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**SOCIO-DEMOGRAPHIC DETERMINANTS OF COMPLIANCE WITH COVID-19 PROTOCOL AMONG WOMEN ATTENDING ANTENATAL CLINICS IN OBIO/AKPOR LOCAL GOVERNMENT AREA OF RIVERS STATE**

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**Abstract**

This study was to find out whether women visiting prenatal clinics in the Obio/Akpor Local Government Area of Rivers State complied with the COVID-19 protocol. The study has four research objectives and four research questions to address. The study was conducted using a descriptive survey approach. Women attending antenatal clinics in the Obio/Akpor Local Government Area made up the study's population. The sample of 400 women visiting antenatal clinics was chosen using a multi-stage sampling procedure. A semi-structured questionnaire was used to gather data, which was then analysed using basic frequencies, percentages, and chi-square at the 0.05 level of significance. The results revealed that 301(75.3%) had strong COVID-19 protocol compliance, while 99(24.8%) had low COVID-19 protocol compliance. The findings revealed a statistically significant relationship between age and COVID-19 protocol compliance among women attending prenatal clinics in Rivers State's Obio/Akpor Local Government Area. In addition, the results revealed a non-significant relationship between the degree of education, employment, socioeconomic position, marital status, and compliance with COVID-19 procedures among women attending the antenatal clinics in Rivers State. The bulk of the responders was found to be in good compliance with the COVID-19 protocol. Hence, there is a need to put in policies that may ensure continuity. The study recommended amongst others that the government should through its relevant agencies conduct more enlightenment campaigns through public talk to create more awareness on the need for adequate compliance with COVID-19 protocols in the general populace.

**Keywords:** Compliance, COVID-19, Women, Antenatal, Clinic.

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**Introduction**

The pandemic COVID-19 has contributed to a high percentage of mortality and morbidity among the population. Most pregnant women are agitated by the upsurge of covid-19. A novel coronavirus 2 causes Covid-19, a new respiratory illness that initially appeared in China's Wuhan area (SARS-CoV 2). It causes a severe acute respiratory syndrome, which has quickly spread to over 110 nations worldwide, including Nigeria, causing the World Health Organization (WHO) to designate it as a pandemic on March 11th, 2020 (Rasmussen et al., 2020). This disease, which is a global concern, has had a large economic impact and has contributed to a rise in mortality among men, women, and even children all over the world (Poon et al., 2020). COVID-19 is linked to morbidity and death, and there is presently no cure. Wearing a face mask, handwashing/hand sanitising, social distance, lockdowns, isolation/quarantine, and contact tracking are among the methods used by the international community to prevent and contain the pandemic.

Concerns regarding the COVID-19 pandemic's influence on pregnancy and child health have arisen. While some studies have found no difference in COVID-19 risk between pregnant women and the general population, others have found that there is. Others, such as Nwafor et al (2020), have discovered that pregnancy increases the chance of developing COVID-19 (Allotey, et al., 2020). COVID-19 risk rises during pregnancy owing to the compromised immune system that comes with it (Ejeh et al., 2020). Preventive health-related behaviours are also carried out to improve or enhance health. The goal of primary prevention is to keep the illness from spreading (the number of new cases occurring within a given time frame). Because of the physiologic and immunologic changes that occur during pregnancy, pregnant women are thought to be more prone to developing severe cases or death from COVID-19 infection than the general public. Additionally, the presence of comorbidities, a high

BMI, and a greater maternal age are all considered risk factors for a more severe infection in pregnant women (Hoque et al, 2021).

Almost all nations have adopted public health and social measures in response to the epidemic. COVID-19 transmission is being slowed by these efforts. Flattening the pandemic curve refers to reducing the number of active cases at a particular period by slowing the spread of a pandemic. This gives the healthcare system (doctors, nurses, and hospitals) enough time to plan and respond without being overburdened. As a result, compliance with public health and social imitative measures is critical to flattening the pandemic curve. Patients infected with Covid-19 can have no symptoms or symptoms that range from a typical cold to severe acute respiratory failure (Anikwe & Ogah, 2020). A pregnant mother's pregnancy is a special period, full of joy and expectation. Pregnant women should be informed of a variety of pregnancy events, including how the baby will develop and grow in the mother's womb (Sayehahmed & Abdalla, 2020). Pregnant women are often inquisitive about their estimated due date, nutrition and exercise advice, and information on the safety of their unborn child (Ayinde et al., 2020). For the health of a pregnant woman and the appropriate growth of the foetus, proper pregnancy-related care is essential. Pregnancy is also an excellent time to encourage healthy habits and parenting abilities. Though pregnancy is not a disorder in and of itself, some undesirable changes can occur due to a changed physiological state during pregnancy, such as nausea, vomiting, edoema, varicose veins, heartburn, constipation, backache, tiredness, loss of sleep, hypertension, diabetes, and abnormal bleeding (Anozie et al., 2021). There is currently insufficient data to determine if pregnant women are at a higher risk of COVID-19-related sickness, however, they are at a higher risk of non-COVID-19-related respiratory illnesses (Egbi et al., 2020).

Furthermore, investigations on the impact of COVID-19 positive on maternal and foetal health during pregnancy are needed. However, preliminary findings showed that pregnant women with COVID-19 may give birth prematurely (Okello et al., 2021). Because of the physiologic and immunologic changes that occur during pregnancy, pregnant women are thought to be more prone to developing severe cases of death from COVID-19 infection than the general public. Fever, cough, trouble breathing, and other flu-like symptoms such as runny and stuffy nose, sneezing, and sore throat are all indicators of the sickness. In most situations, the disease manifests itself in a mild to the moderate manner, but in some sensitive persons, such as the elderly and pregnant women with underlying medical issues, it can result in serious complications and/or death. The Covid-19 virus is transmitted from person to person by respiratory droplets (particularly when coughing). Another mode of infection includes direct contact with an infected individual or indirect contact (touching a surface or object contaminated with respiratory secretions and then touching one's mouth, nose, or eyes). COVID-19-positive pregnant women were also more likely to deliver birth preterm. One in every four kids delivered to mothers with COVID-19 was admitted to a neonatal facility, although there is no information on the causes of preterm deliveries or the grounds for admission to neonatal units among these newborns. Stillbirth and neonatal mortality rates, on the other hand, were low. As a result, the researcher decided to conduct this study to see if women attending prenatal clinics in the Obio/Akpor local government area of Rivers State followed the COVID-19 procedure.

### Objectives of the Study

The objective of the study was to examine compliance with COVID-19 protocol among women attending antenatal clinics in Obio/Akpor local government area of Rivers State.

### Research Question

1. What is the extent of compliance with COVID-19 protocol among women attending antenatal clinics in Obio/Akpor Local Government Area of Rivers State?
2. What is the extent of compliance with COVID-19 protocol among women attending antenatal clinics based on age, marital status, educational status, occupation and social-economic status in Obio/Akpor Local Government Area of Rivers State?

### Hypotheses

The following hypotheses were formulated and tested 0.05 level of significance.

There is no significant difference in compliance with COVID-19 protocol among women attending antenatal clinics in Obio/Akpor Local Government Area of Rivers State based on :

- i). age
- ii). marital status,
- iii). educational status,
- iv). occupation,
- v) social-economic status.

## Materials and Methods

The study employed a descriptive survey approach. Nwankwo (2013) defined descriptive survey design as "collecting data from a large sample drawn from a given population and describing certain features of the sample as they are at the time of the study and which are of interest to the researcher without manipulating any of the study's independent variables". The population of the study comprised all pregnant women in Obio/Akpor Local Government Area. Obio/Akpor Local Government Area has a population of 75,388 women (National Bureau of Statistics, 2018). Taro-Yaemene formula was used in the calculation of the sample size of 400 pregnant women for the study. The instrument for data collection was the questionnaire designed by the researcher titled "compliance with COVID-19 protocol among women questionnaire". The reliability index of 0.74 was obtained using the test-retest method indicating that the instrument was reliable and use for the study. Data collected from this study were coded and analysed using simple percentage (%), mean, and chi-square through Statistical Package for Service Solution version 25.0.

## Results

**Table 1: Socio-demographic data**

| Variables                    | Frequency<br>(n=400) | Percentages |
|------------------------------|----------------------|-------------|
| <b>Age</b>                   |                      |             |
| 20-30 years                  | 192                  | 48.00       |
| 31-40 years                  | 144                  | 36.00       |
| 41-50 years                  | 41                   | 10.30       |
| 51-60 years                  | 23                   | 5.80        |
| <b>Level of Education</b>    |                      |             |
| Primary                      | 33                   | 8.30        |
| Secondary                    | 171                  | 42.80       |
| Tertiary                     | 196                  | 49.00       |
| <b>Occupation</b>            |                      |             |
| Self-employed                | 102                  | 25.50       |
| Civil servants               | 62                   | 15.50       |
| House-wife                   | 236                  | 59.00       |
| <b>Socio-economic Status</b> |                      |             |
| High                         | 21                   | 5.30        |
| Medium                       | 105                  | 26.30       |
| Low                          | 274                  | 68.50       |
| <b>Marital Status</b>        |                      |             |
| Single                       | 23                   | 5.80        |
| Married                      | 296                  | 74.00       |
| Separated                    | 29                   | 7.20        |
| Divorced                     | 42                   | 10.50       |
| Widowed                      | 10                   | 2.50        |

The Table 1 showed that 192(48.0%) of the respondents are aged 20-30 years, 144(36.0%) 31-40 years, 41(10.3%) 41-50 years, 23(5.8%) 51-60 years. For the level of education, 33(8.3%) had primary education only, 171(42.8%) had secondary, 196 (49.0) had tertiary. For occupation, 102(25.5%) were self-employed, 62(15.5%) were civil servants, 236 (33.5%) were housewives. Twenty-one (5.3%) had high economic status, 105(26.4%) had medium and 274(68.5%) had low socioeconomic status. For marital status, 23(5.8%) were single, 296(74.0%) married, 29(7.2%) separated, 42(10.5%) divorced and 10(2.5) were widowed

**Table 2: Compliance with COVID-19 protocol among women attending antenatal clinic**

| Preventive behaviour against Covid-19 | Frequency | Percentages |
|---------------------------------------|-----------|-------------|
| Good                                  | 301       | 75.3        |
| Poor                                  | 99        | 24.8        |
| Total                                 | 400       | 100.0       |

The result showed that 301(75.3) had a good preventive behaviour while 99(24.8) had a poor preventive behaviour against Covid-19.

**Table 3: Preventive behaviour against Covid-19**

| Variable                     | Preventive behaviour against Covid-19 |           | Total Freq (%) |
|------------------------------|---------------------------------------|-----------|----------------|
|                              | Good N (%)                            | Poor N(%) |                |
| <b>Age Group</b>             |                                       |           |                |
| 20-30                        | 158(82.3)                             | 34(17.7)  | 192(100)       |
| 31-40                        | 86(59.7)                              | 58(40.3)  | 144(100)       |
| 41-50                        | 36(87.8)                              | 5(12.2)   | 41(100)        |
| 51-60                        | 21(91.3)                              | 2(8.7)    | 23(100)        |
| Total                        | 301(75.3)                             | 99(24.8)  | 400(100)       |
| <b>Level of Education</b>    |                                       |           |                |
| Primary                      | 23(69.7)                              | 10(30.3)  | 33(100)        |
| Secondary                    | 128(74.9)                             | 43(25.1)  | 171(100)       |
| Tertiary                     | 150(76.5)                             | 46(23.5)  | 196(100)       |
| Total                        | 301(75.3)                             | 99(24.8)  | 400(100)       |
| <b>Occupation</b>            |                                       |           |                |
| Self-employed                | 79(77.5)                              | 23(22.5)  | 102(100)       |
| Civil servants               | 42(67.7)                              | 20(32.3)  | 62(100)        |
| House-wife                   | 180(76.3)                             | 56(23.7)  | 236(100)       |
| Total                        | 301(75.3)                             | 99(24.8)  | 400(100)       |
| <b>Socio-economic Status</b> |                                       |           |                |
| High                         | 16(76.2)                              | 5(23.8)   | 21(100)        |
| Medium                       | 88(83.8)                              | 17(16.2)  | 105(100)       |
| Low                          | 197(71.9)                             | 77(28.1)  | 274(100)       |
| Total                        | 301(75.3)                             | 99(24.8)  | 400(100)       |
| <b>Marital Status</b>        |                                       |           |                |
| Single                       | 22(95.7)                              | 1(4.3)    | 23(100)        |
| Married                      | 221(74.7)                             | 75(25.3)  | 296(100)       |
| Separated                    | 21(72.4)                              | 8(27.6)   | 29(100)        |
| Divorced                     | 31(73.8)                              | 11(26.2)  | 42(100)        |
| Widow                        | 6(60.0)                               | 4(40.0)   | 10(100)        |
| Total                        | 301(75.3)                             | 99(24.8)  | 400(100)       |

The result from Table 3 showed that for age, adopting good compliance with COVID-19 protocol was found more among the women aged 51-60 years (91.3%) followed by 41-50 years (87.8%) followed by those aged 20-30 (82.3%), and those aged 31-40 years (59.7%) were fewest. For the level of education, good compliance with COVID-19 protocol was found to be practiced most by those with tertiary level of education (76.5%), followed by those with a secondary level of education (74.9%), and the fewest among those with primary education (69.7%). For occupation, compliance with COVID-19 protocol was good amongst the self-employed (77.5%), followed by housewives (76.3%) and the fewest among civil servants (67.7%). For socioeconomic status, compliance with COVID-19 protocol was good among those of medium (83.8%), followed by high (76.2%) and fewest among those of low socioeconomic status (71.9%). For marital status, compliance with COVID-19 protocol was good and was practised more by the singles (95.7%), followed by the married (74.7%), followed by the divorced (73.8%), followed by those separated and fewest among the widows (60.0%). Thus, good compliance

with COVID-19 protocol was found more among those aged 51-60, those with a tertiary level of education, those who were self-employed, those with medium socioeconomic status, and those who were single among the pregnant women attending antenatal clinics at Obio/Akpor Local Government Area in Rivers State.

**Table 4: Chi-square test showing association between variables and compliance with COVID-19 protocol among women attending antenatal clinic in Obio/Akpor LGA in Rivers State**

| Variable                     | Compliance with Covid-19 |               | Total    | $\chi^2$<br>p-value<br>df | Decision     |
|------------------------------|--------------------------|---------------|----------|---------------------------|--------------|
|                              | Good<br>N (%)            | Poor<br>N (%) |          |                           |              |
| <b>Age Group</b>             |                          |               |          |                           |              |
| 20-30                        | 158(82.3)                | 34(17.7)      | 192(100) | 30.407                    | Rejected     |
| 31-40                        | 86(59.7)                 | 58(40.3)      | 144(100) | 0.000*                    |              |
| 41-50                        | 36(87.8)                 | 5(12.2)       | 41(100)  | 3                         |              |
| 51-60                        | 21(91.3)                 | 2(8.7)        | 23(100)  |                           |              |
| Total                        | 301(75.3)                | 99(24.8)      | 400(100) |                           |              |
| <b>Level of Education</b>    |                          |               |          |                           |              |
| Primary                      | 23(69.7)                 | 10(30.3)      | 33(100)  | 0.733                     | Not rejected |
| Secondary                    | 128(74.9)                | 43(25.1)      | 171(100) | 0.693                     |              |
| Tertiary                     | 150(76.5)                | 46(23.5)      | 196(100) | 2                         |              |
| Total                        | 301(75.3)                | 99(24.8)      | 400(100) |                           |              |
| <b>Occupation</b>            |                          |               |          |                           |              |
| Self-employed                | 79(77.5)                 | 23(22.5)      | 102(100) | 2.274                     | Not rejected |
| Civil servants               | 42(67.7)                 | 20(32.3)      | 62(100)  | 0.321                     |              |
| House-wife                   | 180(76.3)                | 56(23.7)      | 236(100) | 2                         |              |
| Total                        | 301(75.3)                | 99(24.8)      | 400(100) |                           |              |
| <b>Socio-economic Status</b> |                          |               |          |                           |              |
| High                         | 16(76.2)                 | 5(23.8)       | 21(100)  | 5.794                     | Not rejected |
| Medium                       | 88(83.8)                 | 17(16.2)      | 105(100) | 0.055                     |              |
| Low                          | 197(71.9)                | 77(28.1)      | 274(100) | 2                         |              |
| Total                        | 301(75.3)                | 99(24.8)      | 400(100) |                           |              |
| <b>Marital Status</b>        |                          |               |          |                           |              |
| Single                       | 22(95.7)                 | 1(4.3)        | 23(100)  | 6.616                     | Not rejected |
| Married                      | 221(74.7)                | 75(25.3)      | 296(100) | 0.158                     |              |
| Separated                    | 21(72.4)                 | 8(27.6)       | 29(100)  | 4                         |              |
| Divorced                     | 31(73.8)                 | 11(26.2)      | 42(100)  |                           |              |
| Widow                        | 6(60.0)                  | 4(40.0)       | 10(100)  |                           |              |
| Total                        | 301(75.3)                | 99(24.8)      | 400(100) |                           |              |

\*significant( $p < 0.05$ ), not significant ( $p > 0.005$ );  $\chi^2$ =Chi-Square

Table 5 showed a statistically significant association between age and compliance with COVID-19 protocol ( $\chi^2 = 30.41$ ;  $df = 3$ ;  $p < 0.05$ ). Thus, the null hypothesis which stated that there was no significant association between age and compliance with COVID 19 protocol among women attending antenatal clinic in Obio/Akpor Local Government Area of Rivers State was rejected. The result also indicated a nonsignificant association between level of education and compliance with COVID 19 protocol ( $\chi^2$ value = 0.733;  $df = 2$ ;  $p > 0.05$ ). Thus, the null hypothesis which stated that there is no significant association between level of education and compliance with COVID-19 protocol was accepted. For occupation, the result also indicated a non-significant association between occupation and compliance with COVID-19 protocol ( $\chi^2$ -value=2.274;  $df = 2$ ;  $p > 0.05$ ). Thus, the null hypothesis which stated that there is no significant association between level of education and compliance with COVID19 protocol was accepted. The result also indicated a nonsignificant association between socioeconomic status and compliance with COVID19 protocol ( $\chi^2$ value = 5.794;  $df = 2$ ;  $p > 0.05$ ). Thus, the null hypothesis which stated that there is no significant association between socioeconomic status and compliance with COVID19 protocol. The result showed a nonsignificant association between marital status and compliance with COVID 19 ( $\chi^2$ value = 6.616;  $df = 4$ ;  $p > 0.05$ ). Thus, the null hypothesis which stated that there is no significant association between marital status and compliance with COVID-19 protocol was accepted.

## Discussion of Finding

### Compliance with COVID-19 protocol among women attending antenatal clinic

The study revealed that majority of the respondents had a good compliance with COVID19 protocol among women attending antenatal clinic. This indicates that respondents have been protecting themselves against Covid19. The finding of the study corroborates with that of Etor and Ukaga (2020), Khalil et al. (2020) and Egbi et al. (2020) whose studies reported that respondents had good compliance with COVID19 protocol. The finding of the study is also similar to that of Alves et al. (2020) and Usman et al. (2020). These studies reported that respondents had good compliance with COVID-19 protocol. The finding of the Tadesse et al (2020) and Yang et al (2020) whose studies reported that respondents had good compliance with COVID-19 protocol. The similarities as reported between these studies might be attributed to the fact that all institutions including Government parastatal have placed compulsory compliance with Covid-19 protocols, especially in health institutions such as clinics and hospitals. Also, Covid-19 has been known for its high mortality. Therefore, compliance may be high.

The finding of the study revealed that good compliance with COVID-19 protocol was found more among those aged 51-60, those with a tertiary level of education, those who were self-employed, those with medium socioeconomic status, and those who were single among pregnant women. The finding of the study is in line with that of Ogbole et al (2020), Okello et al. (2020). Their studies discovered that factors such as age, marital status, educational status, belief system, and social-economic status contribute to compliance with COVID-19 protocol. The finding of the study also indicates that socio-demographic characteristic influences compliance with COVID-19 protocol. This may be so because age helps in decision making, education helps in getting information and applying appropriate measures based on the information gotten likewise other factors. These factors can both increase the level of compliance. However, factors such as cultural background and individual behaviour can play significant roles.

## Conclusion

The study concluded that the majority of the respondents had good compliance with COVID-19 protocol which differs in socio-demographic variables. Hence, there is a need to put in policies that may ensure continuity in compliance with the COVID-19 prevention protocols

## Recommendations

Based on the findings the following recommendations were made:

1. Government should through its relevant agencies conduct more enlightenment campaigns through public talk to create more awareness of the need for adequate compliance with COVID-19 protocols in the populace.
2. Institutions such as schools, religious bodies (churches and mosques), etc should make improve teaching compliance with COVID-19 protocols.
3. Targeted, staged-based information, education, and communication intervention should be implemented by NGOs to change the misconceptions about the existence of COVID-19. This will improve the level of COVID-19 compliance among members of the society
4. Households and family members should ensure they encourage their loved ones to comply with COVID-19 protocols especially when they are pregnant to reduce the spread of the virus.

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