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Knowledge of Pre-Eclampsia among Pregnant Women attending Adeoyo Maternity Hospital, Yemetu Ibadan North Local Government Area, Nigeria

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Abstract: ***This study investigated the knowledge of pre-eclampsia among pregnant women attending antenatal clinic in Adeoyo Maternity Hospital, Yemetu, Ibadan, Nigeria. A descriptive cross-sectional design was adopted employing the mix method among 400 respondents using semi-structured questionnaire containing a 19-point knowledge scale and focus group discussion guide. Knowledge scores ≤ 6, >6-12, and >12 were categorised as poor, fair and good, respectively. Quantitative data were analysed using descriptive and Chi-square statistics at p<0.05, while qualitative data were analysed using themes. Age of respondents was 28.6±5.2 years, 92.0% were married and 42.0% had heard about pre-eclampsia with antenatal clinic (37.1%) topping the list of sources of information. Respondents with poor, fair and good knowledge relating to pre-eclampsia were 14.0%, 41.2% and 44.1%, respectively. Significant association exists between respondent's age and knowledge of pre-eclampsia in an increasing order with gaps in knowledge of pre-eclampsia. Health education interventions such as health talks focusing on creating awareness, improving knowledge of preeclampsia are herby advocated.***

Keywords: Pre-eclampsia knowledge, Antenatal care, pregnant women

1. Introduction

Globally, approximately 63,000 women die each year of preeclampsia which accounts for an estimated nine percent of maternal deaths in Asia and Africa, and about one quarter of maternal deaths in Latin America and the Caribbean[1]. Preeclampsia a pregnancy-related hypertensive disorder occurring usually after 20 weeks of gestation, is one condition if left untreated, it progresses to eclampsia[2]. Despite the effort of government and other developmental agency to cut maternal deaths rate in Nigeria, yet the burden of maternal morbidity and mortality is still on the increase with the country contributing about 15% to global maternal deaths at ratio of 554 per 100,000 live births[3] to 630 per 100,000 live births[2]. Evidence from literature revealed that hypertensive disorders of pregnancy – pre-eclampsia and eclampsia accounts as the second leading cause of maternal morbidity and mortality in Nigeria presiding post partum hemorrhage, sepsis, and obstructed labor ([17 18 19 20]). Previous studies however revealed obstetric emergencies such as preeclampsia often arise as a result of poor knowledge, inadequate information on appropriate time to seek help and sometimes on where to seek help[5,6]. In Nigeria, the incidence of pre-eclampsia is reported to be nine (9) to ten (10) percent of the pregnancy-induced hypertension cases. It affects mostly the primigravidae after the 20th to 24th weeks of gestation, and frequent occurrences are often seen at term[7, 1]). This study was therefore designed to investigate the level of knowledge of pre-eclampsia among pregnant women attending Adeoyo Maternity teaching hospital Yemetu, Ibadan, Nigeria.

2. Methods

Study site

Adeoyo Maternity Teaching Hospital, Yemetu Ibadan was founded in 1927 and it is one of the biggest maternity hospitals in the capital city of Ibadan, Oyo State, South Western Nigeria. The hospital is located in Ibadan North Local Government Area, which has a population of about 300,937 people of which 150,837 are males and 149,100 are females. On a monthly basis, about 1,600 women register for antenatal care and about 3,800 women attend the immunization clinic. The Obstetrics and Gynecology Department has its clinic days from Monday through Friday every week from 9 am. Its location is accessible by taxi and buses from most part of the city and entire state. Average daily attendance by pregnant women at this clinic is more than 100/day.

Study design

A descriptive cross-sectional design was adopted and a systematic random sampling technique was used to select 400 consenting respondents from the antenatal clinic of the hospital.

Sampling procedure

The research assistants, with the principal investigator were involved in the data collection. Which was interviewer administered. Data collection took place mostly in the morning when it was easier to get the participants at the antenatal clinic; they were collected in Yoruba language. Short briefing sessions were held at the end of each day where the day's work was reviewed and the next plan of action disseminated to the research assistants. The data collected were checked for completeness and accuracy in the

field. Serial number was assigned to each questionnaire copy for easy identification

Instrument for data collection

Semi-structured interviewer administered questionnaire was used to elicit information on respondents' socio-demographic characteristics, Knowledge of Pre-eclampsia using 19-point scale. Knowledge scores ≤ 6, >6-12, and >12 were categorised as poor, fair and good, respectively. Four Focus Group Discussion (FGD) sessions were conducted using Focus Group Discussion guide.

Validity and Reliability

To ensure validity of the instrument, relevant literatures were consulted. A draft of the instrument was developed and was reviewed by the supervisor and experienced researchers in the field of public health and in data processing. Instruments were also subjected to a peer review. For reliability of the instrument used, 10% of the instrument was pre-tested in a place with similar demographic characteristic as the study area, Adeoyo Hospital, Ring Road, Ibadan. The following steps were taken to ensure reliability of instruments

Data analysis

SPSS Version 15 was used for data entry, cleaning and analysis. To better determine respondent's level of awareness and knowledge of pre-eclampsia descriptive statistics was done coupled with Chi Square analysis which was used to test hypothesis to determine the association between some selected dependent and independents variable at a 0.05 P-Value. Qualitative data were analysed using thematic approach.

Ethical consideration

Prior to the commencement of this study the research protocols was submitted to Oyo State Ethical Committee for ethical approval, Also permission was obtained from the Management of Adeoyo Maternity Teaching Hospital before Data collection was done in the Centre. Informed consent forms were given to the participants which were both in verbal or a written form. Participation in the study was voluntary. The nature of the study, benefits and objectives were explained to the participant and were also assured that the information given will be treated with utmost confidentiality. However, participants were given equal opportunities to withdraw their consent freely during the study. Confidentiality of each participant was maximally maintained during and after the collection of her information. Finally, participant's right of confidentiality and the right of responsibilities of the respondents was maintained throughout the course of the study.

3. Results

Results on socio demographic characteristics are displayed on the Table 1. Age of respondents ranged from 16 to 43 years while the mean age was 28.6±5.2. The gestational age of pregnancy ranged from one week to 36 weeks with a mean gestational age of 24±2.0 weeks. More than half (57.0%) of respondents resided in urban area; 28%, semi urban; and 14%, rural. In terms of level of education, 40.0% of respondents' attained secondary education, 94.0% were Yorubas, 39.0% were traders and 57% were Muslims.

Table 1: Socio-demographic characteristics of respondents

Age years	F	%
16-20	24	6.0
21-25	94	23.5
26-30	144	35.0
31-35	104	26.0
35-40	31	7.8
40-45	3	0.8
Parity		
Primigravida	138	34.5
Primipara	139	34.8
Multipara	120	29.6
Granmultipara	3	0.9
Trimester		
1st Trimester	23	5.8
2nd Trimester	128	32.0
3rd Trimester	240	62.2
Tribe		
Yoruba	376	94.0
Igbo	15	15
Hausa	3	0.85
Cross River	3	0.8
Edo	2	0.5
Tiv	1	0.3
Occupation	156	39.0
Trading	129	32.3
Self Employed	71	17.8
Civil Servant	26	6.5
Unemployed	10	2.5
Private	8	2.15
Students		

Awareness of Preeclampsia among Respondents

Less than half (42.0%) of the respondents reportedly had heard about pre-eclampsia. Main sources of information included antenatal clinic (77.1%), mass media (37.1%), 30.0% from their work place, 26.5% from newspaper, 23.5% from their spouse, 17.6% from the internet, 16.5% from seminar, 15.3% heard about the health condition from the mosque while 12.9% from the church and another 9.5% heard it from their relatives.

This was corroborated by the findings from focus group discussions were participants stated that.

I am aware that pregnant woman can have pre-eclampsia; it may be due to stress or the fact that the person had it before or the person may not have it at all. I am aware but I don't know the cause one of the participant commented.

I have heard about it before; I came to the clinic during my first pregnancy and I was told I had pregnancy-induced hypertension and because of that, I was told I cannot deliver my baby without going through operation. So I had my first child with Caesarean Section"

Knowledge of pre-eclampsia

From the study, questions were asked on the definition of pre-eclampsia. Sixty respondents (35.5%) knew the correct definition of pre-eclampsia, 36 (21.2%) disagree with the correct definition by saying no while 74 (43.5%) respondents said they did not know the definition of pre-eclampsia as shown in Table 4.3 below. Questions were

also raised on the causes of pre-eclampsia during pregnancy. Majority 138 (81.2%) got it wrong while 32 (18.8%) knew the correct answer that caurse of pre-eclampsia is unknown.

Respondents' knowledge on contributing factors that could worsen hypertension in pregnancy was assessed, questions were asked about a set of predisposing dietary and social habits that may induce or worsen pregnancy induced hypertension as indicated in Table 2 below. More than half of the respondents (62. 4%) knew that high salt diet can induce hypertension in pregnancy, while 21.8% did not know, (36.5%) knew that high cholesterol diet can induce hypertension in pregnancy while majority (42.9%) did not know that high cholesterol is a predisposing factor to pre-eclampsia. Above two third (77.1%) of the respondents knew that stressful situations can worsen pregnancy induced hypertension, while (10.6%) did not know, only 32.4% knew about it while in terms of social habit that could induce pre-eclampsia majority of the respondents 41.2% did not know that cigarette smoking could induce the health condition, Respondents were asked, if drinking alcohol is a contributing factor to pre-eclampsia (42.9%) said yes to drinking alcohol.

Table 2: Level knowledge of preeclampsia among respondents

Variable	**F**	**%**
Pre-eclampsia is high blood pressure that occurs in pregnancy after 20 weeks of gestation characterised with proteinuria, oedema and elevated blood pressure reading above 140/90 mmHg		
Yes	60	35.5
No	36	21.2
Don't Know	74	43.5
Factors contributing to preeclampsia among pregnant women		
High Salt diet		
Yes	106	62.4
No	27	15.9
Don't know	37	21.8
High Cholesterol diet		
Yes	62	36
No	35	20.6
Don't Know	73	42.9
Stress		
Yes	131	77.1
No	21	12.4
Don't know	18	10.6
Lack of Exercise		
Yes	107*	62.9
No	32	18.8
Don't know	31	18.2
Smoking Cigarettes/snuff		
Yes	66	38.8
No	34	20.0
Don't Know	70	41.2
Sleeplessness		
Yes	127	74.7
No	20	11.8
Don't know	23	13.5
Worrying		
Yes	126	74.1
No	15	8.8
Don't know	29	17.1
Multiple Gestation		
Yes	55	32.4
No	54	31.8
Don't know	61	35.9
Drinking Alcohol		
Yes	73	42.9
No	20	11.8
Don't Know	77	45.3

Though the focus group discussants could not give the meaning and the exact causes of pre-eclampsia, they however noted their own understanding of the health condition. Typical responses which relate to the meaning of preeclampsia include:

''Pre-eclampsia means when someone has high blood pressure during pregnancy which can be caused by too much thinking especially about how to get money for treatment''

"Like I have said, I have read it in a book before, what they said about it is that the blood pressure will be higher than what it should normally be''

''It is not good for a pregnant woman to be taking too much salty food and food that lacks vitamins. It is not also good for a pregnant woman to be smoking and drinking''

Reasons cited for the causes of the health condition ranges from stress and Anxiety drinking of alcohol, cigarette smoking, eating too much starchy food

''One of the major reasons I feel is the cause of preeclampsia is stress and anxiety regarding financial issues and fear of delivery''

''To me, I think taking too much salty food can cause preeclampsia, and then a pregnant woman that is smoking is at the risk of preeclampsia. The starchy food too must not be too much.''

''I don't think eating starchy food can cause anything to pregnant woman, but pregnant woman that is smoking and drinking is killing herself gradually. Taking too much salt is not too good because it can cause preeclampsia''

''Smoking cigarette also can cause preeclampsia. People who are drinking alcohol too can be exposed to preeclampsia''

Knowledge of health condition that could predispose pregnant women to preeclampsia

Responses displayed on the table 3 below indicate conditions that could predispose pregnant women to pre-eclampsia. Above forty percent (44.1%) knew that caution is needed when diagnosed with chronic hypertension, 42.9 % knew that they have to be careful when carrying multiple pregnancies and 40.0% knew that caution is needed in case of obesity.

In terms of action to be taken when diagnosed to be preeclamptic, 95.3% knew that they had to attend clinic on schedule dates. However 91% knew that they had to rest for

two (2) to four (4) hours a day if diagnosed with pregnancy-induced hypertension. Respondents were asked on how they could prevent or reduce maternal mortality from preeclampsia as illustrated on table 4.6 below. Respondents were asked whether better health services could reduce preeclampsia-caused maternal mortality. In response, 94.9% agreed with their choice of "yes"; 2.5% responded with "no" while 2.5% did not have any response. When asked concerning availability of periodic health care services, 81.8% confirmed with "yes", and 4.7% responded with "no" while 6.5% did not know

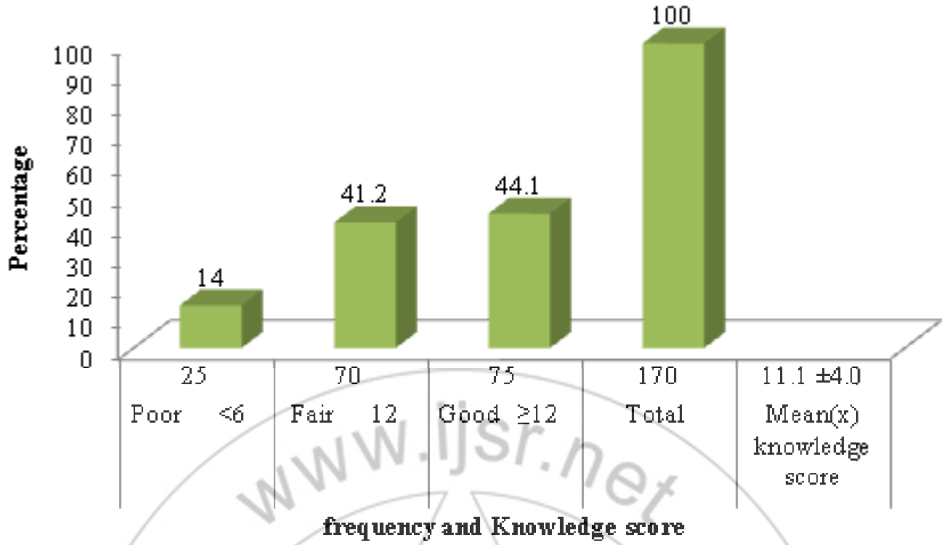

Table 3: Test of Association between dependents variable and independents variable

Characteristics	*Knowledge of preeclampsia*			*Total*	X^2	*P-Value*
Age	Poor	fair	Good		11.036	0.004
≤ 24yrs	10(34.5%)	10(34.5%)	9 (31.0%)	19(100)		
>24 yrs	15(10.6%)	60(42.6%)	66(46.8%)	141(100)		
Educational Level						
Primary Education	3(14.3%)	8(57.1%)	4 (28.6%)	15 (100)	9.421	0.151
Secondary School	15(23.24%)	23(35.9%)	26(40.6)	64 (100)		
Tertiary	8(8.8%)	39(37.7%)	44(39.6%)	91 (100)		
Location						
Urban	11(44.0)	9(36.0)	5(20.0)	25(100)		
Rural	40(57.1)	10(14.3)	20(28.6)	70(100)	8.33	0.800
Semi Urban	43(57.3)	9(12.0)	23(30.7)	75(100)		

4. Discussion

The objective of this study was to investigate the level of knowledge of preeclampsia among pregnant women attending Adeoyo Maternity Teaching. From the study it was revealed that less than half of the respondents were aware of pre-eclampsia as against majority who were not aware. This was contrary to findings from a recent survey of 1,591 in the United State of America[13] were majority of respondents were aware of pre-eclampsisa and knew that it is extremely serious, and even life-threatening for mother and babies. The reason behind this could be that United States a developed nation may have better structure in educating and creating awareness among pregnant women on the health condition, unlike Nigeria which is a developing nation. In line with this current finding on awareness of pre-eclampsia, a study in Brazil on maternal perception of premature birth and the experience of pre-eclampsia among 28 pregnant women in a facility specialized in high-risk pregnancies in the state of *Rio Grandedo Notre*, North-eastern Brazil however reported poor awareness[11]. It reported twenty analysis units showed they were unaware of this condition during prenatal care. They only became aware after hospitalization or by the imminent premature delivery; the reason behind this could be Brazil with similar setting like Nigeria is also a developing nation of the world.

Several dimensions were used to ascertain knowledge of pre-eclampsia among respondents ranging from definition of the health condition, causes, predisposing factors. Questions pertaining to women's understanding of the term pre-eclampsia were asked less than half knew that Pre-eclampsia is high blood pressure that occurs in pregnancy after 20 weeks of gestation characterised with proteinuria, oedema and elevated blood pressure reading above 140/90 mmHg. This current finding was contrary to a related study conducted in Zimbabwe[14] where majority of the respondents knew the correct definition of pre-eclampsia, the reason behind this could be that pregnant women had received detailed health talk on the health condition during antenatal clinic. However, a large proportion of the participants lacked more specific knowledge that the exact cause of pre-eclampsia is unknown. Evidence from study has been presented indicating that the exact cause of pre-eclampsia is unknown and may be determined by a single recessive gene[2]. This shows that whatever one does if the person has

gene to develop preeclampsia it will developed the health condition since it has a genetic cause as the problem will be inherent in the person

On contributing factors to preeclampsia more than half knew that high salt diet can predispose one to pre-eclampsia, this evidence indicts that a reasonable percentage never knew that high salt diet can predispose one to preeclampsia. Continued reinforcement on the dangers of high salt intake in predisposing to pregnancy induced hypertention in some susceptible patients is necessary so that this kind of knowledge does not become extinct with time. Chockalingham et al[3] concurred and stated that people should refrain from adding salt when cooking and at the table. However, more knowledge needs to be imparted on other predisposing causes of preeclampsia such as multiple pregnancies and cigarette smoking, high cholesterol diet. Majority, more than half did not know that multiple pregnancies, high cholesterol, smoking cigarette, excessive alcohol intake can predispose to preeclampsia. This finding was supported by a related in study conducted in Zimbabwe by[14] where few respondents had good knowledge on contributing factors to pre-eclampsia.

On knowledge of condition that could predispose pregnant women to preeclampsia, in this current study it was documented that only less than half of the respondents knew that they have to take cautions in health conditions like Obesity, and chronic hypertension respectively. This lack of knowledge particularly for obesity might prove to be detrimental to health since most Africa women might take obesity to be an acceptable prestigious sign of being well or looked after[1] hence they are reluctance in losing weight. However weight reduction of 5 to 10% is recommended in obese people [8]

Generally, participants therefore had good knowledge on pre-eclampsia since majority had highest score. This current finding was in line with finding by [9] in Indian on assess the knowledge regarding pre-eclampsia and its self care measure among pregnant women.

5. Conclusion and Recommendation

There is no gainsaying that the findings from this study have health promotion and education implications and simply the need for health education interventions directed at tackling the health condition among pregnant women. The responsibility of health education focuses on the modification of people's behavior and antecedents (WHO, 1998; Green and Kreuter, 1991). Also, helping people develop practices that ensure the best possible well-being (WHO, 1998) which could be individual or collective. Health education principles, strategies and methods can be employed to address the negative findings identified in this study. Firstly this study identifies below average level of awareness of pre-eclampsia among respondents and good knowledge of preeclampsia among those who had ever heard about preeclampsia. This overall poor awareness and in-depth understanding of the health condition signifies that there could be an increase in maternal mortality and perinatal morbidity arising from preeclampsia since majority of the respondent were not aware of the health condition. In light of this, there is need for health promotion and education strategies to address this phenomenon. To achieve this pregnant women tutor (Public health nurses) at the antenatal clinic, therefore need to continue strengthening awareness and knowledge of preeclampsia in their various health facilities. The health education talk during antenatal clinic among other things should focus on following: knowledge with inclusion of a general overview on definition of pre-eclampsia, causes, predisposing factors, resting techniques, food and social habit to avoid in the prevention of the health condition. Maternal child health (MCH) education for nurses and midwives should include latest recommended evidence based literature on preeclampsia. This could foster channels on reaching pregnant women on awareness, knowledge on the health condition and how to prevent it.

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