# Assessment of Perception and Management Practices of Pre-eclampsia among Pregnant Women in Southwest Nigeria

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#### Abstract:-

#### > Background

Pre-eclampsia remains one of the leading causes of maternal and fetal morbidity and mortality in low resource countries with weak health systems. Complications from pre-eclampsia occurs in 2–8% of pregnancies worldwide and up to 10% in developing countries. Despite the increasing complications from pre-eclampsia, there is limited data on the perception and management practices of preeclampsia in the study location. The study assessed the perception and management practices of pre-eclampsia among pregnant women from Osun State, Southwest Nigeria

#### > Patients and Methods

The study adopted descriptive cross-sectional design. From a population of 2,283 pregnant women in Osun East Senatorial district a sample size of 331 was determined by multi-stage sampling technique. A validated interviewer-administered questionnaire was used for data collection. The Cronbach alpha coefficient for the entire construct was 0.97. The respondent's perception of pre-eclampsia was measured on 42-point rating scale and management practices were measured on an 18-point rating scale. Data was analysed and presented in frequencies, percentages, mean, and standard deviation. **Statistical** significance considered at p < 0.05

#### > Result

The mean age of the respondents was  $31.5 \pm 5.7$  years. More (85.2%) of the respondents were Yoruba ethnic group with Christian (84.3%) dominance. Less

than half (46.2%) of the respondents had secondary educational level.

The respondents had a Perception mean score of 15.4  $\pm$  4.18 while Majority (87.6%) of the respondents had low perception of pre-eclampsia. There was a statistically significant relationship between perception and management of Pre-eclampsia (r = 0.138 p = 0.012)

#### > Conclusion

The Perception of pre-eclampsia among pregnant women was low. This finding underscores the need for intensified effort to improve perception of pre-eclampsia among women via health education at antenatal clinics, media channels and national education programmes to improve pregnancy outcomes.

**Keywords:-** Perception, Management Practices, Maternal Mortality, Pre-eclampsia, Southwest, Nigeria

#### I. INTRODUCTION

Pre-eclampsia is defined as a systolic blood pressure of 140mmHg and/or a diastolic blood pressure of 90mmHg, measured four hours apart in previously pregnant women with normal blood pressure (International Federation of Gynecology and Obstetrics, 2020). Globally, 5-10% of women experience pre-eclampsia which is the second leading cause of maternal mortality in Sub-Saharan Africa (WHO, 2019). According to Salamon et al, Nigeria is among the countries with high maternal mortality rate in the world, with a noticeable proportion of death associated with pre-eclampsia during pregnancy (Salamon et al, 2019). Various interventional measures has been geared towards addressing

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maternal death at both national and sub-national levels., Pre-eclampsia remains one of the risk factors contributing to maternal mortality (WHO,2019). In the last two decades, Nigeria contributed 20% of global maternal death (WHO, 2020).

Pre-eclampsia can progress to eclampsia and cause adverse fetal outcomes such as preterm birth, small-forgestational-age babies, placental abruption, perinatal death and increase the risk of cardiovascular and cerebrovascular diseases and venous thromboembolism later in life (Fondjo, Boamah, Fierti, Gyesi & Owiredu, 2019). Also, Pre-eclampsia may result to maternal organ dysfunctions such as acute kidney injury, liver damage, blindness, stroke, among others (IFGO, 2020). Women who suffer from pre-eclampsia are predisposed to mental health issues such as shame, guilt, feelings of failure, loss of control, personal inadequacy and postpartum depression (Wallis, Tsigas & Saftlas, 2013).

In a study conducted in Ondo state, expectant mothers thought pre-eclampsia was a normal stress or perhaps due to stress during pregnancy (Okhae & Arulogun, 2015). While some pregnant women describe the concept of spiritual manifestation such as witchcraft as the cause of pre-eclampsia thus; they were encouraged to seek spiritual attention' (Okhae & Arulogun, 2015).

In a clinical trial that was conducted to provide an evidence-based prevention of pre-eclampsia, the use of aspirin at a minimal daily dose of 100mg- 150mg taken at bed time and commenced before 16 weeks of pregnancy reduces the occurrence of pre-eclampsia (Wertaschnigs, Reddy, Mol, Da silva coster & Rolnik, 2019).

Traditional management of pre-eclampsia include herbal mixtures, prayer, and appeal to the dead. While counseling, nutrition care given by spouses and hospital visits are the common management among pregnant mothers (Nabulo, Ruzaaza, Mugabi & Bajunirw, 2021). Adequate perception on pre-eclampsia contributes greatly to its prevention, control and management. Reports indicate that patients' perception about a disease has significant benefits on compliance to treatment and helps to abate complications associated with the disease (Howell, Harth & Brown, 2017). Proper health education with improved knowledge, women experiencing pre-eclampsia would report early to the hospital, receive timely medical intervention and have better treatment outcomes. This emphasizes the need for at-risk populations to have baseline perception of pre-eclampsia for timely and appropriate management. In spite of the increasing burden of pre-eclampsia, there are limited data from the study location using the Health Belief Model (HMB). Therefore, this study adopted the HBM to explain the perception of pre-eclampsia and its management practices among pregnant women from Osun state, southwest Nigeria.

# II. METHODOLOGY

## A. Research Design

This study adopted descriptive cross-sectional design. From a population of 2,283 pregnant women, a sample size of 331 was determined using Lesile Kish formula(a formula used by Leslie Kish in 1965 for quantitative studies was used to calculate the sample size, while 69.8% prevalence rate was used based on the result of a study on pattern of occurrence of severe pre-eclampsia among pregnant women in Obafemi Awolowo University Teaching Hospital, Osun State South-West Nigeria. (Orisabunmi, Onwudiegwu, Adeyemi, Oriji & Makinde, 2019). Multi-stage sampling technique was used to select the pregnant women in twentyfive health facilities from seven Local Government Areas. A validated questionnaire which was interviewer-administered was used for data collection. The Cronbach alpha coefficient for the entire construct was 0.97 (Researchers' Pilot Study, 2022). The respondent's level of perception of preeclampsia was measured on a 42-rating scale (Researchers' Pilot Study, 2022) Data collected was analysed using IBM SPPS (version 23). Descriptive statistics was implored while results were presented in frequency tables, mean, standard deviation and correlation. All statistical level of significance was set at p < 0.05.

#### B. Research Setting

The study was conducted in the Eastern Senatorial district, Osun State, Nigeria. The state of Osun is located in southwest Nigeria. Ogun State forms the boundary of this state in the south, while Kwara state is the southern boundary. Oyo State forms the western boundary while both Ondo and Ekiti form the Eastern boundary. The state spans a total land area of 9,026 kilometers, stretching from 7.5629 degrees north to 4.5200 degrees east (National Population Commission of Nigeria, 2016). The state of Osun is organized into three federal senatorial districts, each with three administrative zones. Namely, Osun Central, Osun East, and Osun West respectively. The population for the state is 4,705,600 (National Population Commission of Nigeria, 2016). Osun East senatorial district in Osun-State Comprises of ten (10) LGAs.

# C. Sampling Technique

A multi-stage sampling technique was used to select the respondents from the target population. The ten Local Governments in Osun East Senatorial district of Osun-State were used as a strata. Seven Local Government Areas were selected using simple randomization. The Local Government areas were giving unique code to ensure that every LGA had an equal chance to being selected. Using the list of Health facilities in each of the seven selected LGAs; twenty-three public Health facilities and two private Health facilities were selected via simple randomization from the selected Health Facilities. A systematic sampling method was used to select Pregnant Women from the public and the Private Health Facilities. Proportionate sampling was used to determine the number of pregnant women to interview per facility. Systematic sampling interval was used to determine the specific respondents to interview at the various health facilities.

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#### D. Data Collection

A 38-item structured questionnaire was used to gather information from the respondents. The questionnaire contains four sections (A, B, & C). Section A focus on the respondents' demographic data, such as age, ethnicity, educational status, religion, marital status, number of children, parity, and occupation. Section B focus on the perception of the women on pre-eclampsia such as I can have hypertension during pregnancy, My church/Mosque belief that everything about hypertension in pregnancy is spiritual, Poverty caused by malnutrition are the risk factors for hypertension, Strained relationship are the risk factor for hypertension, Hypertension in pregnancy occurs as a result of thinking too much, Evil spirit is the major cause of Hypertension in pregnancy, Hypertension in pregnancy is an ailment brought on suddenly by stress causes by household problems, Unborn child can suffer from long term illnesses such as excess body fat, high blood sugar and diabetes, , Unborn child can also develop coronary heart disease, Hypertension in pregnancy can cause liver damage, Hypertension in pregnancy can cause complication such as memory loss, confusion, loss of energy, blindness and severe headaches, Hypertension in pregnancy can lead to still birth, those who have the following are the only group who can develop multiple gestation, other health conditions such as urinary tract infection, sickle cell and family history, Pregnant woman can die as a result of hypertension during pregnancy, Unborn child can die due to hypertension during pregnancy.

The last section which is section C focused on the management practices such as asking if the pregnant women have had hypertension during pregnancy, if yes, what did I attend clinic immediately; when I had you do, preeclampsia I make use of medications prescribed in the hospital; do you have hypertension; If yes, what are you doing about it; I make use of medications prescribed in the hospital; I make use of herbal treatment; I am not on medication I make use of herbal treatment; I pray to God and that is all; I check my blood pressure most often; I call the attention of my clinic when my blood pressure rise at any point in time whether clinic day or not. I can survive without future complications if I choose to do the right thing, My baby can survive if I visit clinic regularly and do all what I am asked to do, Health care is expensive, I wish to be attending antenatal clinic regularly but I don't have the money, distance is a major problem. The reliability index of the administered questionnaire was 0. 97 Cronbach's Alpha.

#### E. Measures

## > Perception Scores

The respondents' perception of pre-eclampsia measured on a 42-point rating scale showed a mean score of  $15.4 \pm 4.18$ . The respondent's perception of pre-eclampsia was then categorized into two by  $50^{th}$  percentile based on biomedical view into high perception and low perception. Those who scored less than equal to  $21 (\leq 21)$ , were regarded as having low level of perception of pre-eclampsia while those who scored greater than 21-42 (> 21-42) were regarded as having high perception level of pre-eclampsia

## ➤ Management Scores

Management scores of respondents were computed regarding less than 9 poor practices, 9-18 moderate and greater than 18-27 as good management practices.

#### F. Data Analysis

Statistical Package for Social Sciences (SPSS) version 2023 was used for the data entry and analysis. Data was computed to determine the women level of knowledge, perception and management practices of pre-eclampsia. Bivariate analysis was carryout to identify the relationship between the level of perception and management practices.

#### G. Ethical Consideration

Ethical clearance for this study was obtained from Babcock University Research and Ethical Committee. Ethical clearance was also sought from Osun-state ministry of health. Upon permission to carry out this study, a structured questionnaire (adapted from different recent published literature) was distributed among the respondents. Inform consent was sought from the respondents before administering the questionnaire. The content form included introduction of the research and the purpose of the study. The respondents were informed about their individual rights as participants. This include right to privacy to ensure that they were not forced to participate in the study, Right to formal consent( ensured the consent form was read and duly to ensure their permission was sought before interview, Right to confidentiality to ensure that the information provided were treated with utmost confidentiality and respect throughout the study.

#### III. RESULTS

# A. Socio-demographic Characteristics of the Respondents

Table 1 presents Socio-demographic characteristics of participants. The mean age of the respondents was  $31.5 \pm 5.7$  years with more than half (52.6%) of the respondents within the age of 26-34 years. Majority (85.2%) of the respondents were Yoruba ethnic group while 84.3% of the respondents were Christians. Less than half (46.2%) of the respondents had secondary educational level. Majority (81.3%) of the respondents were married. less than half (48.9%) of the respondents had one child. All (100%) of the respondents were multiparous and less than half (40.8%) of the respondents were self-employed.

Table 1 Socio-Demographic Characteristics of the Respondents

Socio-demographic variables for consideration	Respondents N=331			
•	Frequency(n)	Percentage (%)		
Age (in years) mean age = $31.54 \pm 5.7$ years.				
17-25	5	15.4		
26-34	174	52.6		
35-43	149	31.1		
44-52	3	0.9		
Ethnicity				
Yoruba	282	85.2		
Igbo	44	13.3		
Hausa/Fulani	2	0.6		
Other	3	0.9		
Religion				
Christianity	279	84.3		
Islam	48	14.5		
Traditional	4	1.2		
Educational Status				
Non-formal	27	8.2		
Primary	47	14.2		
Secondary	153	46.2		
University	104	31.4		
Marital Status				
Single	24	7.3		
Married	269	81.3		
Divorced	21	6.3		
Separated	10	3.0		
Widowed	7 2.1			
Number of Children				
One	162	48.9		
Two	93	28.1		
Three	44	13.3		
Greater than Three	32	9.6		
Parity				
Multiparous	331	100		

Research question 2: What is the Perception of pregnant women concerning Pre-eclampsia in Osun State, Southwest Nigeria?

Table 2 Respondents Perception of Preeclampsia

Perception Variables	Respondents in this study; N=331			31
	SA (%)	A (%)	D (%)	SD (%)
I can have hypertension during pregnancy	54(16.3)*	127(38.4)	96(29.0)	54(16.3)
My church/mosque belief that everything about hypertension in	51(15.4)	87(26.3)	133(40.2)	60(18.1)*
pregnancy is spiritual				
Malnutrition are the risk factors for hypertension in pregnancy	37(11.2)	122(36.9)	127(38.4)	45(13.6)*
Strained relationship lead to hypertension in pregnancy	65(19.6)*	138(41.7)	104(31.4)	24(7.3)
Hypertension in pregnancy occurs as a result of thinking too much	68(20.5)	172(52.0)	72(21.8)	19(5.7)*
Evil spirit is the major cause of Hypertension in pregnancy	47(14.2)	93(28.1)	137(41.4)	54(16.3)*
Hypertension in pregnancy is an ailment brought on suddenly by	46(13.9)	118(35.6)	129(39,0)	38(11.5)*
stress causes by household problems				
Unborn child can suffer from long term illnesses	62(18.7)*	113(34.1)	13(34.1)	43(13.0)
Unborn child can also develop coronary heart disease	32(9.7)*	117(35.3)	141(42.6)	41(12.4)
Hypertension in pregnancy can cause liver damage	48(14.5)*	18(35.6)	134(40.5)	31(9.4)
Hypertension in pregnancy lead to complications	67(20.2)*	124(37.5)	116(35.0)	24(7.3)
Hypertension in pregnancy can lead to still birth	52(15.7)*	49(45.0)	96(29.0)	34(10.3)
Only pregnant women who had multiple gestations, urinary tract	48(14.5)*	117(35.3)	119(36.0)	47(14.2)
infection, sickle cell and family history could develop hypertension				
Unborn child can suffer from long term illnesses such as excess body	`158(47.1)*	113(34.1)	62(18.7)	-
fat, high blood sugar and diabetes.				

Unborn child can also develop coronary heart disease (A disease of	182(55.0)*	117(35.5)	32(8.7)	-
the blood vessels supplying the heart muscle and hypertension later in				
life				
Hypertension in pregnancy can cause liver damage	106(32.0)*	144(43.5)	65(19.6)	16(4.8)
Pregnant women can die as a result of Hypertension during pregnancy	105(31.7)*	155(46.8)	54(16.3)	17(5.1)
Unborn child can die due to Hypertension during pregnancy	69(20.8)*	133(40.2)	102(30,8)	27(8.2)
I can survive without future complications if I choose to do the right	106(32.0)*	144(43.5)	65(19.6)	16(4.8)
thing.				
My baby can survive if I visit clinic regularly and do all what I am	105(31.7)*	55(46.8)	54(16.3)	17(5.1)
asked to do.				
Health care is expensive	74(22.4)	97(29.3)	120(36.3)	40(12.1)*
I wish to be attending antenatal clinic regularly but I don't have the	48(14.5)	99(29.9)	43(43.2)	41(12.4)*
all the money				
Distance is the major problem	52(15.7)	74(22.4)	156(47.1)	49(14.8)*
I don't like the attitude of the Healthcare providers	40(12.1)	67(20.2)	170(51.4)	54(16.3)*

Source: Researcher's Findings, 2022

As shown in Table 2, less than half (38.4%) of the respondents agreed that they could have hypertension during pregnancy. less than half (40.2%) of the respondents disagree that their church/mosque belief that everything about hypertension in pregnancy is spiritual. Above a quarter (38.4%) of the respondents disagreed that malnutrition are the risk factors for hypertension in pregnancy. Less than half (41.7%) of the respondents agreed that strained relationship lead to hypertension in pregnancy. More than half (52%) of the respondents agreed that hypertension in pregnancy occurs as a result of thinking too much. Less than half (41.4%) of the respondents disagreed that evil spirit is the major cause of hypertension in pregnancy. Less than half (39%) of the respondents disagreed that hypertension in pregnancy is an ailment brought on suddenly by stress causes by household problems. Less than half (34.1%) of the respondents agreed that unborn child could suffer from long term illnesses.

Less than half (35.3%) of the respondents agreed that unborn child can also develop coronary heart disease. Less than half (35.8%) of the respondents agreed that hypertension in pregnancy could cause liver damage. Less than half (37.5%) of the respondents agreed that hypertension in pregnancy leads to complications. Less than half (45%) of the respondents agreed that hypertension in pregnancy can lead to still birth. Less than half (35.3%) of

the respondents agreed that only pregnant women who had multiple gestation, urinary tract infection, sickle cell and family history could develop hypertension. Less than half (47/1%) of the respondents strongly agreed that unborn child can suffer from long term illnesses such as excess body fat, high blood sugar and diabetes. More than half (55%) of the respondents strongly agreed that unborn child can also develop coronary heart disease and hypertension later in life

Less than half (41.1%) of the respondents agreed that pregnant women could die as a result of Hypertension during pregnancy. Less than half (40.2%) of the respondents agreed that unborn child can die due to hypertension during pregnancy. Less than half (43.5%) of the respondents agreed that they could survive without future complications if they choose to do the right thing.

Less than half (46.8%) of the respondents agreed that their baby could survive if I visit clinic regularly and do all what they were asked to do. Less than half (36.3%) of the respondents agreed that health care is expensive. Few (29.9%) of the respondents agreed that I wish to be attending antenatal clinic regularly but they don't have the all the money. Above a quarter (29.9%) of the respondents agreed is the major problem they don't like the attitude of the Healthcare providers.

Table 3 Proportion of Respondent's Perception of Pre-eclampsia

Total Obtainable Score (42)	Respondents in this study; N=331		
Perception	Frequency	Percentage (%)	
Low (≤21)	290	87.6	
High (>21-42)	41	12.4	
Mean±SD	$15.4 \pm 4.18$		

Source: Researcher's Findings, 2022

Furthermore, the respondents' perception of pre-eclampsia measured on a 42-point rating scale showed a mean score of  $15.4 \pm 4.18$ . The respondent's perception of pre-eclampsia was then categorized into two by  $50^{th}$  percentile based on biomedical view into high perception and low perception. Those who scored less than equal to 21 ( $\leq 21$ ), were regarded as having low level of perception of pre-eclampsia while those who scored greater than 21-42 (>

21-42) were regarded as having high perception level of preeclampsia. Majority (87.6%) of the respondents had low perception of pre-eclampsia

#### B. Management practices of pre-eclampsia

The primary treatment for pre-eclampsia is either to deliver the baby or manage until the best time to deliver the

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baby and/or the best time for the mother when she can no longer continue to nurture the pregnancy.

Table 4 presents the respondent's management practices of pre-eclampsia. This was measured on a 27-point rating scale showed a mean score of 9.2  $\pm 3.41$ . The respondent's management practices toward pre-eclampsia

was categorized into three; poor  $(\leq 9)$  moderate (< 9-18), good (< 18-27). Researcher categorized respondents' management practices into three, based on the experience of the pregnant women in the study location

Most (61.6%) of the respondents had good management practices of pre-eclampsia.

Table 4 Respondents Management Practices of Pre-eclampsia

	Not at all (%)	Rarely (%)	Occasionally	Very often
			(%)	(%)
I make use of medications prescribed in the hospital	3(23.1)	5(38.5)	1(7.6)	4(30.8)
I make use of herbal treatment	7(53.8)	3(23.1)	=	3(23.1)
I am not on any medication	11(84.6)	1(7.7)	=	1(7.7)
I pray to God and that's all	9(69.2)	3(23.1)	=	1(7.7)
I check my blood pressure	5(38.5)	4(30.8)	3(23.0)	1(7.7)
I call the attention of my clinic when my blood	8(61.5)	2(15.4)	1(7.7)	2(15.4)
pressure rise at any point in time whether clinic day				
or not.				

As shown in table 3, out of those who had pre-eclampsia in pregnancy presently 30.8% reported that they used the prescribed medication, 23% reported that they used herbal treatment, 7.6% reported that they were not using any medications, 7.6% that they prayed to God, and 15.3% reported that they visit the hospital whether is their clinic days or not.

# C. Relationship between Perception and Management of Pre-eclampsia

Table 5 Table Pearson Correlation Showing the Relationship between Perception and Management of Pre-eclampsia

Perception	R	Sig. (2 tailed)
Management of Pre-eclampsia	0.138	0.012

#### ➤ H0<sub>2</sub>:

There is no significant relationship between perception towards pre-eclampsia and the management of pre-eclampsia. The result of the analysis showed that there was a statistically significant relationship between perception and management of Pre-eclampsia (r = 0.138 p = 0.012) (See, Table 4.9). Hence, the null hypothesis is hereby rejected. Thus respondent's management of pre-eclampsia is dependent on their perception of pre-eclampsia.

# IV. DISCUSSION

# A. Socio-demographic Characteristics of the Respondents

The result of the analysis showed that the respondents were between the ages of 18-52 years, with a mean and standard deviation 31.54±5.7 years. This finding is similar to the result of Fondo et al, (2019) where they reported similar mean age. However, the mean age is slightly different from the mean age reported by a study done by Olaoye et al., 2019 where they reported a mean age and standard deviation of 35.45±7.62. The result showed that most of the respondents were from the Yoruba ethnic group and majority were Christians. This may be because the study is done in Southwest Nigeria were the Yoruba's domicile who practiced Christianity.

# B. Perception of Pre-eclampsia

The present study showed that most of the respondents had low perception towards Pre-eclampsia. This is contrary to the findings of Okhae & Arulogun, 2015 where they reported that 44.1% of the respondents had good perception, 41.2% had fair perception while 14% of the respondents had poor perception. This finding supports the findings of Nabulo et al., 2021 where they reported that Women perception of pre-eclampsia was invent from the component of convulsion with other conditions like spiritual beliefs and high blood pressure.

# C. Management of Pre-eclampsia

The result showed good management of pre-eclampsia among the respondents. Less than half reported that they used the prescribed medication, few reported that they used herbal treatment and reported that they were not using any medications, 7.6% that they prayed to God, and 15.3% reported that they visit the hospital whether is their clinic days or not. This finding is similar to the result of (Nabulo et al., 2021) in Sokoto.

#### V. CONCLUSION

The level of perception of pre-eclampsia among pregnant women in Eastern senatorial district is low. This underscores the need for intensified effort to improve perception of pre-eclampsia among women for improved pregnancy outcomes. Education could be through contextual health education at ANC, media channels or through national education programmes.

Health education regarding preeclampsia risk factors, symptoms, and complications should be emphasized at times of antenatal care visits by health workers.

Improving the numbers of ANC visits and encouraging facility delivery are important measures to improve women's knowledge of preeclampsia.

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