

Original Article

## A Cross-Sectional Study on Attitude towards Preventive Measures Against Covid-19 among Pregnant Women at Obafemi Awolowo University Teaching Hospitals Complex, Ile-Ife, Osun-State, Nigeria

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### Abstract

**Background:** Pregnant women experience changes in their immune status and physical body making them more vulnerable to virus related respiratory infections. This study assesses attitude towards preventive measures against COVID -19 among pregnant women at Obafemi Awolowo University Teaching Hospitals Complex, Ile-Ife, Osun State, Nigeria.

**Objectives:** To assess attitude towards preventive measures against COVID -19 among pregnant women.

**Methods:** A descriptive cross-sectional study was adopted for the study. Convenient sampling technique was used to select 431 pregnant women. Data was collected using standardized questionnaire on the research subject adopted from Erfani, Shahriarirad, Ranjbar, Mirahmadizadeh & Moghadami, (2020) and World Health Organization's survey tool and guidance on prevention of COVID-19 (WHO, 2020) and analyzed using SPSS version 24 software.

**Results:** Findings showed that 431 respondents participated in the study, the mean age  $\pm$  SD of the respondents was  $30.6 \pm 4.5$ . Almost all (97.2%) of them were married and majority (90.3%) were from monogamous family settings. It also revealed that 64.7% of the respondents had positive attitude towards preventive measures against COVID –

19 while 35.3% had negative attitude. Parity ( $P= 0.036$ ), religion ( $P = 0.017$ ), level of education ( $P= 0.002$ ), income ( $P= 0.012$ ) added statistically significantly to the prediction of attitude towards experience of psychological distress

**Conclusion:** The study concludes that majority of pregnant women had positive attitude towards preventive measures against COVID – 19.

**Keywords:** Pregnant Women, Attitude, COVID – 19, Preventive Measures.

## Introduction

Globally, Corona Virus Disease 2019 (COVID-19) has been recognized as a deadly respiratory viral disease that causes ailment ranging from the common cold to severe acute respiratory syndrome (SARS) and affects every person irrespective of race, religion, economic status or age [World Health Organization (WHO), 2020]. Corona virus infection outbreak started in Wuhan, China in December, 2019 and was eventually declared a global pandemic in March 2020 by the World Health Organization thus constituting a major public health challenge in both developed and developing countries with Nigeria inclusive (Di Gennaro, Pizzol, Marotta, Antunes, Racalbutto, et al., 2020). As of 16<sup>th</sup> March, 2021, over 200 nations have been affected with above 121 million persons infected and over 2.5 million deaths as result of this viral infection (WHO, 2021). These rates of infections and deaths fluctuates every day because of rapid spread capability of the virus (Khan, Mustagir, Rana, Haque, & Rahman, 2020)

It has been revealed that apart from its economic impact, COVID-19 has contributed significantly to the death of men, women, and children around the globe (WHO, 2020). As at 16<sup>th</sup> March, 2021, Nigeria has so far confirmed 160,895 cases of COVID-19 with 2,016 deaths (worldometers.info/about). The number is expected to increase with dire consequences if proactive action is not taken.

The World Health Organization (2010) reported that individuals with lowered immune status such as those with certain chronic health illnesses (including asthma or lung disease, heart disease, diabetes, kidney disease or some neurological conditions) and pregnant women have higher risk of contracting any viral infections. Throughout prenatal period, expectant mothers experience changes in their immune status and physical body

making them more vulnerable to virus related respiratory infections like influenza (Rasmussen, Smulian, Lednicky, Wen & Jamieson, 2020). Similarly, other studies have also documented that during pregnancy, a woman's immune system changes due to the effect of hormone of pregnancy so as to tolerate the growing fetus in-utero (Herberts, Melgert, Laan & Faas, 2010). COVID-19 have been recognized as a worldwide public health emergency and may cause overwhelming health problems in pregnancy (Omer, Ali, & Din Babar, 2020) and if adequate preventive measure are not maintained, pregnant women have high tendency of contracting this infection due to changes in their physiological and immunological function. (Mor & Cardenas, 2010).

Furthermore, studies have shown that SARS during pregnancy is associated with a high risk of spontaneous abortion, preterm delivery and intrauterine growth retardation (Khan et al, 2020). In addition, viral respiratory infections, such as influenza, can effortlessly progress during confinement due to the vulnerability of expectant mothers to COVID-19 (Sumaira, Salamat & Zaheer, 2020). Presently, there is no definite medication available to prevent or cure this disease, and preventive measures are the only methods to protect people against it. (WHO, 2020).

To curb the continuous transmission of the coronavirus disease and its related morbidity and mortality, the World Health Organization endorsed several preventive measures such as regular hand washing with water and soap or an alcohol-based hand rub where there is no immediate access to water and soap, the use of facemask, maintaining of physical social distancing, follow good respiratory hygiene by covering mouth and nose with bent elbow or tissue when ones coughs or sneezes and avoiding going to crowded places (WHO, 2020).

Similarly in Nigeria, several actions such as mass media campaigns to publicize information on these preventive measures to the society, early action consisting of case identification, tracing and containment measures, clear and transparent communication with the public and resource mobilization towards the management of confirmed cases have been embraced to curtail further transmission of the virus in the country through the Nigeria Centre for Disease and Infection Control (NCDC) and in collaboration with other governmental and non-governmental agencies,

Therefore, as the COVID-19 outbreak unfolds, it is of necessity to assess the knowledge, attitude and adherence to preventive measures against COVID-19 infection among pregnant women who constitute part of the susceptible group. Hence, the reason for this study

**Research Question** "What are the attitudes of pregnant women towards preventive measures against COVID-19?"

### Methodology

**Research Design** "The study adopted a cross sectional descriptive design.

**Population and Sampling:** The study was conducted among pregnant women who were receiving antenatal care in Obafemi Awolowo University Teaching Hospitals Complex (OAUTHC), Ile-Ife, Osun State. The institution is one of the first generation Teaching Hospitals established in 1967 by the Federal Government of Nigeria to provide qualitative health care. The hospital focuses on an integrated healthcare delivery system approach with emphasis on comprehensive healthcare service based on a pyramidal structure comprising primary care at the base, secondary and tertiary services at hospital settings. The primary healthcare is provided to the community in its three health centers: two urban and one rural in its catchments areas at Ife, Ilesa and Imesi-Ile respectively while the secondary and tertiary level cares are provided at its two major hospital facilities, in Ife Hospital Unit (I.H.U) and Wesley Guild Hospital Unit Ilesa.

The inclusion criteria were all consenting eligible pregnant women receiving antenatal care during the period of the study. Quantitative data were

collected from the population using standardized questionnaire on the research subject. Adopting a convenient sampling technique, 431 respondents were selected.

Sample size estimation for the quantitative study was determined using Cochran formula:

$$n = Z^2pq / d^2$$

Where n = desired sample size,

Z= standard normal deviate at 95% confidence level (at 95% confidence level, Z=1.96),

p = 50%, (there are no known data on the proportion of pregnant women with COVID-19 as the time of this study).

q = 1 – p, q = 1 – 0.5 = 0.5,

d = degree of accuracy taken as 0.05

$$n = \frac{(1.96)^2 \times 0.5 \times 0.5}{(0.05)^2} = \frac{3.8416 \times 0.5 \times 0.5}{0.0025} = 384.16$$

With 10% non-response, estimated sample = 422.56.

Same estimated to 430.

**Instrument to Collect Data:** Data was collected using standardized questionnaire on the research subject adopted from Erfani A, Shahriarirad R, Ranjbar K, Mirahmadizadeh A & Moghadami, (2020) and World Health Organization's survey tool and guidance on prevention of COVID-19 (WHO, 2020). Questions related to the study objectives were asked. The questionnaire had two sections:

**Section A:** Contained the socio-demographic characteristics of the respondents.

**Section B:** Explored pregnant women's attitude towards preventive measures against COVID-19

Ten question items were rated on 5-point likert scale, from "indifferent = 0, strongly disagree = 1, disagree = 2, agree = 3 and strongly agree = 4". The possible scores range from 0 to 40. Scores above the mean score were said to be positive attitude while scores below were categorized as negative attitude.

**Method of Data Analysis:** Data collected from the study were analyzed using descriptive and inferential statistics with the aid of Statistical Product & Service Solution (SPSS), version 24. Descriptive statistics like frequency table, percentages, mean and standard deviation were used to summarize and provide clear description of the data from the sample, while multiple logistic

regression was used for inferential statistics at  $p < 0.05$ .

**Ethical Consideration:** Ethical clearance was obtained from the Ethics and Research Committee (Number: ERC/2020/10/01) Ethics and Research Committee of Obafemi Awolowo University Teaching Hospitals Complex, Ile-Ife. Nigeria. Verbal informed consent and written consent were also obtained from eligible pregnant women prior to data collection.

## Results

The demographic characteristics of the respondents as shown in Table I reveals that the mean age  $\pm$  SD of the respondents were  $30.6 \pm 4.5$ . Almost all (97.2%) of them were married and majority (90.3%) were from monogamous family settings. Larger percentage (55%) had one-two children and many of them (85.2%) were of Yoruba ethnicity. While Christians dominates with 81.4%, only 18.6% were of Islamic religion. Majority (87.7%) had tertiary education. More than half (53.4%) were self-employed, 20.9% were government employed and 16.2% were employed in a private sector. Average income for more than two-third of the respondents was less than N50,000.

Table II represents the attitude of respondents towards preventive measures against COVID-19. Majority (>80%) agreed that: COVID-19 is contagious and a serious disease; early detection can improve treatment and outcome; health education can help prevent COVID-19, social and

physical distancing go a long way in preventing the spread, and authorities should quarantine returnees from another country for a period of two weeks. Other are as shown in the table above.

Table III presents the summary of attitude of pregnant women towards preventive measures against COVID-19. Ten (10) question Items in table II were rated on 5-point likert scale, from "indifferent = 0, strongly disagree = 1, disagree = 2, agree = 3 and strongly agree = 4". The possible scores range from 0 to 40. Mean  $\pm$  SD score was calculated to be  $30.4 \pm 7.7$ . Scores above the mean score were said to be positive attitude while scores below were categorized as negative attitude. Summarily, 64.7% of the respondents had positive attitude, while 35.3% had negative attitude.

A multiple logistic regression was run to predict the attitude towards preventive measures against COVID-19 from the demographic characteristics of the respondents (age group, marital status, family type, parity, and religion, level of education, employment status and income) as presented in table IV. Of all the variables, Parity ( $P = 0.036$ ), religion ( $P = 0.017$ ), level of education ( $P = 0.002$ ) and income ( $P = 0.012$ ) added statistically significantly to the prediction of attitude towards experience of psychological distress, other variables, age group ( $P = 0.217$ ), marital status ( $P = 0.424$ ), family type ( $P = 0.082$ ) and employment status ( $P = 0.196$ ) did not.

**Table I: Demographic and Socioeconomic Characteristics of Pregnant Women (N = 431)**

Variables	Frequency (n)	Percent (%)
Age group in years:  <i>Mean age = 30.6 <math>\pm</math> 4.5</i> <i>Range = 22years</i>	Below 21	3 .7
	21-25	46 10.7
	26-30	191 44.3
	31-35	123 28.5
	36-40	65 15.1
	above 40	3 .7

	Total	431	100.0
Marital status	Married	419	97.2
	Single	12	2.8
If married, indicate your family type	Single	12	2.8
	Monogamous	389	90.3
	Polygamous	30	7.0
If polygamous, how many wives are with your husband?	Not applicable	401	93.0
	Two	22	5.1
	Three	6	1.4
	More than 4 wives	2	.5
Number of children ever born	None	138	32.0
	One – Two	237	55.0
	Three- Four	53	12.3
	More than four	3	.7
Ethnicity	Yoruba	367	85.2
	Hausa	8	1.9
	Igbo	29	6.7
	Others (Ebira, Edo)	27	6.3
Religion	Christianity	351	81.4
	Islam	80	18.6
Highest level of education	No formal education	3	.7
	Primary	5	1.2
	Secondary	45	10.4
	Tertiary	378	87.7
Employment status	Not employed	41	9.5
	Self employed	230	53.4
	Government employed	90	20.9

	Employed in a private sector	70	16.2
	No Income	14	3.2
	< 50,000	290	67.3
Average Income	50,000-100,000	105	24.4
	>100,000 - 150,000	7	1.6
	>150,000	15	3.5
	Total	431	100.0

**Table II: Attitude of pregnant women towards Preventive Measures against COVID-19**

Items	Indiff. 0	SD 1	D 2	A 3	SA 4
COVID-19 is highly contagious and a serious disease	5 (1.2%)	48 (11.1%)	4 (0.9%)	100 (23.2%)	274 (63.6%)
Early detection of COVID-19 can improve treatment and outcome	-	39 (9.0%)	10 (2.3%)	174 (40.4%)	208 (48.3%)
Health education can help prevent COVID-19	15 (3.5%)	35 (8.1%)	15 (3.5%)	193 (44.8%)	173 (40.1%)
Social and physical distancing, frequent hand washing with soap and water and use alcohol based hand sanitizer go a long way in preventing the spread of COVID -19	5 (1.2%)	51 (11.8%)	6 (1.4%)	157 (36.4%)	212 (49.2%)
Stigmatizing people who contact covid-19 should be discouraged	18 (4.2%)	62 (14.4%)	77 (17.9%)	127 (29.5%)	147 (34.1%)
Authorities should restrict travel to and from COVID-19 disease areas to prevent contamination	9 (2.1%)	54 (12.5%)	38 (8.8%)	147 (34.1%)	183 (42.5%)
Authorities should quarantine returnees from another country for a period of two weeks	9 (2.1%)	40 (9.3%)	17 (3.9%)	125 (29.0%)	240 (55.7%)
In the event of an increase in the number of cases of COVID-19, authorities should be ready to close educational centers (kindergartens, schools, and universities)	18 (4.2%)	59 (13.7%)	35 (8.1%)	159 (36.9%)	160 (37.1%)

In my opinion that authorities should be prepared to restrict access to religious sites, shrines and mosques if the number of COVID cases increases	25 (5.8%)	66 (15.3%)	49 (11.4%)	174 (40.4%)	117 (27.1%)
In my opinion that if the number of COVID-19 cases increases, authorities should be ready to lock down and quarantine the city	18 (4.2%)	59 (13.7%)	40 (9.3%)	175 (40.6%)	139 (32.3%)

**Table III: Summary of Attitude towards Preventive Measures against COVID-19**

	Cut-off	Frequency	Percent
<i>Negative</i>	< 30	152	35.3
<i>Positive</i>	30 & above	279	64.7
<i>Total</i>		431	100.0

**Table IV: Multiple Logistic Regression Predicting Attitude towards Preventive Measures against COVID-19 Based on Demographic Characteristics**

Model	Unstandardized		Standardized	T	Sig.
	Coefficients		Coefficients		
	B	Std. Error	Beta		
(Constant)	25.771	5.727		4.500	.000
Age group	-.583	.471	-.070	-1.238	.217
Marital status	-2.154	2.691	-.046	-.801	.424
Family type	-2.524	1.446	-.101	-1.745	.082
Parity	-.792	.376	-.118	-2.107	.036

Religion	2.281	.953	.115	2.393	.017
Level of education	2.883	.916	.164	3.147	.002
Employment status	-.584	.451	-.066	-1.295	.196
Income	1.315	.522	.125	2.521	.012

A. Dependent Variable: Attitude sum  $F(8, 422) = 5.188, Sig. = .000^b$

### Discussion

Result showed that the mean age  $\pm$  SD of the respondents were  $30.6 \pm 4.5$ , this showed that majority of the pregnant women were in their mid-reproductive ages. Almost all of them were married. Distribution of the respondents by family setting shows that nearly all of them belonged to monogamous family settings and were Yoruba, this was probably because the study was conducted in Southwestern Nigeria, being a Yoruba dominated area. A little above average of the respondents had one to two children. More than half were self-employed and average income for more than two-third of the respondents was less than N50,000.

Majority had one or more forms of tertiary education. This showed there were more educated people in the study area. The study also revealed that parity, religion, level of education and income added statistically significantly to the prediction of attitude towards experience of preventive measures towards COVID-19 among pregnant women. These support findings from a cross sectional survey on attitudes and precaution practices towards COVID -19 prevention in Singapore where factors like religion and education background were found to influence women's attitude (Ryan, See, Liying, Jerry & Lay, 2020). This may be due to the fact that educated women may be able to have more access to information and can better understand the possible complications and consequences of COVID-19 in pregnancy. Hence, they are more likely to take precautionary measures based on information.

Findings from this study revealed two third of the respondents agreed that: COVID-19 is contagious and a serious disease; This is in agreement with

Omer, Ali, & Din Babar, (2020) where COVID-19 was recognized as a worldwide public health emergency that may cause overwhelming health problems in pregnancy.

Over two third of the respondents also agreed that health education can help to prevent COVID-19 and that early detection can improve treatment and outcome. Majority also accepted that social and physical distancing, frequent hand-washing with soap and water and use alcohol based hand sanitizers go a long way in preventing the spread. This is in agreement with the findings of the study in Singapore which revealed that Malay pregnant women are likely to practice safe distancing and sanitize their hands as a means of preventing the virus. (Ryan et al, 2020)

The study also revealed that majority of pregnant women supported that authorities should restrict travel to and from COVID-19 disease areas to prevent contamination and should quarantine returnees from another country for a period of two weeks. This is in support of National Health Commission of the People's Republic of China, (2020) that women who have a travel history or COVID-19 symptoms should be kept in isolation for at least 14 days.

Summarily, almost two third 64.7% of the respondents had positive attitude towards COVID-19 preventive measures. All these are in agreement with findings of Anikwe, Ogah, Anikwe, Okoro-chukwu & Ikeoha (2020) which showed that majority of pregnant women in their third trimester in Nigeria demonstrated good attitude and preventative practices of COVID-19 by practicing hand washing, wearing masks, avoiding face touching and quarantine infected people as good practices towards the prevention of COVID-19

infection. The World Health Organization endorsed several preventive measures such as regular hand washing with water and soap or an alcohol-based hand rub where there is no immediate access to water and soap, the use of facemask, maintaining of physical social distancing, follow good respiratory hygiene by covering mouth and nose with bent elbow or tissue when ones coughs or sneezes and avoiding going to crowded places (WHO, 2020).

**Conclusion:** COVID-19 has been recognized as a worldwide public health emergency and may cause overwhelming health problems in pregnancy (Omer, et al., 2020). This is because expectant mothers experience changes in their immune status and physical body making them more vulnerable to virus related respiratory infections like influenza (Rasmussen et al., 2020). There is no definite medication available to prevent or cure this disease, and preventive measures are the only methods to protect people against it. Findings from this study revealed that majority of pregnant women have good attitude towards preventive measures of COVID-19.

#### Implications:

- The issue of the novel virus COVID-19 is pandemic and predisposed pregnant women to risks, hence, should be included in nursing practice.
- The findings of this study could be a useful tool by health workers in enriching existing knowledge of pregnant women about COVID-19.
- It could be a good tool by policy makers in formulating and implementing strategies towards prevention of COVID-19 and its consequences among pregnant women.

**Recommendations:** Future research can be done to cover more than one state since this study was done in a state. Implementation of policies that promotes prevention of COVID-19 by the health care personnel, hospitals management and the government.

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**Where the work was carried out: Obafemi Awolowo University Teaching Hospitals Complex, Ile-Ife. P.M. B. 5538, Ile-Ife, Nigeria**

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