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Knowledge and Perception of Pre-Eclampsia and Eclampsia among Pregnant Women attending Antenatal Clinic in a State Hospital, Ogun State, Nigeria

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Abstract

Background: Pre-eclampsia and Eclampsia are among the top three causes of maternal mortality worldwide. This study assessed the knowledge and perception of pre-eclampsia and eclampsia among pregnant women attending an antenatal clinic in a State hospital in Ogun state, Nigeria.

Method: It was a quasi-experimental study conducted among 51 mild COVID-19 cases enrolled for the study in Hamdala isolation center from 27th October, 2020 to 20th May, 2021. The outcome variables were viral clearance, resolution of symptoms and duration of hospital stay from the commencement of the different treatment regimen at level of significance $P < 0.05$ and effect size (Cohen's D 0.2= small, 0.5=medium and ≥0.8 = large).

Result: The results show that 210(52.6%) of the study respondents are between the age group 26-35 years. Two hundred and eighty-eight (72.2%) participants had poor knowledge of pre-eclampsia and eclampsia and 207(51.8%) of participants had poor perception of pre-eclampsia and eclampsia. Factors such as age group, and educational status, are significantly associated with knowledge and perception of pre-eclampsia and eclampsia ($p < .0.05$).

Conclusion: The study shows that majority of the respondents have poor knowledge (72.2%) and poor perception of pre-eclampsia and eclampsia, with factors such as age group, and educational status, having significant association with knowledge and perception of pre-eclampsia and eclampsia. Therefore, nurses are to intensify their efforts in health educating pregnant women on pre-eclampsia and eclampsia in a simple language they can comprehend. This will go a long way in improving women's knowledge and perception of pre-eclampsia and eclampsia.

Keywords: Pre-eclampsia**,** eclampsia, knowledge, perception, pregnant women

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Introduction

Hypertensive disorders in pregnancy are among the leading causes of maternal morbidity and mortality among pregnant women globally, among which are pre-eclampsia and eclampsia. Pre-eclampsia is characterized by high blood pressure, it damages body organs like the kidneys and liver which can lead to heart failure, stroke, coronary heart disease and even death.[1,2] Pre-eclampsia is accountable for fetal complications such as preterm birth, fetal growth restriction and maternal complications such as abnormal kidney function, severe hypertension, pulmonary oedema, and abnormal liver function among many others.[3] If not identified and managed early, pre-eclampsia may progress to eclampsia. Eclampsia is one major complication of pre-eclampsia which is responsible for high mortality among pregnant women. Eclampsia is a severe complication of pre-eclampsia with seizures being a significant manifestation.[4] These disorders remain a public health concern and are responsible for more than 60,000 maternal deaths annually globally.[4,5]

Pre-eclampsia affects an estimated 4.6% of pregnancies globally.[6] Generally, hypertensive disorders in pregnancy are more prevalent in developing countries than in developed countries.[7] The occurrence of pre-eclampsia and eclampsia in the developed countries of North America and Europe is almost the same and it is about 5–7 cases in 10,000 deliveries.[8] In Africa, it varies from country to country such as in South Africa, Egypt, Tanzania, Ethiopia with ratio 1.8% to 7.1%. Nigeria has a prevalence of pre-eclampsia and eclampsia ranges between 2% to 16.7%.[9] Pre-eclampsia and eclampsia are responsible for approximately 72,000 maternal mortality and 500,000 infant mortality per year worldwide.[10] Pre-eclampsia and eclampsia are responsible for the increase in maternal morbidity and mortality in Africa, and Nigeria has one of the highest maternal mortality ratios ranging from 496 to 560 per 100,000 live births.[5]

Few studies have been carried out among mothers on pre-eclampsia and eclampsia in Nigeria, Ogun State inclusive. Available data reported that, pre-eclampsia is one of the disorders with high prevalence rate of 2% and 16% and a high maternal mortality rate of more than 30,000 yearly deaths in Nigeria.[8] In the Northern part of Nigeria, maternal deaths as a result of pre-eclampsia is approximately 40% while it is approximately 6% in the Southern part of the country. Lack of knowledge about the causes and complications of pre-eclampsia and eclampsia and poor perception of these disorders are major factors responsible for the alarming rate of these diseases and resultant death.[5,8] A study reported that many women perceived hypertension in pregnancy as a problem related to depressive thoughts due to marital and/or financial problems conflict while seizures in pregnancy were perceived to result from prolonged exposure to cold.[5] In a similar study conducted in Ikenna LGA, Ogun state, only 33% of the women were said to have a high level of knowledge and 25.5% had poor level of knowledge while the remaining 41.5% had fair level of knowledge of eclampsia during pregnancy.[11] It was based on these findings, the study was conducted to assess the knowledge and perception of pre-eclampsia and eclampsia among pregnant women attending an ante-natal clinic in a State hospital in Ogun state, Nigeria.

Method

Study design: A descriptive cross-sectional study was used to assess the knowledge and perception of preeclampsia and eclampsia among pregnant women attending an antenatal clinic in a State hospital in Ogun State, Nigeria.

Study setting: This research study was conducted in State Hospital Ilaro, Ogun State, Nigeria. The hospital is one of the secondary healthcare institutions in the Ogun West senatorial district of Ogun State. The hospital focuses on providing high-quality healthcare services to everyone in its capacity and jurisdiction. The hospital comprises several units including; the accident and emergency unit, the outpatient department, the eye clinic, the male ward, the children's ward, the labour room, pre and post-natal ward, the physiotherapy, the antenatal clinic, the infant welfare clinic, family planning, laboratory services.

Study population: This study was carried out among pregnant women attending antenatal clinic in State Hospital Ilaro, Ogun State. Three hundred and ninety-nine (309) pregnant women who participated were selected using a simple random technique. All willing pregnant women who consented after the purpose of the study had been explained to them were included in the study while pregnant women who were unwilling to participate and were not medically fit were excluded from the study.

Instrument for data collection: Self-developed questionnaire was used in collecting data. The questionnaire consists of three sections, Section A addresses, the socio-demographic data of the respondents, Section B addresses, the knowledge of pregnant women on pre-eclampsia and eclampsia, and Section C, addresses, the perception of pregnant women on pre-eclampsia and eclampsia. This instrument was

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validated using face and content validity. The instrument reliability was tested and this yielded a Cronbach's alpha score of 0.862.

Data analysis: The data collected was coded and cleaned using the Statistical Package for Social Sciences (SPSS) version 20.0. Descriptive and inferential statistics were used to analyse the data collected. Categorical and discrete variables were expressed as frequencies (percentages) and means ± SD, respectively. Multivariate logistic regression analysis was used to evaluate factors associated with knowledge and perception. A p-value < 0.05 was considered statistically significant.

Results

Table 1: Socio-demographic characteristics

Variables	Freq.	Percent (%)
Age(years)		
16-25	150	37.6
26-35	210	52.6
36-45	39	9.8
Mean age and STD	33.3±8.30	
Religion		
Christianity	268	67.2
Islam	131	32.8
Tribe		
Yoruba	303	75.9
Hausa	53	13.3
Igbo	20	5.0
Other	23	5.8
Marital status		
Single	30	7.5
Married	310	77.7
Separated	59	14.8
Educational status		
No formal education	49	12.3
Primary school	93	23.3
Secondary school	154	38.6
Tertiary	103	25.8
Occupation		
Group I: Professional	98	24.6
Group II: Skilled workers	146	36.6
Group III: Non-skilled workers	125	31.3
Group IV: Wife - House wife	30	7.5
Number of pregnancy		
1-5	275	68.9
6-10	124	31.1

Table 1 above shows that participants' mean age was 33±8year. The majority of 210 (52.6%) of the participants were within 26-35 years of age. The majority 154 (38.6%) of the participants had secondary education. The majority 275(68.9%) of the participants have had at least five pregnancies. The majority 146 (36.6%) of the participants are experienced in their occupations. Other information is shown in the table above.

Table 2: Knowledge of pregnant women on Pre-eclampsia and Eclampsia

Variables	Freq.	Percent (%)
Heard of Pre-eclampsia and Eclampsia		
Yes	155	38.8
No	244	61.2
Total	399	100.0
Sources (multiple responses) n=155		
Social media	94	60.6
Health talk	126	81.3
Family and friends	81	52.3
Internet search	15	9.7
School	75	48.4
Pre-eclampsia and Eclampsia can be prevented		
Yes	113	72.9
No	42	27.1
Total	155	48.0
Pre-eclampsia and Eclampsia are pregnancy-related Conditions		
Yes	65	41.9
No	90	58.1
Total	155	100.0
Can Eclampsia be treated?		
Yes	150	96.8
No	5	3.2
Total	155	100
Eclampsia is a complication of Preeclampsia		
Yes	125	80.6
No	30	19.4
Total	155	100.0
One major sign of Eclampsia is seizures during pregnancy		
Yes	112	72.3
No	43	27.7
Total	155	100
Eclampsia can lead to death		
Yes	67	43.2

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Variables	Freq.	Percent (%)
No	88	56.8
Total	155	100.0
Possible treatment (multiple responses)		
Herbal concoction	89	22.3
Anti-hypertensive medication	118	29.6
Signs and Symptoms of Eclampsia (multiple responses)		
Nausea and vomiting	28	7.0
Blurry vision	107	26.8
Persistent headache	97	24.3
High blood pressure	128	32.1
Weight gain	67	16.8
Muscle aches	89	22.3
Spasm	137	34.3
Risk factors		
Age	40	10.0
Multi pregnancy	106	26.6
Gestational diabetics	128	32.1
Family history	18	4.5

The study reveals that a significant number of the participants 244(61.2%) have not heard of pre-eclampsia and eclampsia. The highest proportion of the participants 126(81.3%) indicated that they heard of eclampsia during health talk. The majority of the participants indicated yes to the following statements: 113(72.9%) pre-eclampsia and eclampsia can be prevented, and 150 (96.8%) eclampsia can be treated. Meanwhile, 88(56.8%) and 90 (58.1%) participants indicated No to the following statements: eclampsia can lead to death, and pre-eclampsia and eclampsia are pregnancy-related conditions respectively. Other information is shown in the table above.

Table 3: Perception of pregnant women on Pre-eclampsia and Eclampsia

Variables	Agreed		Disagreed	
	Freq.	%	Freq.	%
Pre-eclampsia and Eclampsia are related to high blood pressure	146	36.6	253	63.4
Pre-eclampsia and Eclampsia can be treated medically	155	38.9	244	61.1
Eclampsia is a severe condition	151	37.8	248	62.2
Being too fat can make some pregnant women develop Eclampsia	94	23.6	305	76.4
Young women are not susceptible to Preeclampsia	157	39.4	242	60.6
Pre-eclampsia and Eclampsia are caused by evil spirits	205	51.3	194	48.7
Some women are destined to have Pre-eclampsia and Eclampsia	81	20.3	318	79.7
Pre-eclampsia and Eclampsia are caused by eating bad food during pregnancy	81	20.3	318	79.7
The use of herbs is the only treatment for Pre-eclampsia and Eclampsia	111	27.9	288	72.1

Table 3 above shows that the majority of the participants disagreed with the following statements: pre-eclampsia and eclampsia are related to high blood pressure 253(63.4%), pre-eclampsia and eclampsia can be treated medically 244(61.1%), eclampsia is a severe condition 248(62.2%), being too fat can make some pregnant women develop eclampsia 305(76.4%) etc. Meanwhile, 205 (51.3%) agreed that pre-eclampsia and eclampsia are caused by evil spirits. Other information is shown in the table above.

Table 4: Association between socio-demographic data and knowledge of Pre-eclampsia and Eclampsia

VARIABLES	Level of Knowledge		Total	χ^2	Df	P-value
	Good	Poor				
Age(years)						
16-25	120(80.0)	30(20.0)	150(100.0)	12.630[a]	3	.006
26-35	190(90.5)	20(9.5)	210(100.0)			
36-45	28(71.8)	11(28.2)	39(100.0)			

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VARIABLES	Level of Knowledge		Total	χ^2	Df	P-value
	Good	Poor				
Total	338(84.7)	61(15.1)	399(100.0)			
Religion						
Christianity	140(52.2)	128(47.8)	268(100.0)	8.248[a]	1	.618
Islam	79(60.3)	52(39.7)	131(100.0)			
Total	219(54.9)	180(45.1)	399(100.0)			
Ethnicity						
Yoruba	178(58.7)	125(41.3)	303(100.0)	10.873[a]	1	.350
Hausa	33(62.3)	20(37.7)	53(100.0)			
Igbo	14(70.0)	6(30.0)	20(100.0)			
Other	15(65.2)	8(34.8)	23(100.0)			
Total	240(60.2)	159(39.8)	399(100.0)			
Marital status						
Single	17(56.7)	13(43.3)	30(100.0)	13.422[a]	1	.516
Married	193(62.3)	117(36.7)	310(100.0)			
Separated	35(59.3)	24(40.7)	59(100.0)			
Total	245(61.4)	154(38.6)	399(100.0)			
Education Status						
No formal education	39(79.6)	10(20.4)	49(100.0)	10.552[a]	2	.005
Primary school	80(86.0)	13(14.0)	93(100.0)			
Secondary school	107(69.5)	47(30.5)	154(100.0)			
Tertiary institution	63(66.2)	40(33.8)	103(100.0)			
Total	289(72.4)	110(27.6)	399(100.0)			
Occupation						
Group I: Professional	56(57.1)	42(42.9)	98(100.0)	13.107[a]	1	.064
Group II: Skilled workers	88(60.3)	58(39.7)	146(100.0)			
Group III: Non-skilled workers	90(72.0)	35(28.0)	125(100.0)			
Group IV: Wife Housewife	19(63.3)	11(36.7)	30(100.0)			
Number of pregnancies						
1-5	145(52.7)	130(47.3)	275(100.0)	15.429[a]	4	.434
6-10	73(58.9)	51(41.1)	124(100.0)			
Total	218(54.6)	181(45.4)	399(100.0)			

Table 4 above shows that there is a statistically significant association only between the age group, educational status and level of knowledge of the respondents on pre-eclampsia and eclampsia ($p < .0.05$).

Table 5: Association between socio-demographic data and perception of Pre-eclampsia and eclampsia

Variable	Level of Perception		Total	χ^2	Df	p value
	Good	Poor				
Age(years)						
16-25	111(74.0)	39(26.0)	150(100.0)	23.432[a]	1	.000
26-35	165(78.6)	45(21.4)	210(100.0)			
36-45	23(59.0)	16(41.0)	39(100.0)			
Total	299(74.9)	100(25.1)	399(100.0)			
Religion						
Christianity	160(59.7)	108(40.3)	268(100.0)	14.225[a]	1	.128
Islam	84(64.1)	47(35.9)	131(100.0)			
Total	244(61.2)	155(38.8)	399(100.0)			
Ethnicity						
Yoruba	164(54.1)	139(45.9)	303(100.0)	24.219[a]	2	.734
Hausa	29(54.7)	24(45.3)	53(100.0)			
Igbo	15(75.0)	5(25.0)	20(100.0)			

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Variable	Level of Perception		Total	χ^2	Df	p value
	Good	Poor				
Other	17(73.9)	6(26.1)	23(100.0)			
Total	225(56.4)	174(43.6)	399(100.0)			
Marital status						
Single	18(60.0)	12(40.0)	30(100.0)	18.135[a]	4	.116
Married	199(64.2)	111(35.8)	310(100.0)			
Separated	39(66.1)	20(33.9)	59(100.0)			
Total	256(64.2)	143(35.8)	399(100.0)			
Educational status						
No formal education	42(85.7)	7(14.3)	49(100.0)	22.402[a]	1	.001
Primary school	83(89.2)	10(10.8)	93(100.0)			
Secondary school	114(74.0)	40(26.0)	154(100.0)			
Tertiary institution	74(71.8)	29(28.2)	103(100.0)			
Total	313(78.4)	86(21.6)	399(100.0)			
Occupation						
Group I: Professional	59(60.2)	39(39.8)	98(100.0)	15.227[a]	2	.487
Group II: Skilled workers	91(62.3)	55(37.7)	146(100.0)			
Group III: Non-skilled workers	92(73.6)	33(26.4)	125(100.0)			
Group IV: Wife Housewife	17(56.7)	13(43.3)	30(100.0)			
Total	259(64.9)	140(35.1)	399(100.0)			
Number of pregnancies						
1-5	150(54.5)	125(45.5)	275(100.0)	9.822[a]	1	.126
6-10	84(67.7)	40(32.3)	124(100.0)			
Total	234(58.6)	165(41.4)	399(100.0)			

Table 5 above shows that there is a statistically significant association between the age group, level of education and level of perception of the participants on pre-eclampsia and eclampsia ($p < .0.05$)

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Discussion

Pre-eclampsia and eclampsia are responsible for maternal and neonatal morbidity and mortality. It is a major maternal health issue facing obstetric practice today. It affects nearly 4.6% of pregnancies globally. Even though pre-eclampsia and eclampsia are reported to be reduced in the Western world, they remain significant disorders responsible for maternal mortality all over the world.[6]

Most of the participants of this study are of age range between 26-35 years, the mean age of participants is 33.3 years. The majority of the pregnant mothers (38.6%) had a secondary school level of education and approximately seventy percent had at least five pregnancies.

The present study revealed that more than sixty percent of the women had never heard of pre-eclampsia and eclampsia which consent with a study finding on knowledge of eclampsia among pregnant women attending a tertiary antenatal clinic in Ikenne, LGA, Ogun State, Nigeria where 61.7% of the women had not heard of pre-eclampsia, and 45 (47.9%) of the women had not heard of eclampsia.[11] Nevertheless, this current study reported that most of the women knew of at least one of the major signs of eclampsia. This finding agrees with a study conducted in Tigray Regional State, Ethiopia where most of the pregnant women identified at least a sign or symptom of pregnancy-induced hypertension.[13] Some of the signs of eclampsia stated by this present study participants are blurred vision, headache, weight gain, and spasms. The study conducted in Ikenne LGA, Ogun State, Nigeria submitted that the study participants identified persistent headache, convulsion, pedal and face edema, sweating and visual disturbance as dangerous signs of eclampsia.[11] In addition, it was reported that the pregnant mothers in University Hospital in Kumasi, Ghana correctly identified high blood pressure, persistent headache and oedema as signs and symptoms of pre-eclampsia.[3] The risk factors of eclampsia identified by this current study participants are gestational diabetes (32.1%), multi-pregnancy (26.6%) and age (10%) while a study from a general hospital in Nigeria reported obesity, chronic hypertension, and previous history of pre-eclampsia as risk factors of eclampsia.[12] It is worth noting that out of the few from the current study who heard of these pregnancy-related disorders, a majority indicated health talk as the major source of information. These slight disparities in these findings indicate a knowledge gap that should be addressed by health care providers especially nurses through a well-designed health educational program during antenatal clinics.

Summarily, a high percentage of the women had low knowledge of pre-eclampsia and eclampsia and this aligns with a study conducted in Kumasi, Ghana where majority of mothers also displayed low knowledge.[3] Similarly, the study conducted among pregnant mothers attending antenatal clinic in Ikenne LGA, Ogun State, revealed that most of the women had fair knowledge (41.5%), while only (33%) had high knowledge and 25.5% had poor knowledge.[11] Meanwhile, a study results in a general hospital in Southwest, Nigeria, revealed that more than sixty percent of the mothers had good knowledge of pre-eclampsia and eclampsia[12] which contradicts the present study result. Nevertheless, this present study's findings imply that there is a need to create more awareness among the public, especially women of reproductive age in the states of Nigeria on these pregnancy-related disorders.

There are limited studies on perception and its associated factors to pre-eclampsia and eclampsia. A study on perceptions about eclampsia, birth preparedness, and complications readiness among antenatal clients attending a specialist hospital in Kano, Nigeria, reported that 66.8% of the participants had a good perception of eclampsia. Meanwhile, this current study revealed that 67.4% of the women had poor perceptions of pre-eclampsia and eclampsia.[14] Many of the women did not perceive pre-eclampsia and eclampsia as disorders related to high blood pressure. A study conducted in a community in Southern Mozambique on perceptions of pre-eclampsia and eclampsia reported that many pregnant women perceived these disorders to be associated with marital problems, strenuous work, worry, and sadness. Furthermore, most of the women in this recent study perceived that pre-eclampsia and eclampsia cannot be treated medically. This may be due to the majority's perception that these disorders are caused by evil spirits. However, it is worth noting that the study participants disagreed with the statements that the use of herbs is the only treatment for pre-eclampsia and eclampsia.[15] These findings on the pregnant mothers' perception of pre-eclampsia and eclampsia are reflections of inadequate knowledge.

Furthermore, educational status was statistically significantly associated with both the level of knowledge and perception of pre-eclampsia and eclampsia ($p < .0.05$) among the study participants. This agrees with some findings from pregnant mothers in Ghana and Italy, where participants' level of education was found to be significantly associated with the level of knowledge on pre-eclampsia[3]. Participants who did not attend any formal education were less likely to be knowledgeable on

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pre-eclampsia and eclampsia compared with those with formal education. Also, the study among pregnant women in a Specialist Hospital in Kano, Nigeria, revealed that there is a statistically significant association between the educational status and the level of perception of the participants on pre-eclampsia and eclampsia. Mothers with at least secondary education had a better perception of pre-eclampsia and eclampsia than those without any form of education. Education has been a major tool for the acquisition of knowledge.[14] With an increase in mothers' knowledge, their perceptions will change positively. Health education is an effective tool in disseminating health promotion-related information. Nurses and other health care providers need to put in more effort during health education.[16] Health educational programs designed should be culturally sensitive and also should consider the educational background of the recipients.[17] More efforts should be put into health education programs designed for pregnant women during ante-natal clinics.

Strengths and limitations of the study: The study assessed two major important variables knowledge and perception of the two hypertensive-related disorders affecting pregnant women as against available previous studies. Limitations of the study include limited access to materials on the research topic and the literacy level of study participants.

Conclusion

This study reveals low knowledge and poor perception of pre-eclampsia and eclampsia. The level of education is a major factor that influences knowledge and perception. Therefore, the programme to eradicate illiteracy must be carried to a logical conclusion; as the more educated these mothers are, the more they understand the problems of pre-eclampsia and eclampsia. It also implies that health educational programs and materials should be designed in simple local language for easy and good comprehension.

Ethical consideration: Ethical approval was obtained from the State Department for Planning Research and Statistics. Permission was obtained from the study setting management. Following this, the researcher sought verbal permission from each participant. The purpose of the study as an academic activity and to generate a body of knowledge for improving health education programs was explained to the participants. Participants were assured that the information they provided would be kept confidential and that failure to participate would not in any way affect their care. Informed consent was obtained. All ethical principles and rights were ensured and maintained all through the research process.

Authors' contribution: Olabisi M. Oluseye participated sufficiently in the intellectual content, conception, and design of this work and interpretation of the data, as well as the writing of the manuscript, Olowolagba Funmilayo Rachel participated in the conception, design of this work and interpretation of the data, as well as the writing of the manuscript. Olatunji-Adewunmi Oluwakemi and Akinsoji Folasade Modasola participated in the writing of the manuscript.

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