

## Pregnant Women's Perception of Corona Virus Pandemic, and the Precautionary Measures they adopt toward Curtailing the Pandemic in South-South Nigeria



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**ABSTRACT:** The decreased immunologic competency during pregnancy calls for intensified precautionary measures against corona virus disease among pregnant women. This Cross-Sectional study focused on pregnant women's perception of corona-virus pandemic and the precautionary measures they adopt toward curtailing the pandemic. The objectives of the study were to determine pregnant women's view/beliefs about Covid-19 pandemic, the extent of their compliance with wearing of face masks and maintenance of social distancing. Multistage sampling technique was used to select 144 pregnant women from the primary, secondary and tertiary health facilities in Edo State out of the six States that constitute South-South Nigeria. The instrument used for data collection was a self-developed Questionnaire on pregnant women's Perception and the precautionary measures they adopt for corona-virus pandemic (QPWPPMCP). The reliability of the instrument was conducted using internal consistency test for reliability, and the Cronbach alpha yielded coefficient of 0.711. Data collected were analysed using frequencies, percentages, mean and Spearman Rank Order correlation. Majority of the respondents indicated that Covid-19 is real (87.5%) and is existing (86.1%). 63.9% indicated that Covid-19 is caused by germ, 68.1% indicated that they always wore face masks, and 73.6% maintained physical/social distancing. There was significant relationships between pregnant women's view about existence of Covid-19 and their compliance with wearing of face masks ( $\rho = 0.334$ ;  $p\text{-value} = < 0.001$ ), as well as between belief about cause of Covid-19 and wearing of face masks ( $\rho = 0.173$ ;  $p\text{-value} = 0.038$ ).

**KEYWORDS:** Pregnant women, Perception, Precautionary Measures, Corona-virus Pandemic, Face mask, Social distancing.

### INTRODUCTION

Immunologic competency decreases during pregnancy (Gennaro and Fehder, 1996). Also the immunological changes that take place during pregnancy subject the expectant mother to the risk of infections (Pillitteri, 1999). Presence of any pandemic will further compromise this risk of infection among pregnant women. Coronavirus disease (COVID-19) has played havoc worldwide (Omer, Ali & Babar, 2020). As at 11<sup>th</sup> June 2020, active cases were 3,270,599 out of 7,495,828 infected people globally (Covidvisualizer.com).

Pregnant women are at greater risk of getting sick from other respiratory viruses than people who are not pregnant, and sometimes this causes adverse outcome for the mother (Center for Disease Control and Prevention (CDC), 2019). Omer et al (2020) indicated that pregnant women have a high propensity to acquire COVID-19 due to their altered physiological and immunological functions. COVID-19 causes extensive alveola damage, which in turn, increases the risk of secondary bacterial infections (Liang and Acharya, 2020). Studies have indicated that severe acute respiratory syndrome (SARS) during pregnancy is linked with high risk of spontaneous miscarriage, preterm birth and intra-uterine growth restriction (Wong, Chow, Leung et al, 2020). Also, studies in pregnant women with COVID-19 have indicated maternal and neonatal complications (Zhu, Wang, Fang et al, 2020). WHO(2020) have indicated that COVID-19 is spread by person-to-person contact, and that the route of transmission is primarily via respiratory droplets from infected person into the air which are then deposited onto nearby surfaces. Also the virus could potentially transfer to individuals within a distance of <2m (6feet) of the infected person (Medline Plus, 2020). It is important to note that vaccine is now available to add to protection against the virus that causes COVID-19. It is against this background that the researchers

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conducted this study to determine pregnant women's perception of corona-virus pandemic, and the precautionary measures they adopt toward curtailing the pandemic in South-South Nigeria.

## **Research Questions**

1. What is the view of pregnant Women in South-South Nigeria about the existence of Corona-Virus Pandemic?
2. What is the belief of pregnant women in South-South Nigeria about the cause of Covid-19 disease?
3. To what extent do pregnant women in South-South Nigeria comply with wearing of face masks as protective measure against contacting Covid 19 infection?
4. How do pregnant women in South-South Nigeria maintain physical distancing as protective measure against contacting COVID-19?

## **Hypotheses**

1. View of pregnant women in South-South Nigeria about existence of Covid-19 pandemic is not significantly related to their compliance with wearing of face masks as protective measure.
2. Belief of Pregnant Women in South-South Nigeria about the cause of COVID-19 is not significantly related to their compliance with wearing of face masks as protective measure.

## **MATERIALS AND METHODS**

### **Design and Sampling.**

The study was a cross-sectional research design. Multistage sampling technique was used for the study. Out of the six States (Akwa-Ibom, Bayelsa, Cross-River, Delta, Edo, Rivers) that constitute South-South Nigeria, simple random sampling technique was used to select Edo State for the study. Simple random sampling technique was used to select one tertiary, one secondary and one primary health facility in Edo State. 50 pregnant women were selected from each of the primary and secondary health facilities while 44 pregnant women were selected from the tertiary health facility giving a sample size of 144 respondents that were used for the study.

### **Instrument**

The instrument used for data collection was Questionnaire on Pregnant Women's Perception and the Precautionary Measures they Adopt for Corona-Virus Pandemic (QPWPPMCP). The questionnaire consisted of three (3) sections. Section A consisted of items on demographic characteristics (age, educational level, employment status, health facility and parity). Section B consisted of items used to elicit information on pregnant women's perception of COVID-19 Pandemic (eg view and belief about existence of COVID-19, interaction with people with Covid-19, opinion about the outcome of the victim of Covid-19 disease and awareness of mode of transmission of Covid-19 disease). Section C of the instrument was made up of items used to elicit information from the respondents on the precautionary measures adopted by pregnant mothers for Covid-19 disease (eg compliance with wearing of face mask, maintenance of physical distancing, hygienic measures practiced in Covid-19 pandemic, etc).

Sections B and C of the instrument required "Yes" or "No" responses for the items. Response to either Yes or No option for each item = 1 point.

The questionnaire was subjected to reliability test using split-half method to measure the reliability and internal consistency from 20 pregnant women who were selected from a health facility in Edo state which was not used for the study. The Cronbach alpha yielded coefficient of 0.711.

### **Method of Data Collection.**

Ethical approval was obtained for the study, and informed consent was obtained from the expectant mothers. Pregnant women who indicated not to participate were not used for the study. The researchers requested assistance of the midwife care providers in the health facilities during data collection. The pregnant women were approached at the time of their visits to the antenatal clinics. Interview method was adopted during the data collection; privacy and physical distancing were maintained during the period of data collection. Confidentiality was ensured by not including the names of the health facilities and the respondents in the data collection. 144 copies of the questionnaire were administered to the respondents.

### **Method of Data Analysis**

Standard descriptive statistics was used to summarize the variables. Percentages were used to answer the research questions while Spearman Rank Order correlation test was adopted in testing the null hypotheses at <0.05 level of significance. Statistical Package for Social Sciences (SPSS) software version 20 was used in the data analysis.

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## RESULTS

**Table 1. Socio-demographic profiles of the respondents n =144**

Variable	Class	Frequency	Percentage(%)	
Educational Level	Tertiary	109	75.69	
	Secondary	27	18.75	
	Primary	4	2.78	
	No formal education	4	2.78	
Employment Status	Employed	79	54.9	
	Unemployed	65	45.1	
Health Facility	Primary	50	34.7	
	Secondary	50	34.7	
	Tertiary	44	30.6	
Parity	Primigravida	85	59.0	
	Multigravida	59	41.0	
Age	1 (Below 20 years)	1	0.69	Mean age=27.79±5.31 years Range = 17.0-48.0 years
	2 (20-29 years)	99	68.75	
	3 (30-39 years)	37	25.7	
	4 (40-48 years)	7	4.86	

Table 1 shows that 109 (75.69%) of the respondents had tertiary education, 27 (18.75%) had secondary education, 4(2.78%) had primary education, while 4 (2.78%) had no formal education. 79(54.9%) were employed while 65 (45.1%) were unemployed. For the Health facilities, primary and secondary levels constituted 50 (34.7%) each while tertiary level constituted 44 (30.6%). Among the respondents, 85 (59.0%) were primigravidae while 59 (41%) were multigravidae. 99(68.75%) were between 20-29years, 37 (25.7%) between 30-39 years, 7(4.86%) were between 40-48years while 1 (0.69%) was below 20 years. Mean age of the respondents was 27.79±5.31 with a range of 17.0 – 48.0 years

**Table 2: Pregnant Women's Views, Beliefs, Wearing of face masks and Social/Physical Distancing for Covid-19 Pandemic.**

Domain	Items	Responses (F/%)		Mean % Scores of the Domains
		Yes	No	
View	Covid-19 is real	126 (87.5)	18(12.5%)	86.80
	Covid-19 is existing	124(86.1%)	20(13.9%)	
Belief about Cause of Covid-19	Covid-19 is indication of abomination	16(11.1%)	128(88.9%)	75.53
	Covid-19 is caused by germ	92(63.9%)	52(36.1%)	
	Covid-19 is a curse/punishment from God	20(13.9%)	124(86.1%)	
	Covid-19 is a sign of end-time	53(36.8%)	91(63.2%)	
Compliance with wearing of face mask	I do not wear face mask	32(22.2%)	112(77.8%)	62.92
	I wear face mask always when out of home	98(68.1%)	46(31.9%)	
	I wear face masks sometimes when outside	110(76.4%)	34(23.6%)	
	It is not relevant to wear face mask	46(31.9%)	98(68.1%)	
	Wearing face mask makes me uncomfortable	109(75.7)	35(24.3%)	

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Maintaining physical/social distancing	I keep at least three steps away from people.	106(73.6%)	38(26.4%)	70.37
	I stay very close to people I come across	39(27.1%)	105(72.9%)	
	I minimize face-to-face discussion with people	102(70.8%)	42(29.2%)	
	I mostly use phoning/text message/email to discuss	100(69.4%)	44(30.6%)	
	I avoid crowded places	125(86.8%)	19(13.2%)	
	I suspend attendance to meetings	70(48.6%)	74(51.4%)	

**KEY: Domain mean score of 50% and above = Positive score**

### View of Pregnant Women in South-South Nigeria about existence of corona virus Pandemic:-

Table 2 shows that majority of the respondents were of the view that Covid-19 is real (87.5%) and is existing (86.1%). Few of the respondents indicated that Covid-19 is not real (12.5%) and is not existing (13.5%). The mean domain score for view was 86.80%

### Belief of pregnant women in South-South Nigeria about the cause of Covid-19.

In table 2, 92 (63.9%) of the respondents indicated that Covid-19 is caused by germ, 128 (88.9%) indicated that it is not an abomination, 124(86.1%) had the belief that Covid-19 is neither a curse nor punishment from God, and 91(63.2%) indicated that it is not a sign of end-time. The mean domain score for belief was 75.53%.

### Compliance with wearing of face mask by pregnant women in South-South Nigeria:-

Table 2 shows that 98 (68.1%) of the respondents always wore face masks when out of home, 110 (76.4%) wore face mask sometimes outside their homes, 46 (31.9%) indicated that it is not relevant to wear face mask while 109 (75.7%) stated that wearing face mask made them uncomfortable. The mean domain score for wearing of face mask was 62.92%

### Maintenance of physical/social distancing

Table 2 shows that 106 (73.6%) of the respondents kept at least three steps away from people, 105 (72.9%) did not stay very close to people they came across, 102 (70.8%) minimized face-to-face discussion with people, 100 (69.4%) mostly used phoning/text message/email for discussion with people and 125 (86.8%) avoided crowded places. The mean domain score for physical/social distancing was 70.37%.

## HYPOTHESES TESTING

**Table 3. Spearman Rank Order correlation showing the relationships between Views/Beliefs about COVID-19 and wearing of face mask.**

Variable	Mean(%)	Rho	P-Value
View about Covid-19	86.80	0.334	<0.001*
Wearing of face mask	62.92		
Belief about cause of Covid-19	75.53	0.173	0.038*
Wearing of face mask	62.92		

\* Significant at  $p < 0.05$

**Hypothesis 1:** View of pregnant women in south-south Nigeria about existence of Covid-19 pandemic is not significantly related to their compliance with wearing of face masks as protective measure.

Table 3 shows that:

alpha-level =  $< 0.05$

rho = 0.334

p-value =  $< 0.001$

The null hypothesis was rejected. Pregnant women's view about existence of COVID-19 in South-South Nigeria was significantly related to their compliance with wearing of face masks.

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**Hypothesis 2:** Belief of pregnant women in South-South Nigeria about the cause of COVID-19 is not significantly related to their compliance with wearing of face masks.

Table 3. Shows that at alpha level of  $<0.05$ ,  $\rho = 0.173$ ,  $p\text{-value} = 0.038$ . Significant relationship existed between pregnant women's belief about the cause of COVID-19 and their compliance with wearing of face masks. Therefore the null hypothesis was rejected.

### **DISCUSSION**

#### **Views and belief of pregnant women about existence and cause of COVID-19.**

Findings from the study showed that majority of the respondents indicated that COVID-19 is real (87.5%), is existing (86.1%) and is caused by germ (63.9%) (table 2). Studies have shown that corona-viruses are pathogens that can live in both animals and humans (Babymed, 2020; Omer et al, 2020). Some of the respondents' negative views and beliefs about the existence and cause of Covid-19 disease (table 2) could be due to their health belief system.

#### **Compliance with wearing of face masks and maintenance of social distancing**

Findings from the study showed that 68.1% and 73.6% of the respondents respectively always wore face masks when out of home and maintained physical/social distancing (table 2). Nwafor et al (2020) noted poor practice of preventive measures against Covid-19 among pregnant women attending prenatal clinic in Ebonyi State Nigeria. Researchers have observed that Covid-19 virus could potentially transfer to individuals within a distance of  $<2$  metre (6 feet) of the infected person (Omer, Ali and Babar, 2020; Medline Plus, 2020).

#### **Relationships between Pregnant Women's Views/Beliefs and their compliance with Wearing of face masks**

Findings from the study revealed significant relationships between pregnant women views about existence of COVID-19 as well as their belief about the cause of the disease and wearing of face masks (table 3). Warnock-Parkes et al (2021), in their study in United Kingdom, observed that positive social cognitions were associated with increase in the number of people wearing face masks. Warnock-Parkes et al (2021) noted that as non-mask wearers see more people around them wear face masks, they became convinced about the reality and existence of Covid-19, and so develop positive social cognition (eg "I will look confident and competent wearing mask"), and thereby join others in wearing face masks, whereas those with negative social cognition (thoughts like "I will look foolish") were associated with less wearing of face masks. Warnock-Parkes et al (2021) also noted in their study that the strongest predictor of mask wearing by the populace was the belief that face mask helps to protect others from COVID-19.

### **CONCLUSIONS AND RECOMMENDATIONS**

This study indicate positive views and beliefs about existence of COVID-19 among pregnant women in South-South Nigeria. The study also showed that majority of the pregnant women complied with wearing of face masks and maintenance of physical/social distancing; there was significant relationships between the views and beliefs pregnant women expressed and their compliance with wearing of face masks.

There is need to continue the campaign on the existence of corona virus disease by healthcare professionals in Maternal and Child Health Centres. Government and NGOs should supply face masks free-of-charge to pregnant women in antenatal clinics and in their communities to encourage more compliance with wearing of face masks especially among those that cannot afford the cost.

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