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Shock Wave of a New Pandemic: Response of Antenatal Women in Ebonyi State, Nigeria to Corona Virus 19 Infection—Knowledge, Attitude and Practice

Chidi Esike[1]*, Justus Eze[1], Okechukwu Anozie[1], Emeka Onwe[2], Richard Ewah[3], Esther Emeka-Irem[1], Ndukwe Nwigboji[1], Emeka Ukaegbe[1], Ugochukwu Nnadozie[4], Odidika Umeora[1]

[1]Department of Obstetrics and Gynecology, Alex Ekwueme Federal University Teaching Hopital, Abakaliki, Ebonyi State, Nigeria
[2]Department of Pediatrics, Alex Ekwueme Federal University Teaching Hopital, Abakaliki, Ebonyi State, Nigeria
[3]Department of Anesthesia, Alex Ekwueme Federal University Teaching Hopital, Abakaliki, Ebonyi State, Nigeria
[4]Division of Plastic Surgery, Department of Surgery, Alex Ekwueme Federal University Teaching Hopital, Abakaliki, Ebonyi State, Nigeria
Email: *drchidiesike@yahoo.com

Abstract

Background: There are no known effective vaccines or drugs for curing the corona 19 virus infection as at present knowlede. This leaves the world with mainly controlling the source of infection and cutting off the transmission route through preventive measures to contain the pandemic. These entail active participation of people, high level of discipline and strict and meticulous adoption of preventive measures. Since it is known that knowledge, precautionary behavior and active social participation of the public are important to control the pandemic, this study sets out to evaluate these in the antenatal population in Ebonyi State. **Objective:** To evaluate the Knowledge, attitude and practice of the respondents to the corona virus 19 infection and its prevention. **Methods:** A self-administered pre-tested questionnaire was administered to pregnant women attending antenatal clinics in the chosen Mission hospitals and the only tertiary health institution that offer antenatal care to the bulk of antenatal population in the state. The results were analyzed using SPSS version 20 and Microsoft Excel 2016. **Result:** The participants had very good knowledge of corona virus 19 infection and its prevention but there were some gaps and misconceptions in knowledge and some of their attitudes and perceptions that raised concerns. Their practice of corona virus 19 preventive measures was poor despite their good knowledge. **Conclusion:** There

is need to fashion out programs and policies that will address the gaps and concerns unearthed in the study to enhance the protection of this vulnerable study population and the general public.

Keywords

Knowledge, Practice, Antenatal Population, Ebonyi, Nigeria

1. Introduction

The outbreak of the Corona virus 19 infection was a novel strain of the Corona virus in Wuhan China [1] in December 2019. From these earlier reported cases in China, it has spread to the countries of the world leaving in its wake grave devastations, morbidity and mortality in affected persons [2]. This virus with no known ethnic, racial or socio-cultural bias was declared an international public health emergency of international concern by the World Health Organization (WHO) in January 2020 [3] and a pandemic on 11th March 2020 [4].

Despite its known continued aggressive devastation on all populations, there are no known effective vaccines or drugs for curing it as at the present level of knowledge [5]. This leaves the world with mainly controlling the source of infection and cutting off the transmission route through social distancing, hand washing and other preventive measures as the only source of containing the pandemic [6] for now. These entail active participation of people, high level of discipline and strict and meticulous adoption of preventive measures [7].

The commonest clinical features of COVID 19 include fever, cough, acute respiratory distress, difficulty in breathing etc. [8]. Pattern of spread and importation of the Corona virus 19 in Africa affirms previously published reports assessing preparedness and vulnerability of African countries to the virus and Nigeria has variable capacity and high vulnerability to the virus [9].

Despite spirited efforts by African countries including Nigeria to stop the virus from gaining entry into them, measures failed and on February 20, 2020 Nigeria reported her first case of Corona Virus 19 infection in Lagos in an Italian National [10]. The virus has since then spread to all the states of Nigeria, Ebonyi State inclusive.

The antenatal population is not discriminated against by the virus in its spread and is understandably most likely to have higher vulnerability to the COVID 19 infection unlike other members of the population [11]. Also, the case of pregnant women is even more precarious and has more grave implications for the society as the infection of the virus may be both for the mother and her unborn baby especially with the implication of the transmission of the virus to the unborn baby not being fully elucidated.

Since prevention is key to avoiding being infected by the virus and it has been

confirmed that the knowledge, perception and precautionary behaviors and active social participation of the public have been found to be important in the control of the pandemic, it is important to evaluate these indices in a population to further assess how they are coping in preventing the disease and what further measures that can be undertaken in fashioning policies that will keep the population safe. This, coupled with the fact that no study had been done to evaluate the knowledge, attitude, perception and practice of our antenatal population towards the corona virus 19 infection and practices towards its prevention in this population in Ebonyi State makes this study a necessity. The outcome will help identify gaps that can be filled by strengthening policies, addressing fears and concerns and improving implementation of preventive measures, not only in the antenatal but the general population toward the prevention of contraction of COVID 19 infection by these vulnerable population and their families.

2. Methods

Ebonyi State where this study was carried out, is one of the 36 states that make up Nigeria and it is located in the Southeast geo-political zone of the country. From 2006 National population Commission, the state has a population of 2,176,947 people [12]. It has 3 senatorial zones. The health indices like most other states in the country are poor and the government's primary and secondary health systems are near collapse leaving five missionary hospitals namely Mile Four hospital Abakaliki, Mater Hospital Afikpo, St Vincent's Hospital Ndubia, Presbyterian Joint Hopital, Uburu, and Sudan Interior Mission Iziogo and Alex Ekwueme Federal University Teaching Hospital in Abakaliki in the state to cater for a significant number of the antenatal population of the state. The Teaching hospital was chosen for this study as the only tertiary hospital in the state out of the two hospitals in Abakaliki (Mile Four Hospital being the other one). By simple balloting, St Vincent's Hospital Ndubia was chosen of the two hospitals in Izzi Local Government Area and Mater hospital by simple balloting out of the two mission hospitals in Ebonyi South Senatorial zone.

A well-structured, self administered questionnaire which was pre-tested in one of the mission hospitals not chosen for the study (the Mile four Hospital, Abakaliki) and corrections made was administered on women who came for antenatal clinics in these hospitals from May to July 2020. The results were collated and analysed.

3. Results

Three hundred and ninety-six questionnaires were distributed but 385 or 97.2% were completely filled and analyzed using both descriptive and inferential statistics with the aid of Statistical Package for Social Sciences version 20 and Microsoft Excel 2016.

The age range of participants as can be seen in Table 1 was 18 to 44 with a mean age of 27.9 (±5.4) years. Also as can be seen from table one, majority of the participants, 146 (37.9%) were in the business/trading occupation, civil servants were in the second position with 101 (26.2%). Majority, 380 (98.7%) were Christians and 371 (96.4%) were married. In terms of educational status (Table 1), majority, 180 (46.8%) had tertiary education followed by 150 (39%) who had secondary education while 27 (7%) had primary level education and 8 (2.1%) no education at all. Majority of participants, 203 (52.7%) were in the Para 1 to 4 bracket (Table 1).

All our study participants, 385 (100%) had heard of corona virus 19 (Table 3). From Table 2 and Figure 1, majority of our study participants, 344 (89.4%) had good knowledge of the epidemiology of corona 19 virus and its infection while the knowledge was fair in 37 (9.6) and poor in 4 (1%), 323 (89.9%) had good knowledge of the clinical features and the knowledge in 22 (5.7%) of them was poor. When the knowledge of prevention was analysed, majority, 302 (78.4%) had good knowledge, 80 (20.4%) fair and 3 (0.8%) was poor.

Despite the overall good knowledge of our participants of COVID-19 virus and its infection, some disturbing gaps existed in the knowledge of some segments of the participants in some vital aspects (Table 3). Though majority of 323 (84.2%) knew that Corona virus was caused by a virus 3 (1.3%) thought it was caused by witchcraft and though majority, 361 (93.8%) believe Corona virus 19 infection is real, 24 (6.2%) did not think so.

While 326 (84.7%) was right in thinking that Corona Virus 19 infection can infect anybody, 28 (7.3%) thought it was a disease of rich people, 12 (3.1%) said it was a disease of white people, 19 (14.9%) thought it was due to witchcraft and 121 (31.4%) thought that corona virus 19 infection was a death sentence (Table 3). While 182 (47.3%) knew that persons infected by the corona virus could look healthy and normal, 145 people (37.7%) did not know that while 58 (15.1%) of the participants were not sure. Also, Table 3 shows that 18 (4.7%) women did not think that the virus can infect pregnant women and 22 (5.7%) were not sure.

From Table 4, majority of the respondents 210 (54.5%) were afraid that they will not be responded to by hospitals if they had corona virus 19 infection. However, majority of 322 (83.6%) will present to the hospital for treatment if they have the infection. While 326 (84.7%) of the participants will not hide their COVID 19 status to avoid ridicule from others, 41 (10.6%) will. Majority, 321 (83.4%) thought that peoples' attitude will make an infected person feel bad and 205 (63.6%) thought that the community will reject and stigmatize infected patients and relatives (Table 4).

Also as can be seen from Table 4, majority of participants 207 (53.8) will be afraid to stay with COVID 19 patient who had been certified cured. Majority of the participants, 176 (45.7%) did not think they had enough information on COVID 19 virus infection while 318 (82.6%) thought they needed more information to understand COVID 19 virus infection better.

Table 1. Socio-demographic data of respondents.

Variable	Frequency	Percentage (%)
Age		
16 - 20	18	4.7
21 - 25	129	33.5
26 - 30	137	35.6
31 - 35	65	16.9
36 - 40	30	7.8
41 - 45	6	1.6
Mean (Std dev)	27.99 (5.338)	
Age range	18 - 44	
Occupation		
Business/Trading	146	37.9
Farmer	22	5.7
Civil Servant	101	26.2
Vocational	25	6.5
Applicant	28	7.3
House Wife	18	4.7
Student	45	11.7
Religion		
Traditional	3	0.8
Christian	380	98.7
Islam	0	0
Others	2	0.5
Address		
Urban	160	41.6
Rural	225	58.4
Marital Status		
Married	371	96.4
Single	13	3.4
Separated	0	0
Widow	1	0.3
Education		
None	8	2.1
Primary	27	7.0
Secondary	150	39.0
Tertiary	180	46.8
Post tertiary	20	5.2
Parity		
0	133	34.5
1 - 4	203	52.7
≥5	49	12.7

Table 2. Knowledge of different components of the corona virus 19 infection.

Type of knowledge	Good No (%)	Fair No (%)	Poor No (%)
Knowledge about awareness and epidemiology of corona virus 19 infection	334 (89.4)	37 (9.6)	1 (1)
Knowledge about clinical features of the infection	323 (83.9)	40 (10.4)	22 (5.7)
Knowledge about transmission of the virus	356 (92.5)	13 (3.4)	11 (4.2)
Knowledge about prevention of transmission	354 (91.9)	23 (5.9)	8 (2.1)
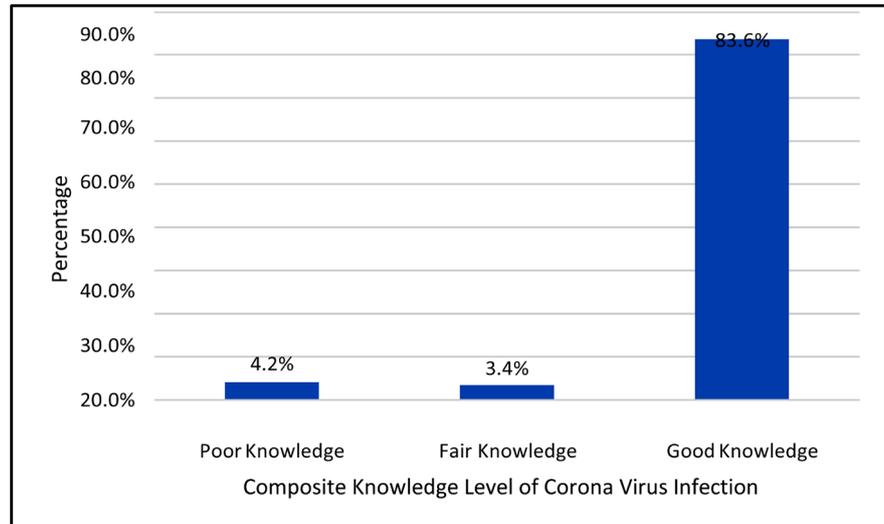
Figure 1. Composite knowledge level of corona virus among respondents.

Table 3. Awareness and knowledge of epidemiology of corona virus infection among respondents.

Variable	Frequency	Percentage (%)
Heard of corona virus before		
Yes	385	100
No	0	0
Origin of corona virus		
America	22	5.7
Italy	3	0.8
China	352	91.4
United Kingdom	8	2.1
Cause of corona virus		
Rat	28	7.3
Mosquitoes	6	1.6
A germ called bacteria	22	5.7
A germ called virus	324	84.2
Witchcraft	5	1.3

Continued

Believe that corona virus infection is real		
Yes	361	93.8
No	24	6.2
Group of people affected by corona virus infection		
Rich people	28	7.3
White people	12	3.1
Chinese	19	4.9
Anybody	326	84.7
Is corona virus infection a death sentence?		
Yes	121	31.4
No	217	56.4
Not Sure	47	12.2
Can corona virus affect pregnant women?		
Yes	345	89.6
No	18	4.7
Not Sure	22	5.7
Can an infected person look healthy and normal		
Yes	182	47.3
No	145	37.7
Not Sure	58	15.1

Table 4. Attitude of respondents towards corona virus infection.

Variable	Frequency	Percentage (%)
Afraid that hospitals will not attend to you		
Yes	134	34.8
No	210	54.5
Not Sure	41	10.6
Hide viral status to avoid ridicule from others		
Yes	41	10.6
No	326	84.7
Not Sure	18	4.7
Hide viral status to avoid losing job or business		
Yes	46	11.9
No	323	83.9
Not Sure	16	4.2
Present yourself to hospital for treatment		
Yes	322	83.6

Continued

No	43	11.2
Not Sure	20	5.2
Afraid to stay with a certified cured/discharged COVID 19 patient		
Yes	207	53.8
No	178	46.2
Not Sure	0	0
Think that people's attitude will make an infected person feel bad		
Yes	321	83.4
No	48	12.5
Not Sure	16	4.2
Think community will reject and stigmatize infected patients and relatives		
Yes	245	63.6
No	98	25.5
Not Sure	42	10.9
Think you have enough information on corona virus infection		
Yes	162	42.1
No	176	45.7
Not Sure	47	12.2
Think you need more information to understand better		
Yes	318	82.6
No	67	17.4
Not Sure	0	0

When it comes to practicing the protective measures that will help participants to prevent the corona virus 19 infection, it was found (Table 5) that though majority of them, 370 (96.1%) had face masks, only 188(48.8%) of them use the face mask every time they were outside their houses and of this number, only 93 (24.2%) wore their face masks properly to cover their mouths and noses. Others 292 (75.8%) put their face masks in their bags or wore them on their jaws. Only 138 (35.8%) of participants coughed into tissue papers or their bent elbows, 165 or 42.9% maintained a social distance of at least one meter and only 183 or 47.5% of participants washed their hands regularly with soap and water or used hand sanitizer. Many of participants 176 (45.7%) did not think they had enough information about the infection and majority, 318 (82.6%) thought they needed more information.

4. Discussion

Our study population had an age range of 18 to 44 years with a mean population age of 27+ or −5.4 years. One hundred and eighty or (46.82%) had tertiary and 150 (39%) secondary levels of education. These show generally that they were

Table 5. Preventive measures of corona virus infection among respondents.

Variable	Frequency	Percentage (%)
Have a face mask		
Yes	370	96.1
No	12	3.1
Not Sure	3	0.8
Frequency of facemask use outside the house		
At times	82	21.3
Often	115	29.9
All the time	188	48.8
Cover my mouth and nose with facemask whenever I'm outside the house		
At times	54	14.0
Occasionally	80	20.8
All the time	251	65.2
Put facemask in bag or below the jaw whenever I'm outside the house		
Rarely	64	16.6
Occasionally	145	37.7
Often times	83	21.6
Never	93	24.2

fairly well educated and knowledgeable. Knowledge about corona virus 19 in our study population was very high with 344 (89.4%) having good knowledge of the awareness and epidemiology of the infection, 323 (89.9%) of the clinical features and 356 (92.5%) of transmission of the infection. This good knowledge of the various aspects of the disease in our study could be attributable to the high level of education of our participants as majority of 180 (64.8%) had tertiary level of education followed by 150 (39%) with secondary education. Education had always been associated with better knowledge of diseases by the public including epidemics, pandemics, etc. [12].

These findings are in keeping with other studies which found education to be highly associated with good knowledge of COVID 19 pandemic [13] [14] [15]. This similarity could be due to the fact that their participants also had high level of education like ours. Estani *et al.* in their study in Iran also found that lower levels of education were associated with lower levels of knowledge about COVID 19 virus infection [10] [16]. Equally an important contribution to their good knowledge is the fact that correct and accurate information about the virus was passed to them directly during health talks by health workers during their antenatal clinics. Also important is the huge publicity mounted by both governmental and non-governmental organizations through the various media of communication about the virus.

Despite this overall good knowledge of different aspects of COVID 19 virus

infection in our antenatal population, disturbing gaps existed on some salient aspects of knowledge of the disease in small percentage of the study population. Though these people were not in the majority, there is need to design measures to properly educate this sub population on the correct facts regarding the infection. For instance, irrespective of the fact that majority of our study population knew the correct cause of COVID 19 infection as a virus, others, 24 (6.2%) did not think corona virus was real and 28 (7.3%) thought it was a disease of white people, 19 (4.9%) a disease of Chinese people and 121 (31.42%) thought that corona virus infection was a death sentence. These are disturbing misconceptions because these participants will not do enough to protect themselves and family from the harmful effects of the virus thus exposing a huge number of people to the highly contagious virus. Also as mothers, they will not be convinced about the true nature of virus and will pass on wrong and dangerous misconceptions to their family and friends.

These misconceptions though not in the majority, are significant enough for programmes to be designed and modified to educate this population more correctly and disabuse their minds from these misconceptions. This is very important because these are pregnant mothers who if they get this disease due to their lack of correct knowledge will jeopardize their babies and the health workers who will be attending to them. They should therefore be made to transmit correct information to their families. Moreover, the correct education and information to their families depend on these women who if they are not correctly informed cannot educate their children and other family members correctly. Also, these women will be taken to have the best knowledge about the virus being consistently taught about it in antenatal clinics by health workers. The wrong knowledge will definitely be worse in the general population.

Like in the study from Iran [15], high exposure of the Nigerian population to intense government and nongovernmental media information even before the outbreak of the virus in Nigeria and heightened since the index case in February 2020 in Lagos had been contributory to the high level of knowledge and the high knowledge base of our study participants The high level of knowledge in our study participants hoewever, contrasts with the study in Thailand in the early period of the pandemic where the majority of their residents had poor knowledge of the pandemic [11] [17]. This could be attributed to the fact that their work was carried out in the general population who generally may most likely have lower education level and also due to the fact that the study was carried out at a time that the COVID 19 virus infection had not been firmly established in their country. With regard to the attitude of our participants to the corona 19 virus infection, majority, 322 (83.6%) will present to the hospital if they have corona virus 19 infection. However, although majority of them will present to the hospital for treatment if they have the infection, majority of them 210 (54.5%) were afraid that they will not be responded to by hospitals if they had the infection. This is a fear that must be addressed by policy makers and health

workers in other not to worsen the adverse impact of the infection.

While 326 (84.7%) of the participants will not hide their COVID 19 status to avoid ridicule from others, 41 (10.6%) will. Majority, 321 (83.4%) think that peoples' attitude will make an infected person feel bad and 205 (63.6%) think that the community will reject and stigmatize infected patients and their relatives.

Majority of participants 207 (53.8) will be afraid to stay with COVID 19 patients who had been certified cured.

The attitude of majority of our participants not hiding their status and willing to present to the hospital if infected with the virus is good. However, the fear that health workers will not attend to them and other concerns raised by this study are genuine concerns. Programmes must be designed to beef up the knowledge and confidence of health workers about the disease and to train and retrain them to carry out their functions both in professionally protecting themselves and giving the best available treatment to their patients without discrimination.

Majority, 321 (83.4%) of our participants thought that peoples' attitude will stigmatize COVID 19 infected persons and make them feel bad and 245 (63.6%) thought that the community would. This is bad and should also be addressed. Stigma towards COVID 19 is due to the fear of its mortality and high communicability, thus can be resolved through proper education and transparency of healthcare policies [18].

When we investigated the implementation of those practices that would help them prevent the contraction of corona virus infections, it was found that their practices of these preventive measures were poor despite their good knowledge of those practices. For instance, though majority of them, 370 (96.1%) had face masks, only 188 (48.8%) of them used the face mask every time they were outside their houses. And of this number, only 93 (24.2%) wore their face masks properly to cover their mouths and noses. Others 292 (75.8%) put their face masks in their bags or wore them on their jaws. This practice of not putting on face masks properly all the time is not good and will enhance the transmission of the infection. This is in contradistinction to a Chinese study where almost all the participants were wearing face masks [13].

This is a questionnaire based cross-sectional study and has the weaknesses associated with this type of study. Also despite the fact that all efforts were made to encourage the participants to answer the questions as truthfully as possible, there was the possibility that a few could have given answers they thought would impress their caregivers.

From this study, it was found out that the antenatal women in Ebonyi State of Nigeria have very good knowledge of all the aspects of the corona virus 19 infection but despite this good knowledge disturbing gaps, wrong information and misinformation that will require correcting still exist. Also, their attitude exposes some concerns and fear of stigmatization by the society and rejection of infected people by the hospitals. Their practices of the preventive measures that will protect them against this infection were poor. They also thought that they

needed more information about the virus. Programs should be designed by policy makers and relevant agencies to address these gaps and fears in other to curtail the spread and mitigate the damages caused by this pandemic especially in Nigeria.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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