

Perception of Dental Patients toward Covid-19 Infection

***Adesuwa A. EBOMWONYI, **Clement C. AZODO, ***Osagie I. EBOMWONYI**

**Department of Family Dentistry, Central Hospital, Benin City*

***Department of Periodontics, University of Benin / University of Benin Teaching Hospital, Benin City*

****Stella Obasanjo COVID Treatment Hospital.*

Correspondence

*Dr A. A. Ebomwonyi
Department of Family Dentistry
Central Hospital,
Benin City
Email: aebomwonyi@gmail.com*

ABSTRACT

Objective: To assess the knowledge, characteristics and prevention of Covid-19, perception of the effect of the virus on livelihood as well its virulence in causing disease. The perception of dental patients of the corona virus (COVID -19) infection in relation to knowledge of its virulence, prevention and its effect on their mental health and livelihood.

Methods: This study was conducted among patients attending the outpatient Dental Clinic of Central Hospital Benin City between July and August, 2020. Data collection tool was a self-administered questionnaire. Data was analyzed using IBM SPSS software version 21.0.

Results: Approximately 38.1% of respondents were male, 52.2% were married and majority were between the ages of 20-40 years old. In the study, Occupation was classified based on the International Standard Classification of Occupations where skill level 1 includes office cleaners, freight handlers, garden labourers, farmers and kitchen assistants; skill level 2 include butchers, bus drivers, accounts clerks, tailors, shop sales assistants, police officers, hair dressers, building electricians, and mechanics while skill level 3, includes shop managers, medical laboratory technicians, technicians and skill level 4, includes sales and marketing managers, engineers, teachers, medical practitioners, musicians, theatre nurses and computer systems analysts. However, this study revealed that respondents with Skill level 2&3 showed an overall good knowledge of the COVID-19 pandemic. The most commonly perceived symptoms of the corona virus in this study were fever and cough (>71%). Majority of the respondents came for self care and affirmed that the pandemic has psychologically affected them negatively.

Conclusion: Despite adequate knowledge about COVID 19 as a result of wide spread global public enlightenment, the cultural beliefs of people seem to play a great role in their health seeking behavior. This leads to varied notions, actions and inactions which could include stigmatization of confirmed cases in the face of an infectious disease outbreak.

Keywords: COVID -19, coronavirus, perception, stress.

INTRODUCTION

The Coronavirus disease (COVID-19) outbreak is a global health challenge which interrupted the regular operations of several service sectors including the healthcare sector (Coulthard, 2020). Understandably, the healthcare system is overstretched as efforts all around the world are directed at stemming the tide of an outbreak that has taken a massive global death toll. For instance, the USA recorded 1.8 million infections, and over 200,000 deaths as at September 2020, with

countries in Europe such as the UK, Italy France and Spain who have robust healthcare systems recording high infection and death rates (Worldometer, 2020).

Citation: Ebomwonyi AA, Azodo CC, Ebomwonyi OI (2020). Perception of dental patients towards Covid-19 infection. *Nig J Res Orofac Infect Oncol*; 3(2):55-64.

However, on the African continent, the case is different, as the rates and number of infections are

significantly lower compared to North America, Europe and South America.

Africa's most populous country, Nigeria, first index case arrived on the 28th of February 2020 (Ohia et al., 2020) since then the cases have risen slowly every day to 10,162 confirmed cases with 287 deaths as at 1st of June 2020 (NCDC, 2020). Currently, as at September 2020 the case fatality ratio of COVID-19 infection in Nigeria is 0.028 (i.e. 2.8% of total confirmed cases), which is relatively low and has been stable (NCDC, 2020).

The mode of transmission of the virus, is majorly through respiratory droplets and contact routes (Liu et al., 2020; Chan et al., 2020; Li Q et al., 2020; Huang et al., 2020; Burke et al., 2020; World Health Organisation 2020). However, in a World Health Organisation scientific briefing (World Health Organisation 2020) it was stated that airborne transmission of COVID-19 may be possible in specific circumstances and settings in which procedures that generate aerosols are performed. Dental procedures produce aerosols and droplets that have the potential to spread infections to dental professionals and other patients (Harrel, Molinari 2004). Thus, COVID-19 outbreak poses significant challenges for dental practice, especially in third world countries with fragile health systems.

The objectives of this study are to assess the knowledge of the characteristics and prevention of Covid-19, perception of the effect of the virus on livelihood as well its virulence in causing disease.

MATERIALS AND METHODS

The prospective analysis was through questionnaires while respecting social distancing rules in the Dental outpatient Clinic of the Central Hospital, Benin-City, Edo state, that serves as a major Dental center in the south-south Zone in Nigeria. The sample size of 270 was chosen, using the existing dental records of outpatient dental clinic attendance in the Centre from January 2020, a period prior to the study. Participants were those that attended the out-patient clinic and agreed to participate in the study after the purpose of the study was explained. Questionnaires were administered during the study period of July to August 2020.

$$n = \frac{z^2 pq}{d^2}$$

n= required sample size

z= standard normal deviate

p = 22% which is prevalence of adults who have attended dental clinics in Benin City within the past 12 months (Okunseri et al., 2004), q = 1-p=88%

$$N = \frac{1.96^2 \times 0.22 \times 0.88}{0.05^2}$$

N= 263.68 approx. 264.

However, the sample size in this study was set at 270. The patients' demographic characteristics and the reasons for visiting was recorded. The questionnaire was designed by adopting concepts from the Brief

Illness Perception Questionnaire (Brief IPQ), to elicit the perspectives of the dental outpatients of the COVID 19 outbreak as it relates to their dental care. In scoring the perception of participants to the effects of Covid-19 on personal life, a scale of 0-10 was used and responses grouped into;

0-3: Mild/no effect/not at all/little time/no control/no understanding/not affected at all

4-6: Moderate effect/moderate control/sometimes/fair understanding/moderately affected

7-10: Severe/severe effect/forever/clear understanding/severely affected/extremely helpful

Continuous variables are presented as Mean \pm standard deviation (SD). Categorical variables are presented as percentages and analyzed using SPSS Statistics, version 21.0 (IBM Corp., Chicago, USA). The level of statistical significance was determined using chi-square test. The significance level was set at p = 0.05.

Occupation was classified based on the International Standard Classification of Occupations (International Labour Office 2012) Namely, skill level 1: includes office cleaners, freight handlers, garden labourers, farmers and kitchen assistants; skill level 2: includes butchers, bus drivers, accounts clerks, tailors, shop sales assistants, police officers, hair dressers, building electricians, and mechanics; skill level 3: includes shop managers, medical laboratory technicians, technicians; skill level 4: includes sales and marketing managers, engineers, teachers, medical practitioners, musicians, theatre nurses and computer systems analysts. Persons who were not engaged in any form of employment were included in skill level 1.

QUESTIONNAIRE

Dental Outpatient Perspective on COVID-19 at Central Hospital Benin-City

- Sex:.....
- Age (years):.....
- Marital status: a) Single b) Married c) Separated d) Divorced
- Tribe:.....
- Job Description or (Father's Occupation for non-Adults):.....
- You are in the clinic for a) Personal care b) For your Child c) For a Parent d) Other
- What is the nature of your dental problem:.....
- Would you rank it as a) Serious b) Moderate c) Mild d) Routine?

Section B

- Do you think coronavirus is real? a) Yes (b) Yes but overhyped by government c) No d) not sure
- Can coronavirus be transmitted from person to person? A) Yes b) No
- Who do you feel is more at risk? a) patients b) Doctors c) Both d) Nobody
- Do you Know anybody that has had it around you or heard of anybody in Nigeria that has had it? a) Yes b) No
- Do you feel that local remedies like agbo can cure it? a) Yes b) No
- Do you think Africans/ blackman are less affected by Coronavirus? a) Yes b) No
- What are the symptoms you know of coronavirus?

- Cough:** a) Yes b) No **Fever:** a) Yes b) No **Diarrhoea:** a) Yes b) No
Loss of Smell (anosmia): a) Yes b) No
Paraplegia: a) Yes b) No **Headache:** a) Yes b) No
- h) Do you think the posters and information in the dental clinic has changed or helped your view on the risk of Coronavirus? a) Yes b) No?
- i) Do you feel safe coming to the hospital during this period? a) Yes b) No
- j) Do you feel at risk from dentists who may have seen other patients that they may infect you? a) Yes b) No
- k) Can COVID-19 be transmitted in the dental clinic? a) Yes b) No
- l) Should COVID-19 positive people be allowed to visit the dental clinic? a) Yes b) No
- m) Should a dentist treat COVID-19 positive people in the dental clinic? a) Yes b) No
- n) Would be willing to receive treatment from this this clinic, if you know a covid positive patient has been treated here? a) Yes b) No
- o) Is there any patient you felt you suspected may have it? a) Yes b) No,
- p) If yes what did you do?.....
- q) Do you feel that social distance rules are maintained in the outpatient ward? a) Yes b) No
- r) Are the number of people in the clinic a) too small) small c) the right size d) too much
- s) Are you surprised at the number of people you saw in the clinic? a) Yes b) No
- t) Do you feel anxious about the effects of Covid-19 on your Job/work? a) Yes b) No
- u) Do you feel the stress of the pandemic is affecting you? a) Yes b) No
- v) Are you surprised at the number of people you saw in the clinic? a) Yes b) No
- w) Do you feel anxious about the effects of Covid-19 on your Job/work? a) Yes b) No
- x) Do you feel the pandemic is causing you stress? a) Yes b) No
- y) How do you think Corona virus is transmitted? A) by staying near a person coughing and sneezing b) sharing cutlery c) touching contaminated surfaces d) none are correct e) all are correct
- z) How do you think Corona virus can be prevented?
a) Washing hands regularly yes[] No[] b) Wearing a face mask when going out yes[] No[]
c) Avoiding crowded places yes[] No[] e) Covering mouth and nose when sneezing yes[] No[]
d) Going to church service to pray without face mask yes[] No[]

For the following questions, please circle the number that best corresponds to your views:

How much has Covid-19 affected your life? 0 no affect at all 1 2 3 4 5 6 7 8 9 10 severely affects my life
How long do you think this covid-19 will last? 0 a very short time 1 2 3 4 5 6 7 8 9 10 forever
How much control do you feel you have over your personal situation during this pandemic? 0 absolutely no control 1 2 3 4 5 6 7 8 9 10 extreme amount of control
How much do you think your dental treatment can help you cope during this period? 0 not at all 1 2 3 4 5 6 7 8 9 10 extremely helpful
How much has this outbreak and the control measures prevented you from receiving dental care? 0 Not at all 1 2 3 4 5 6 7 8 9 10 Very Much
How concerned are you about this disease? 0 not at all concerned 1 2 3 4 5 6 7 8 9 10 extremely concerned
How much do you feel you understand this disease? 0 don't understand at all 1 2 3 4 5 6 7 8 9 10 understand very clearly
How much does covid-19 affect you emotionally? (e.g. does it make you angry, scared, upset or depressed?) 0 not at all affected emotionally 1 2 3 4 5 6 7 8 9 10 extremely affected emotionally
Please list in rank-order the three most important factors that you believe caused <u>your</u> illness. The most important causes for me:- 1. _____ 2. _____ 3. _____

RESULTS

Forty (14.4%) respondents were less than 20 years of age while 26 (4.3%) respondents were between the ages 60-69 years. The mean (SD) age of respondents was 37 (17.0) years. Majority (61.9%) of the respondents were female while (38.1% of the respondents were male. One hundred and forty five (52.2%) respondents were married while 119 (42.8%) respondents were single. Eighty four (30.2%) respondents had skill level 3 while nineteen (6.8%) respondents had skill level 4. One hundred and forty one (50.7%) respondents were Bini, forty one (14.7%)

were Esan while thirty two (11.5%) respondents were Igbo (Table 1).

Two hundred and forty one (86.7%) respondents visited the dental clinic to receive treatment while twenty five (9.0%) respondents accompanied a child. One hundred (36.0%) respondents respectively reported that the reason for visiting the clinic was due to a severe dental condition while 51 (18.3%) visited for routine follow up. One hundred and ninety one (68.7%) had a complaint of pain, while 10 (3.6%) reported a broken denture as the reason for visiting (Table 2).

Table 1: Characteristics of study participants

Variable	Frequency (n=278)	Percent
Age group (years)		
<20	40	14.4
20-29	70	25.2
30-39	60	21.6
40-49	47	16.9
50-59	23	8.3
60-69	26	9.4
70 and above	12	4.3
Mean \pm SD (years)	37.0 \pm 17.0	
Sex		
Female	172	61.9
Male	106	38.1
Marital status		
Single	119	42.8
Married	145	52.2
Separated/divorced	13	4.7
Widowed	1	0.4
Skill level of respondent/guardian		
Skill level 1	9	3.2
Skill level 2	84	30.2
Skill level 3	84	30.2
Skill level 4	19	6.8
Others*	25	9.0
No information**	58	20.9
Ethnic group		
Bini	141	50.7
Esan	41	14.7
Igbo	32	11.5
Afemai	19	6.8
Yoruba	15	5.4
Urhobo/Itsekiri/Ijaw	13	4.7
Hausa	9	3.2
Efik	5	1.8
Ika/Ukwani	3	1.1

*Students, housewives

**Respondents did not provide information on their occupation

Table 2: Reason for respondents attending clinic and severity of problem

Variable	Frequency (n= 278)	Percent
Reasons for visitation		
Personal care	241	86.7
For a child	25	9.0
For a parent	12	4.3
Severity of complaint		
Mild	27	9.7
Moderate	100	36.0
Severe	100	36.0
Routine*	51	18.3
Nature of complaint		
Pain	191	68.7
Broken denture	10	3.6
Ulcer in mouth/swollen gum/growth in mouth	10	3.6
Bad breath	9	3.2
Scaling and polishing	6	2.1
Crowning of tooth	1	0.4
Routine check-up	51	18.4

*Routine follow up

Two hundred and sixteen (77.7%) respondents believed that COVID-19 was real; 203 (73.0%) believed everybody is at risk of COVID-19; One hundred and thirty one (47.1%) respondents believed Africans are less affected by COVID-19; 206 (74.1%) respondents chose fever as one of the symptoms of COVID-19, while 199 (71.6%) respondents reported cough as a symptom (Table 3). 255 (91.7%) respondents believed washing hands regularly can prevent the spread of COVID-19, while 221 (79.5%) respondents believed that wearing a face mask when going out can prevent transmission of COVID-19 (Table 3).

Majority, 68% of the respondents believed COVID-19 can be transmitted in the dental clinic, 39.9% of respondents believed COVID-19 positive persons should be allowed to visit dental clinic while 36.3% respondents were willing to receive treatment from a clinic where COVID-19 patients was treated (Figure 1).

More than half of the respondents 52.8% believed that the pandemic had a mild effect on their life; however, 48.1% of the respondents reported that covid-19 had a severely affected them emotionally. Below half, 47.5% of respondents believed that covid-19 would last a very short time while almost two-thirds, 61.7% of respondents believed that they had good level of control over personal situations during the pandemic. Two-thirds, 63.6% of respondents believed that dental treatments could provide a means of coping during the pandemic while 41.0% reported that the pandemic had not affected their utilization of dental services (Table 4).

One hundred and six (71.6%) believed COVID-19 can be transmitted by staying close to someone who is coughing or sneezing; Thirty (10.8%) respondents suspected a patient in the clinic could have symptoms of COVID-19; One hundred and forty one (50.7%) respondents perceived that the number of clients in the clinic was the right size while 102 (36.7%) respondents were surprised by the number of clients seen in the clinic (Table 5).

DISCUSSION

COVID-19 outbreak has proved to be the worst pandemic that has hit the world in the last two decades involving more than 200 countries (Richmond, Baglolo 2003). Nigeria recorded its first case in February 2020 (Worldometer 2020) and has been on the increase since then. This study showed that respondents had an overall good knowledge of the pandemic, its transmission, cardinal symptoms and how to prevent it. This aligns with the findings of other researchers in Nigeria who reported same. (Worldometer, 2020; Ohia et al., 2020).

This population had a skill level of 2,3 (60.4%) with majority believing the reality of the virus and its transmission despite the fact that majority had not come across any known or confirmed cases of the corona virus. This is however in contrast with that found in a Nigerian study (Worldometer 2020). The acceptance of the reality of the virus could be attributed to the fact that many organizations and international agencies have embarked on massive awareness campaigns and information dissemination about COVID-19, using radio, television, billboards, posters (Reuben et al., 2020) as well as the internet and social media where almost real time information can be gotten (Olapegba et al., 2020).

The IEC materials in the dental centre also helped in the information dissemination. This holds true to reports from studies where conventional and social media methods were used to create enlightenment and disseminate updates on the virus in various languages (Hager et al., 2019; Olapegba et al., 2020). Since the declaration of COVID 19 as a pandemic by the World Health Organization, there has been a continuous influx of information online by internet savvy populace. This helps in the dissemination of reliable information and elimination of disinformation.

The influence of our culture on our belief system cannot be down played. This reflected in this study as respondents believed in local remedies bringing about a cure to the virus and that Africans are less affected by the disease. Studies from Nigeria and a sister country in Africa (Ghana), conveyed that the people also rely on supernatural influences for recuperation from disease affliction based on their existing beliefs (World stat 2020; Amzat et al., 2020).

The majority (91.7%) of the respondents portrayed that good preventive practices such as improvement in hand hygiene (frequent handwashing) and the use of face masks works in the prevention of the corona virus. This corroborates findings in similar studies in Nigeria where handwashing proved to be a beneficial intervention in preventing respiratory disease for all levels of the Nigerian population and in all aspects of human interaction (Asare, Danquah 2017).

Furthermore, Nigerians have applauded the initiative to use face mask in the fight against COVID 19 as declared in a publication by World Health Organisation. This publication states that it is an effective method in preventing community spread made evident by majority of respondents using a facemask (Chukwuneke et al., 2012).

Table 3: Knowledge of COVID-19 among respondents

Variable	Frequency (n= 278)	Percent
COVID-19 is real		
Yes	216	77.7
Yes but overstated by government	41	14.7
No	12	4.3
Not sure	9	3.2
COVID-19 transmitted from person to person		
Yes	253	91.0
No	25	9.0
Who is more at risk		
Doctors	53	19.1
Patients	11	4.0
Nobody	11	4.0
Every body	203	73.0
Respondents' knowledge of anyone who has COVID-19		
Yes	90	32.4
No	198	71.2
Local remedies can cure COVID-19		
Yes	82	31.3
No	191	68.7
Africans are less affected by COVID-19		
Yes	131	47.1
No	147	52.9
Symptoms of COVID-19* known by respondents		
Fever	206	74.1
Cough	199	71.6
Headache	81	29.1
Loss of smell	74	26.6
Diarrhoea	31	21.5
Paraplegia	30	20.8
Transmission of COVID-19		
Staying close to a person who is coughing/sneezing	106	71.6
Touching contaminated surface	11	4.0
Sharing cutlery/utensils	3	1.1
All above is correct	129	46.4
None of above is correct	8	2.9
No response	21	7.6
Prevention of COVID-19*		
Washing hands regularly	255	91.7
Wearing a face mask when going out	221	79.5
Avoiding crowded places	198	71.2
Covering mouth and nose when sneezing	198	71.2
IEC materials in dental clinic provided information about COVID-19	187	67.3
It safe coming to hospital during COVID-19 pandemic	152	54.7
Increased risk of infection from dentist who have seen other clients	156	56.1

*Multiple response

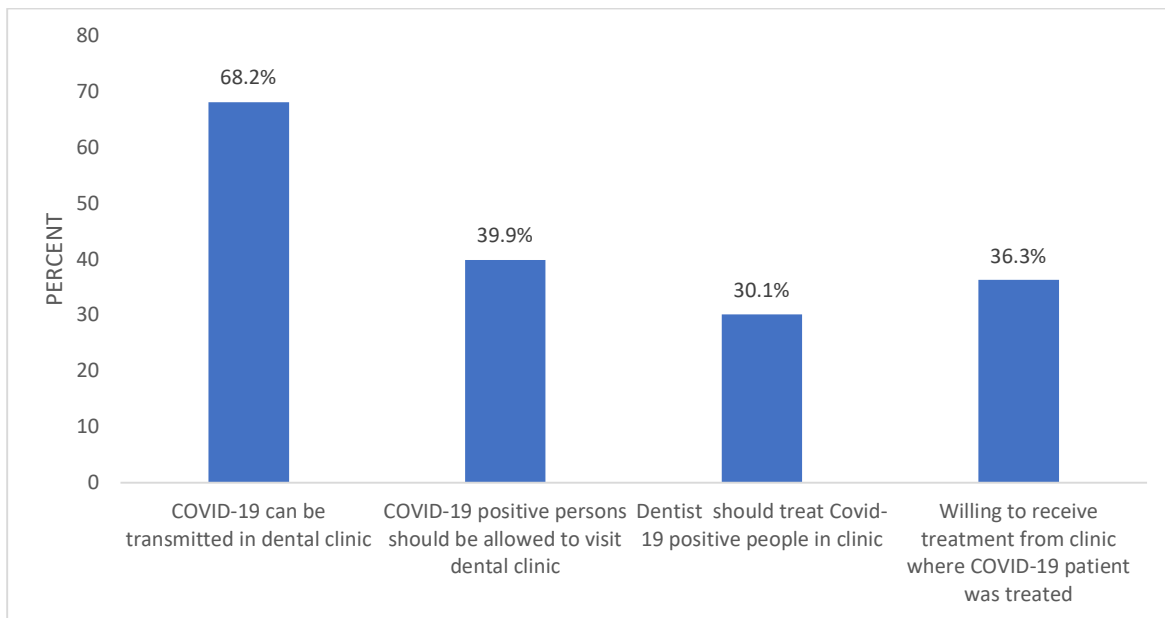


Figure 1: Respondents' perception about the transmission of covid-19 in the dental clinic

Table 4: Perception of the effects of COVID-19 on the personal life of respondents

Variables	Perceived effect *		
	mild	moderate	severe
Covid-19 has affected my life	24.9	22.2	52.8
Length of time covid-19 will last	47.5	30.4	22.1
Control over personal situation during pandemic	61.7	21.8	16.4
Dental treatment providing a coping mechanism during pandemic	16.9	19.5	63.6
Pandemic has affected utilization of dental services	41.0	19.8	39.2
Level of concern regarding disease	13.6	17.7	68.9
Understanding of Covid-19	15.7	19.7	64.6
Emotional effect of covid-19	22.4	29.3	48.1

***Scale:**

0-3: Mild/no effect/not at all/little time/no control/no understanding/not affected at all

4-6: Moderate effect/moderate control/sometimes/fair understanding/moderately affected

7-10: Severe/severe effect/forever/clear understanding/severely affected/extremely helpful

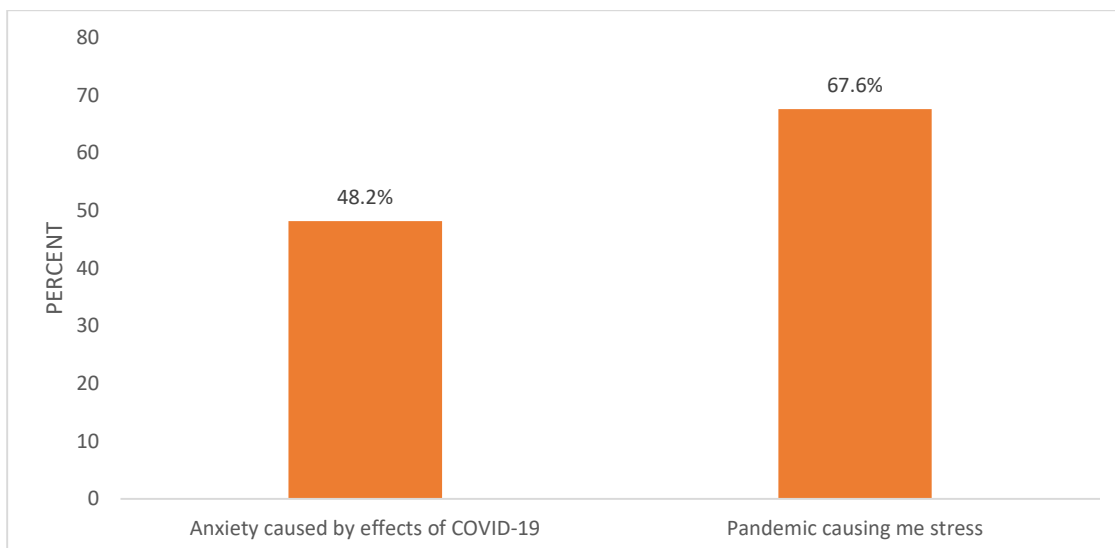


Figure 2: Effects of Covid-19 Pandemic on Respondents

Table 5: Measures taken to prevent spread of COVID-19 in dental clinic

Variable	Frequency	Percent
Suspected patient in clinic had symptoms of COVID-19	(n=278)	
Yes	30	10.8
No	248	89.2
Actions taken regarding suspected case	(n=30)	
Left clinic/kept a distance	5	16.7
Asked person suspected to leave	3	10.0
Protected myself with face mask and hand sanitizer	2	6.7
Asked individual to seek medical care	2	6.7
Reported individual to a health worker	1	3.3
Simply ignored individual	1	3.3
No response provided	16	53.3
Social distancing rules maintained in clinic	(n=278)	
Yes	154	55.4
No	124	44.6
Perceived number of clients in clinic		
Right size	141	50.7
Too many	61	21.9
Small	33	11.9
Too small	10	3.6
No response	33	11.9
Surprised with number of clients seen in clinic		
Yes	102	36.7
No	176	63.3

Dentistry is one of the very high-risk occupations with regards to production of aerosols and contracting the disease because of aerosolization. As it is known, the virus is aerosolized by sneezing, coughing and obviously dental treatment. The viral particles can be projected to as far as 20 feet from an infected person to the environment and people by causing secondary infections. All dental staff are at risk as infection could result from splatter, from the nasopharyngeal area of dental patients and droplets (Nejatidanesh et al., 2013). Dental procedures typically involve the use of drills, high speed handpieces, water and air syringes (Harrel, Molinari 2004). Ultrasonic scalers, produce aerosols that could be transported for up to six feet (Miller, 1995).

The corona virus has also been detected in saliva which forms a basis for the collection of saliva and nasopharyngeal swabs as specimen for testing. This specimen poses a risk to health care workers especially dentists who work primarily in the mouth (Kelvin Kai-Wang et al., 2019).

It is important to evaluate outpatient perspectives during epidemics in order to realize effects of information about infection control on health seeking behavior. In a study conducted to assess the perceptions of out-patients attending hospital during the SARS outbreak in Japan, the intentions to attend hospital were evaluated with a view to assessing the impact of information about SARS infection control on health seeking behavior (Guo et al., 2020). It was observed that those seeking care would reduce significantly by 20% either due to knowledge, cultural beliefs and an inability to care for themselves and

dependents due to the negative effect of the epidemic as was also seen in other outpatient epidemics in Africa. (Ishizaki et al 2004; Obeta & Ejnaka, 2020).

In reference to this study, majority (68.2%) of respondents believed COVID 19 to be transmitted in the dental clinic and as such didn't welcome the idea of COVID positive patients being allowed to visit the dental clinic (39.9%), be treated by a dentist (30.1%) and were not willing to receive treatment from a clinic where such patients were being treated (36.3%). This is similar to other studies where stigmatization of patients with infectious diseases was rampant. (World Health Organisation 2020).

Infectious disease epidemics have been known to be greatly associated with stigmatization (Bagcchi, 2020). It can negatively affect people from seeking and assessing health care as patients that believe they are stigmatized, exhibit hesitance in seeking health care because of fear of being labelled while others become afraid of and avoid those who are perceived to be sick. This leads to bias against them (Bagcchi, 2020).

According to the New York times in March 2020 and Dentistry today article of May 2020, Dentistry is one of the professions most exposed to the risks associated with the COVID 19 contagion. Clinical protocols have therefore been put in place to avoid infection and reinfection in the work place. This is meant to ensure patient and doctor health protection. (Bruns, Kraguljac & Bruns 2020). Contingent upon the fact that people react differently to various disease conditions, this study shows 48.2% of respondents exhibiting anxiety while 67.6% attested to being stressed as a result of COVID 19 pandemic. Anxiety and stress being

reportedly the main psychological issues associated with the pandemic and a high level of concern (68.9%) regarding the aftermath of the pandemic as it affects health and economic viability, thus resulting in emotional distress.

Similar findings were observed in a research carried out to review over eighty (80) papers across various countries of the world on the mental health effect of COVID-19. This review of the clinical and psychological traits revealed the emergence of extensive stressors affecting negatively both the general population, patients and health workers (Villani et al., 2020; Semo & Frissa, 2020).

In this respect, the COVID-19 pandemic provides an opportunity to collect information, as a metric for implementing preparedness, outreach programmes and improving outpatient health management performance in an era of emerging and re-emerging diseases. It is also important to take opportunity of the present period to determine how individuals respond to a perceived health threat in the context of possible interactions of health messaging, by assessing patient perspectives. It is hypothesized that patient's perspective of the COVID-19 outbreak may have influenced the drop in utilization observed; hence information derived could assist dental institutions in assessing the formation of the illness/threat representation in patients and help in the preparedness and adoption of coping responses in emergency situations such as that created by the COVID-19 epidemic.

CONCLUSION

This study revealed that participants had adequate knowledge of Covid-19 and its prevention. This has resulted in precautions taken to reduce risk of spread. However, risk perception as a result of readily available information resulted in stress and a heightened concern regarding the disease resulting in a sense of reduced control over personal situations. This leads to varied notions, actions and in-actions in the face of an infectious disease outbreak. It is our recommendation that private and Governmental agencies help promote information geared towards eliciting lasting behavioral change in the areas of cultural beliefs, prevention and non-stigmatization of suspected cases as well as ensuring constant availability of protective gear for dentists in order to protect them and curb the spread. With measures evidently put in place, confidence in seeking health care despite the pandemic would increase, psychological moral of the populace will be boosted, mental health challenges and stress will be prevented.

REFERENCES

Amzat J, Aminu K, Kolo VI, Akinyele AA, Ogundairo JA, Danjibo CM (2020). Coronavirus outbreak in Nigeria: Burden and socio-medical response

during the first 100 days. *Int J Infect Dis*; 98: 218-224.

Asare M, Danquah SA (2017). The African Belief System and the Patient's Choice of Treatment from Existing Health Models: The Case of Ghana. *Acta Psychopathol*; 3(4): 49

Bagcchi S (2020). Stigma during the COVID-19 pandemic. *Lancet Infect Dis*; 20(7): 782. doi:10.1016/S1473-3099(20)30498-9

Bruns DP, Kraguljac NV, Bruns TR (2020). COVID-19: Facts, Cultural Considerations, and Risk of Stigmatization. *J Transcult Nurs*; 31(4):326-332.

Burke RM, Midgley CM, Dratch A, Fenstersheib M, Haupt T, Holshue M, et al (2020). Active monitoring of persons exposed to patients with confirmed COVID-19- United States, January–February 2020. *MMWR Morb Mortal Wkly Rep* 6; 69(9):245-246.

Chan J, Yuan S, Kok K et al. A familial cluster of pneumonia associated with the 2019 novel coronavirus indicating person-to-person transmission: a study of a family cluster. *Lancet* 2020.

Chukwuneke FN, Ezeonu CT, Onyire BN, Ezeonu PO (2012). Culture and biomedical care in Africa: the influence of culture on biomedical care in a traditional African society, Nigeria, West Africa. *Niger J Med. Sci*; 21(3):331-333.

Coulthard P (2020). Dentistry and coronavirus (COVID-19) - moral decision-making. *Br Dent J*; 228:503-505

Guo H, Yin Zhou, Xiaoqiang Liu C, Jianguo Tan (2020). The impact of the COVID-19 epidemic on the utilization of emergency dental services. *J Dent Sci*; 15 (4): 564-547.

Hager E, Odetokun, IA, Bolarinwa, O, Zainab A, Okechukwu O Al-Mustapha Al (2020). Knowledge, attitude, and perceptions towards the 2019 Coronavirus Pandemic: A bi-national survey in Africa. *PLOS ONE*, 15(7), e0236918.

Harrel SK, Molinari J (2004). Aerosol and splatter in dentistry: A brief review of the literature and infection control implications. *J Am Dent Assoc*; 135(4):429-437.

Huang C, Wang Y, Li X, et al (2020). Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. *Lancet*; 395: 497–506.

International Labour Office (2012). International Standard Classification of Occupations: ISCO-o8. ILO, Geneva: 12–16.

Internet World Stat (IWS) (2020). Internet penetration in Africa (2020) <https://www.internetworldstats.com/stats1.htm>

Ishizaki T, Imanaka Y, Hirose M, Hayashida K, Kizu M, Inoue A, Sugie S (2004). Estimation of the impact of providing outpatients with information about

- SARS infection control on their intention of outpatient visit. *Health Policy*; 69(3): 293–303.
- Kelvin Kai-Wang To, Owen Tak-Yin Tsang, Cyril Chik-Yan Yip, Kwok-Hung Chan, Tak-Chiu Wu, Jacky Man-Chun Chan et al (2020). Consistent Detection of 2019 Novel Coronavirus in Saliva, *Clinical Infect Dis*; 71(15):841-843.
- Li Q, Guan X, Wu P, et al. (2020). Early transmission dynamics in Wuhan, China, of novel coronavirus-infected pneumonia. *N Engl J Med*; 382: 1199-1207.
- Liu J, Liao X, Qian S et al (2020). Community transmission of severe acute respiratory syndrome Coronavirus 2, Shenzhen, China, 2020. *Emerg Infect Dis*; 26(6):1320-1323.
- Miller RL (1995). Characteristics of blood-containing aerosols generated by common powered dental instruments. *Am Ind Hyg Assoc J*; 56(7):670-676.
- Nejatidanesh F, Khosravi Z, Goroohi H, Badrian H, Savabi O (2013). Risk of contamination of different areas of dentist's face during dental practices. *Int J Prev Med*. 2013;4(5):611-615.
- Nigeria Centre for Disease Control (NCDC) (2020); Retrieved, June 1, 2020; <https://covid19.ncdc.gov.ng/>
- Obeta M Uchejeso, Ejnaka R Obiora (2020). Hand Washing and Personal Hygiene among Nigerians in the face of COVID-19 (Coronavirus). *AJBSR.MS*; 8(6).
- Ohia C, Bakarey A, Ahmad T (2020). COVID-19 and Nigeria: putting the realities in context. *Int. J Infect Dis*; 95:279–281.
- Ohia C, Bakarey AS, Ahmad T (2020). COVID-19 and Nigeria: putting the realities in context. *Int J Infect Dis*; 95: 279-281.
- Okunseri C, Born D, Chattopadhyay A (2004). Self-reported dental visits among adults in benin city, Nigeria. *Int Dent J*; 54(6): 450-456.
- Olapegba PO, Ayandele O, Kolawole SO, Oguntayo R, Gandhi JC, Dangiwa AL, Ottu IFA, Iorfa SK (2020). A preliminary assessment of novel coronavirus (COVID-19) knowledge and perceptions in Nigeria. *BMJ*; doi:10.31234/osf.io/j356x.
- Reuben RC, Danladi MMA, Saleh DA, Ejembi PE (2020). Knowledge, Attitudes and Practices Towards COVID-19: An Epidemiological Survey in North-Central Nigeria. *J Community Health*; 7:1-14.
- Richmond JK, Baglole DJ (2003) Lassa fever: Epidemiology, clinical features, and social consequences; *BMJ*; 327 :1271-1275
- Semo B, Frissa SM (2020). The mental Health Impact of the Covid 19 pandemic. Implication for sub-Saharan Africa. *Psychol Res Behav Manag*; 13: 713-720.
- Van Doremalen N, Bushmaker T, Morris DH, et al (2020). Aerosol and surface stability of SARS-CoV-2 as compared with SARS-CoV-1. *N Engl J Med*; 382(16):1564-1567.
- Villani FA, Aiuto R, Paglia L, Re D (2020). COVID-19 and Dentistry: Prevention in dental practice, a literature review. *Int J Environ Res Public Health*; 17(12):4609.
- World health organization (2020). Infographics; <https://covid19.who.int/>
- World Health Organization (2020). Report of the WHO-China Joint Mission on Coronavirus Disease 2019 (COVID-19). Geneva; www.who.int/
- World Health Organization. (2020). Modes of transmission of virus causing COVID-19: Implications for IPC precaution recommendations. Scientific brief; <https://apps.who.int/iris/handle/10665/331601>.
- Worldometer. (n.d.). Reported Cases and Deaths by Country, Territory, or Conveyance. Retrieved June,1,2020.
- Worldometers, Coronavirus Update (Live) <https://www.worldometers.info/coronavirus/>, 2020