



## **Influence of Socio-demographic Variables on Knowledge of Pregnancy Induced Hypertension among Pregnant Women in Ekiti State Nigeria**

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### **Authors' contributions**

*This work was carried out in collaboration between all authors. Authors EOA and SOA designed the study and wrote the protocol. Author SEO carried out the literature review, performed the statistical analysis and wrote the first draft of the manuscript. All authors read and approved the final manuscript.*

### **Article Information**

DOI: 10.9734/AIR/2016/30754

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Complete Peer review History: <http://www.sciencedomain.org/review-history/17919>

**Original Research Article**

**Received 28<sup>th</sup> November 2016**

**Accepted 12<sup>th</sup> February 2017**

**Published 22<sup>nd</sup> February 2017**

### **ABSTRACT**

**Aim:** This study was conducted to assess knowledge of pregnancy induced hypertension among pregnant women in Ekiti state and to determine the influence of socio-demographic variables on their knowledge.

**Study Design:** Descriptive research design was adopted in this study.

**Place and Duration of Study:** Study was conducted in selected health facilities within the three senatorial districts in Ekiti State between April and June 2016.

**Methodology:** Three hundred pregnant women were randomly selected from six health facilities within the three senatorial districts of Ekiti State. Data was collected using an 18-item self-structured questionnaire. Data collected were subjected to analysis using SPSS version 16. Demographics were analysed using frequency counts and percentages while inferential statistics of

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linear regression was used to determine the influence of socio-demographic variables on knowledge at 0.05 level of significance.

**Results:** 56.6% of the pregnant women had good knowledge and all the socio-demographic variables tested jointly contributed to the pregnant women's knowledge ( $R=.348$ ,  $R^2 = .121$ ,  $F(4, 295) = 6.85$ ,  $p < .05$ ). Source of information had the highest contribution on respondents' knowledge of pregnancy induced hypertension ( $\beta = .33$ ,  $t(295) = 5.46$ ,  $p < .05$ ).

**Conclusion:** Health education intervention to improve the knowledge of pregnancy induced hypertension among pregnant women in Ekiti State is required.

*Keywords: Knowledge; pregnancy; hypertension; pregnant women; age.*

## 1. INTRODUCTION

The period of pregnancy is the most delicate period in the lifetime of women of child bearing age. It is a period often characterised by conditions that pose serious threats to the life of both the pregnant women and their intending babies. Over 585,000 women worldwide die annually from childbirth complications with 99% of such deaths occurring in the developing countries [1]. One of such medical conditions that pose serious threat to the life and health of pregnant women is pregnancy induced hypertension (PIH).

PIH is a complication that results in the development of hypertension after about twenty weeks of gestation in a woman who had previously been normotensive [2]. It is often characterised by blood pressure reading higher than 140/90 mm Hg, oedema [3], protein in the urine, severe headaches, blurry vision, spots in the eyes, severe pain over the stomach, under the ribs and decrease in the amount of urine [4]. PIH is a major cause of maternal and peri-natal morbidity and mortality in developing countries including Nigeria [5,6]. PIH alone contributes about 15% of the total death throughout the world [1] and it is one of the causes of pre-term delivery [7]. It has also been reported that PIH can lead to long-term health problems like chronic hypertension, kidney failure, or nervous system disorders.

Several studies have reported prevalence rates of PIH in different parts of Nigeria. One of such researches reported a prevalence of 20.8% of gestational hypertension in Benin City [8], another reported prevalence of PIH as 32.7% in South-Eastern Nigeria [9], and a study in Sokoto State, North-Western Nigeria reported a prevalence of 17% [10]. Several risk factors have been associated with pregnancy induced hypertension. These include carrying the first pregnancy especially after 20<sup>th</sup> to 24<sup>th</sup> weeks of

gestation, not having adequate knowledge of the condition and how it can be prevented [3], genetic factor like having a female relative with PIH, carrying multiple birth, having kidney disease before pregnancy, being a teenager and being over 40 years [11].

To reduce the prevalence of PIH, knowledge of: signs and symptoms, predisposing factors and preventive measures is highly essential. This will give room for early recognition and prompt management. Maternal mortality can be prevented by early recognition of complications and proper treatment [12]. If women should have a good knowledge of the signs and symptoms of the pregnancy induced hypertension through antenatal health talk, workshops [3] and other means of getting such information like radio, television and in religious organisations, a good number of them will immediately go to the hospital without delay for prompt attention [3].

Review of literature seems to suggest that previous studies on PIH have somewhat been centred on assessment of prevalence and resultant effects. Only few attempts have been made in previous studies to assess knowledge of PIH and factors associated with this knowledge among pregnant women in Ekiti State Nigeria. This study therefore aimed to fill this gap.

The objective of conducting this study was to assess the knowledge of pregnant women in Ekiti State on pregnancy induced hypertension and to determine the influence of socio-demographic variables on their knowledge.

## 2. MATERIALS AND METHODS

### 2.1 Study Participants and Procedure

To assess knowledge of pregnancy induced hypertension among pregnant women in Ekiti State Nigeria, a descriptive study design was adopted.

The participants for this study consisted of 300 pregnant women aged 15-40 years, selected randomly from six health facilities within the three senatorial districts in Ekiti State. First, a town each was randomly selected from the three senatorial district in Ekiti State (Ado-Ekiti (central), Ido-Ekiti (North) and Ijan Ekiti (South). From each of the selected towns, two health facilities were selected (one basic health facility and one secondary health facility) to make a total of six health facilities. Fifty pregnant women were then selected from each of the health facilities to make a total of three hundred pregnant women.

Relevant data for this study were obtained with the use of self-structured questionnaire. The questionnaire consists of two sections. Section 1 elicited information on socio-demographic variables of respondents (age, religion, parity, prior information and source of information) while section 2 consists of items related to knowledge of PIH. The questionnaire was of two versions (English and local language) and was administered with the aid of trained research assistants. Ethical clearance was obtained from Hospital Ethics Committee prior to the administration of the questionnaire and only the pregnant women who consented to participate in the study formed the respondents for the study. The data was collected between April and June 2016.

The questionnaire for data collection in this study consisted of 18 items with a dichotomous response format of 'Yes or No'. The items include 5 items on knowledge of health effect of PIH, 2 items on knowledge of signs and symptoms, 4 items on knowledge of preventive measures and 7 items on knowledge of predisposing factors to PIH. Respondents were requested to indicate their knowledge or otherwise of each item by either ticking 'Yes' (2) or 'No' (1). The range of score for the items was 18-36. The mean score was 32.34 with a standard deviation of  $\pm 3.87$ . Respondents with scores below 28 were categorised as having poor knowledge, those with scores between 28 and 32 were categorised as having fair knowledge while those having 33 and above were categorised as having good knowledge respectively.

## 2.2 Statistical Analysis

Data were analysed using SPSS version 16. Descriptive statistics of frequency counts and

percentages were used to analyse demographic variables while inferential statistics of t-test for a variable with two groups, Kruskal-Wallis test for more than two groups and multiple linear regression were used to determine the influence of socio-demographic variables on knowledge of PIH at 0.05 alpha level.

## 3. RESULTS

### 3.1 Demographic Characteristics of Respondents

Table 1 shows the percentage distribution of respondents. Respondents between 15-19 years constitute less than 10% of the sample size; those of the traditional religion constitute 7%, those having less than three children 57.3%, those with prior information on PIH 85.3% and those with multiple sources of information, 18%.

### 3.2 Differences in Knowledge of PIH among Respondents

Statistical analysis shows that respondents between 15 and 19 years have non-statistically significant higher knowledge score than other age groups, those of the traditional religion have statistically significant higher knowledge score than those in the other religion, respondents with prior information about PIH have statistically significant higher score of knowledge of PIH than those without prior knowledge while those having more than one source of information on PIH have statistically significant higher knowledge score than those with single source (Table 1).

### 3.3 Percentage Distribution of Respondents' Knowledge of PIH

Table 2 presents the percentage distribution of respondents with respect to their knowledge of PIH. Except for the knowledge of signs and symptoms where only less than 50% of the respondents had good knowledge, over 70% of the respondents displayed good knowledge of each of the PIH items assessed.

### 3.4 Respondents' Level of Knowledge of PIH

Categorising the level of knowledge of respondents, just a little above 50% (56.6%) have good knowledge of PIH (Table 3).

### 3.5 Contribution of Socio-demographic Variables on Respondents' Knowledge of PIH

Analysis of the joint contribution of the socio-demographic variables on knowledge, presented in Table 4 shows that all the variables jointly influenced knowledge of PIH among respondents ( $R^2=.121$ ) indicating that 12.1% of variance in knowledge of PIH presented among respondents was accounted for by all the socio-demographic attributes tested. However, of all the socio-demographic variables, source of information had the highest and statistically significant contribution ( $\beta=.33$ ) as presented in Table 5. Findings of this study further revealed that statistically significant difference exist in knowledge of PIH among respondents based on their source of information (Table 6). Respondents with multiple sources of information (combination of sources for example, hospital and health talk, research and hospital, hospital and radio and so on) had the highest mean score on knowledge of PIH as shown in Table 6.

## 4. DISCUSSION

Finding of this study, that over 50% of the respondents have good knowledge about PIH, is similar to that reported by previous studies [3,13]. However considering the enormous impact of PIH on maternal and child health, and the need

for every woman of reproductive age to be aware of signs and symptoms, predisposing factors and other factors associated with PIH it can be observed that the level of knowledge reported in this study is not high enough. Effort is therefore required to be directed towards health education intervention to improve the knowledge of PIH especially that of signs and symptoms of PIH among women of reproductive age in Ekiti State. Education about the warning symptoms is important because early recognition may help women receive treatment and prevent worsening of the disease [14].

One of the factors that influenced the knowledge of PIH among pregnant women in this study is probably because, a large percentage (85%) of these women had obtained prior information about PIH. This finding is similar to that of a previous study [3] and this, according to previous submission [3], will help pregnant women to seek prompt medical attention.

The findings that source of information contributed highly significantly to the knowledge of PIH of respondents, is worthy of note. How and where people get information about a thing matters a lot in determining the content, authenticity and adequacy of such information. In this study respondents with multiple sources of information have higher score of knowledge of PIH than those with single source of information.

**Table 1. Differences in knowledge of PIH based on socio-demographic attributes**

Variable	Items	Frequency	%	Knowledge median	Min	Max	Mean rank
Overall respondents		300	100	33	18	36	
Age	15-19 years	25	8.3	35	25	36	174.94
	20-29 years	112	37.3	33	18	36	139.50
	30-39 years	110	36.7	32.5	19	36	138.35
	>40 years	53	17.7	36	25	36	149.35
Religion	Christianity	198	66.0	33	18	36	144.44
	Islam	81	27.0	34	22	36	150.83
	Traditional	21	7.0	36	15	36	206.36*
Parity	0-2	172	57.3	33	18	36	148.59
	3-4	103	34.4	34	19	36	147.84
	>4	25	8.3	35	27	36	174.58
Prior information about PIH	Yes	255	85.0	-	-	-	33.03*
	No	45	15.0	-	-	-	28.42
Source of Information	Hospital	121	41.7	33	25	36	111.58
	Radio	31	10.3	33	26	36	123.61
	Television	30	10.0	31.5	26	36	103.45
	Church/Mosque	12	4.0	28.5	22	36	57.75
	Research	4	1.3	33.5	33	36	138.88
	Multiple sources	54	18.0	36	30	36	199.35*

\* Significant difference ( $p<0.05$ )

This is an indication that various avenues like mass media, hospital setting, print media, religious organizations among others need to be adopted in passing across information regarding PIH in order to ensure that people get adequate knowledge.

**Table 2. Level of knowledge of PIH among respondents**

Level of knowledge	Freq	%
Poor	35	11.7
Fair	95	31.7
Good	170	56.6

Similar to a previous study also [3], over 80% of the respondents knew that regular attendance of

antenatal clinic for antenatal care could prevent PIH. This is an indication of the authenticity of the prior information about PIH that the pregnant women claimed to have got. Early booking and regular attendance of antenatal clinic will pave way for early identification of women at risk for pregnancy-induced hypertension and this may help prevent some complications of the disease [14].

The role of good antenatal care in promoting pregnancy outcomes cannot be over-emphasized. Good antenatal care links the woman and her family with the formal health system, increases the chance of using a skilled attendant at birth and contributes to good health through the life cycle [15]. On the other hand,

**Table 3. Joint contribution of socio-demographic variables on knowledge of PIH**

Model	R	R square	Adjusted R square	Std. error of estimate	F	p-value
1	.348 <sup>a</sup>	.121	.103	3.053	6.852	.000

a. predictors (constant) age, religion, parity, prior information, source of information

**Table 4. Independent contribution of socio-demographics on knowledge of PIH**

Model	Unstandardized coefficients B	Std error	Standardized coefficients beta	t	Sig.
(Constant)	26.802	3.615		7.413	.000
age	-.185	.220	-.057	-.844	.400
religion	.126	.314	.024	.399	.690
Parity	.000	.332	.000	.000	1.000
Prior information	2.568	1.776	.086	1.446	.149
Source of information	.535	.098	.330	5.462	.000

Dependent variable: knowledge of PIH

**Table 5. Differences in knowledge of PIH based on source of information**

Source of information	ANOVA				
	Sum of squares	df	Mean Square	F	Sig.
Between groups	687.650	5	137.530	17.522	.000
Within groups	1962.209	250	7.849		
Total	2649.859	255			

**Table 6. Post hoc analysis on differences in knowledge based source of information**

Source of information	N	Hospital	Radio	Television	Health talk	Research	Multiple sources	Mean
Hospital	125				*		*	32.47
Radio	31				*		*	32.71
Television	30						*	31.80
Health talk in Church/Mosque	12	*	*				*	29.00
Personal research	4							34.00
Multiple sources	54	*	*	*	*			35.76

inadequate care during this time breaks a critical link in the continuum of care, and affects both women and babies [15]. All hands must therefore be on deck to encourage early bookings of pregnant women at antenatal clinics and regular attendance of such clinics for early detection and management of such a menace as PIH.

## 5. CONCLUSION

Based on the findings of this study, it can be concluded that the level of knowledge of pregnant women in Ekiti State on pregnancy induced hypertension is just a little above average and this knowledge was greatly influenced by their source of information on the condition. Health care providers should mount intervention strategies using multiple measures to facilitate improvement in knowledge of pregnancy induced hypertension among pregnant women.

## 6. LIMITATIONS OF THE STUDY

In this study, certain key elements such as: the study level of the respondents, their marital status and the respective number of prenatal visits were not assessed. In addition item to identify respondents based on first and second parity were not separated in the questionnaire thus making it difficult to differentiate between the two groups. Similarly, the instrument for data collection was solely questionnaire with univocal answers of yes or no. These might have affected the quality of information obtained in this study. However future studies could make up for these limitations by putting the identified lapses into consideration.

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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