoal production as primary occupation. Majority, 76.4% of the respondents had charcoal production as secondary occupation and 22.5% of the respondents had crop farming as secondary occupation. [12] in a related study, reported that farmers are likely to involve in charcoal production because during land clearing, they use the stumps from trees destroyed to produce charcoal. Less than 50% of the respondents had more than 15 years of experience. About, 43.39% earned between N300,001 and N400,000 per annum.

Table 2: Distribution of Respondents according to the perceived effect of COVID-19 on the health of Charcoal Producers

	Effect of COVID-19 on the health of Charcoal Producers	SA		A		U		D		SD	
		Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
1	Most of my community members were infected by COVID-19	5	2.8	15	8.4	50	28.1	102	57.3	6	3.4
2	People that died in our community could be as a	96	53.9	42	23.6	39	21.9	0	0.0	01	0.6

	result of COVID-19										
3	Sneezing during charcoal production can be misconstrued to COVID-19	138	77.5	25	14.0	14	7.9	01	0.6	0	0.0
4	Repeated dry cough during this period is not a symptom of COVID-19	90	50.6	40	22.5	36	20.2	0	0.0	11	6.2
5	We are already used to body pain, weakness/ high fever during charcoal production hence cannot be a symptom of COVID-19	104	58.4	17	9.5	13	7.3	36	20.2	8	4.5
6	Charcoal producers always experienced difficult breathing during COVID-19	124	69.7	9	5.1	39	21.9	7	3.9	3	1.7
7	I found it difficult to get health attendants to confirm my health status during COVID-19 pandemic	34	19.1	96	53.9	20	11.2	17	9.6	11	6.2
8	We usually used local herbs to treat all ailments during COVID-19	139	78.1	30	16.9	0	0.0	6	3.4	3	1.7
9	No life was lost in my community during COVID-19	0	0.0	0	0.0	8	4.5	30	16.9	140	78.7
10	Local herbs can treat COVID-19	134	75.3	25	14.0	10	5.6	8	4.5	1	0.6
11	Because of our high immunity, none of us was infected with COVID-19	80	44.9	9	0.1	12	6.7	17	9.6	60	33.7
12	We recorded high death than before COVID-19 pandemic	124	69.7	16	9.0	19	10.9	10	5.6	9	5.1
13	Deforestation could not be attributed as part of cause to COVID-19	108	60.7	29	16.3	17	9.6	4	2.3	20	11.23
14	We are not ready to subject ourselves to COVID-19 test	120	67.4	47	26.4	0	0.0	11	6.2	10	5.6
15	1 sometimes experienced shivering/shaking (chills) during this period	44	24.7	67	37.6	14	7.9	3	1.7	50	28.1
16	Loss of taste/smell is part of my recent experience	23	12.9	14	7.9	26	14.6	66	37.1	49	27.5
17	COVID-19 is another type of Malaria	104	58.4	24	13.5	18	10.1	10	5.6	22	12.4
18	Diarrhea/abdominal pain are	98	55.1	23	12.9	26	14.6	22	12.4	8	4.5

	common ailments and so cannot be symptoms of COVID-19										
19	Headache, joint/chest pain are normal ailments of charcoal producers and so it may not necessarily be as a result of COVID-19	128	71.9	12	6.7	0	0.0	23	12.9	15	8.4

Perceived effect of COVID-19 on the health of Charcoal Producers

Table 2 reveals that 78.1% and 75.3% of the respondents strongly agreed respectively that they usually used local herbs to treat all ailments during COVID-19 and local herbs could treat COVID-19. About 69.7% of the respondents said that charcoal producers always experienced difficult breathing during COVID-19, 69.7% strongly agreed that high death were recorded than before COVID-19 pandemic. This may be confused with the symptoms and death of COVID-19. In addition, 67.4% of the respondents strongly agreed they were not ready to subject themselves to COVID-19 test in the area. About 77.5%, 50.6% and 58.4% of the respondents strongly agreed that sneezing and repeated dry cough during charcoal production could be misconstrued to symptoms of COVID-19 and that COVID-19 was another type of Malaria respectively.

The table further reveals that 78.7% of the respondents strongly disagreed that no life was lost in their community during COVID-19. While 53.9% of the respondents strongly agreed that people that died in their community could be as a result of COVID-19. The finding of this study was corroborated by [13] who concludes that joint/chest pain, cough, fatigue, shortness of breath, muscle pain, loss of smell and others are among the symptoms of COVID-19. This implies that lives were lost in their community during COVID-19 and some could be as result of COVID-19.

Table 3. Level of Perceived effect of COVID-19 on the health of Charcoal Producers

Perception on health-related problem	**Scores**	**Freq. N=178**	**%**
Low perception	19-82.3	157	88.2
High perception	82.4-95	11	11.8
Mean score	80.5		
Std. Dev.	8.9		

Level of Perceived effect of COVID-19 on the health of Charcoal Producers

Table 3 reveals that 88.2% of the respondents had low level of the effect of COVID-19 on their health. This implies that charcoal producers do not believe in the existence of COVID-19 pandemic. This might be as a result of their low level of education.

Table 4: Distribution of Respondents on Compliance with COVID-19 preventive measures

S/N	Compliance with COVID-19 preventive measures	SA		A		U		D		SD	
		%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.
1	My family always use face mask during COVID-19 pandemic	22	12.4	29	16.3	0	0	49	27.5	78	43.8
2	We always use sanitizers to rub our hands during COVID-19 pandemic	23	12.9	48	27.0	0	0	52	29.2	55	30.9
3	Washing of hands was not essential	34	19.1	19	10.7	0	0	49	27.5	78	43.8

	during COVID-19										
4	Social distancing are parts of the preventive measures during COVID-19	5	2.8	34	19.1	0	0	15	8.4	124	69.7
5	I cannot do without touching both face and nose during COVID-19	102	57.3	42	23.6	0	0	20	11.2	14	7.9
6	Shaking hands with customers/friends is a symbol of love during COVID-19 which we cannot avoid	98	55.1	37	20.8	0	0	10	5.6	33	18.5
7	It is not necessary to wash our clothes regularly to prevent COVID-19 infection	6	3.4	30	16.9	0	0	64	36.0	78	43.8
8	COVID-19 does not exist at all. It is a taboo	107	60.1	34	19.1	15	8.4	17	9.6	5	2.8
9	Using ashes to wash hands can do the same thing with soap during COVID-19	64	36.0	88	49.4	22	12.4	0		4	2.2

Compliance with COVID-19 preventive measures

Table 4 reveals that 60.1%, 55.1% and 57.3% of the respondents strongly agreed that COVID-19 did not exist at all, that it is a taboo, while shaking hands with customers/friends is a symbol of love and that they could not do without touching both face and nose during COVID-19 pandemic respectively. More so, about 69.7%, 43.8%, 43.8% and 43.8% strongly disagreed that social distancing were parts of the preventive measures, used of sanitizers to rub our hands were essential, that they always used face mask during COVID-19 pandemic and that it was not necessary to wash their clothes regularly to prevent COVID-19 infection respectively.

However, 49.4% of the respondents agreed that using ashes to wash hands could do the same thing with soap during COVID-19 pandemic. This implies that most of the respondents do not believe that COVID-19 exist at all.

Table 5. Level of Compliance with COVID-19 Preventive measures

Compliance with COVID-19 preventive measures	**Scores**	**Freq. N=178**	**%**
Low compliance	9-41.6	166	93.3
High compliance	41.7-45	12	6.7
Mean score	40.2		
Std. Dev.	2.9		

Level of Compliance with COVID-19 Preventive measures

Table 5 reveals that 93.3% of the respondents did not comply with the COVID-19 preventive measures. Since they believed that COVID-19 did not have any health implications during charcoal production, definitely they will not comply to its preventive measures.

Table 6. Relationship between Level of Compliance with COVID-19 Preventive measures and perceived effect of COVID-19 on the health of charcoal producers

Agro-ecological zone	N	r-value	p value	Decision
Guinea savannah	178	0.031	0.021	S

Relationship between Level of Compliance with COVID-19 Preventive measures and perceived effect of COVID-19 on the health of charcoal producers

Table 6 reveals that there is significant relationship between the level of compliance with COVID-19 preventive measures and perceived effect of COVID-19 on the health of charcoal producers in the study area (r=0.031). This implies that the more charcoal producers comply with COVID-19 preventive measures the more they will have high perception of the effect of COVID-19.

3. CONCLUSION

The study shows that males were predominant in charcoal production and they took the activity as secondary occupation. Charcoal producers did not comply with the COVID-19 preventive measures. They had low level perception to COVID-19 pandemic. More deaths were recorded during COVID-19. It was recommended that more awareness is needs to be made among the charcoal producers especially because of the similarity in some of the symptoms of COVID-19 and what they usually experience during charcoal production. Charcoal producers need to be encouraged to go for regular check-up in government hospitals so as to ascertain their health status. Also, government needs to be stricter in their action so as to ensure compliance to the COVID-19 preventive measures.

DISCLAIMER

The consent of all the people used for this research were sought including the use of all words and languages. There is absolutely no conflict of interest between the authors and charcoal producers and I do not intend to use the respondents for any litigation but for the advancement of knowledge. Also, the research was not funded by any government of non-governmental agencies rather it was funded by personal effort of the author.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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