

## Knowledge Regarding Pregnancy Induced Hypertension among Pregnant Women Attending in a Tertiary Hospital

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### ABSTRACT

**Introduction:** Pregnancy induced hypertension is a leading cause of maternal and fetal morbidity and mortality worldwide. It poses risks to both the mother and the baby, associated with premature delivery, growth limitations, placental abruption and even maternal mortality. Therefore, the study aims to find out the level of knowledge regarding pregnancy induced hypertension among pregnant women attending in tertiary hospital.

**Methods:** A descriptive cross sectional study design with a purposive sampling technique was used to assess the knowledge regarding pregnancy induced hypertension among pregnant women attending antenatal outpatient department, Tribhuvan University Teaching Hospital. The total sample size was 195. Face to face interview technique was used to collect the data. Analysis was done by using the Statistical Package for Social Science 16 version using descriptive statistics and inferential statistical test (chi-square test and fisher's exact test).

**Results:** Less than one fifth (17.9%) of respondents had adequate level of knowledge, less than half (47.7%) had moderately adequate knowledge level and more one third (34.4%) had inadequate knowledge level regarding pregnancy induced hypertension. The level of knowledge was significantly associated with occupation ( $p=0.019$ ) and source of information ( $p=0.001$ ).

**Conclusion:** This study revealed that only one fifth pregnant women had adequate knowledge on pregnancy induced hypertension; and knowledge is significantly associated with occupation. Therefore, awareness raising program need to be conducted in the antenatal clinic to increase the knowledge level of majority of pregnant women.

**Keywords:** Knowledge, Pregnant women, Pregnancy induced hypertension

### INTRODUCTION

Pregnancy-induced hypertension (PIH) is high blood pressure during pregnancy, including gestational hypertension, pre-eclampsia, and eclampsia. These conditions cause maternal and fetal harm. PIH can result in edema, protein in urine, headaches, vision problems, and reduced urine output. Low- and middle-income countries are most affected.<sup>1-3</sup> It also pose a serious public health concern.<sup>4</sup> Among all pregnancies 8 to 10% suffer from hypertensive disorder during pregnancy and it raises the risk

of cardiac and renal issues, placental problems, preterm birth, and stillbirth.<sup>5</sup> Early detection and institutional management can lower maternal and fetal mortality and morbidity.<sup>6</sup> Women with hypertensive disorder were at higher risk of adverse pregnancy outcomes.<sup>7</sup> It is very important to emphasize educational programs on PIH to pregnant women to enable for reduction in complications of PIH and nurses have important role in educating and providing information regarding PIH.<sup>8</sup> According to a meta-analysis of prevalence studies the prevalence of pre-eclampsia and eclampsia in Nepal were

2.6% and 0.5% respectively. The women who are young and women with poor antenatal visit had increased risk of PIH.<sup>9</sup> Therefore, the researchers were interested to find out the level of knowledge regarding pregnancy induced hypertension among pregnant women attending in tertiary hospital.

## METHODS

The descriptive cross-sectional study design was used to find out the awareness of pregnant women regarding pregnancy induced hypertension at Tribhuvan University Teaching Hospital (TUTH) Kathmandu. The required sample size for this study was calculated using Cochran, 1977 formula and with the 0.14 prevalence. The non-probability purposive sampling technique was used for the selection of 195 pregnant women in their second and third trimester. The women who were in first trimester were excluded. After reviewing related literature using various online and offline resources a structured interview questionnaire for socio demographic characteristic and obstetrical factors of study participants was developed.

Knowledge level of the pregnant women was assessed by self-developed pretested tool through face to face interview schedule. The research instrument had two parts; part I related to socio-demographic and health related characteristics and part II related to knowledge on pregnancy induced hypertension. There were 16 questions that included 6 multiple choice questions (MCQ) and 10 multiple response questions (MRQ). For each correct response 1 score and incorrect response 0 score was assigned. The maximum possible score was 64. Level of knowledge was measured by calculating the total score which ranged from 0 to 64 and classified into following 3 categories namely- 76-100%: Adequate knowledge, 51-75%: Moderately Adequate Knowledge, and 0-50%: Inadequate Knowledge.<sup>10</sup>

The content validity of the instrument was established on the basis of extensive literature review. The research instrument was pretested among 20 pregnant women who met the inclusion criteria at ANC of TUTH for the reliability of instrument and excluded from study population.

Ethical clearance was obtained from the Institutional Review Committee (IRC) of Institute of Medicine (Ref. 42 [6-11] E2), and concerned authority. The written informed consent was obtained from each respondent before data collection. Confidentiality of the information was maintained by not disclosing the information of the respondents with others and using the information only for the purpose of study. The dignity of the respondents was maintained by giving right to reject or discontinue from the research study at any time. Privacy was maintained by interviewing respondents in a separate room of the hospital.

Data was collected by using Nepali version questionnaire through in-person interview technique. Data collection was done for 6 days per week except in public holidays. The data were analyzed using the IBM SPSS version 16.0. Descriptive statistics (frequency, percentage, median and interquartile range) and inferential statistics (chi square test and fisher's exact test) was used.

## RESULTS

In this study, the median age of pregnant women was 27 years. Among them 85.6% were Hindu, 51.8% were Brahmin/Chhetri, 46.2% had attended secondary education, 50.3% were homemakers, 50.8% were primigravida and 51.8% belonged to single family. About obstetric characteristics, 26.2% had family history of pregnancy induced hypertension, among multigravida, 13.5% had history of pregnancy induced hypertension and 74.4% had no family history of hypertension.

**Table 1: Respondents' Knowledge on Management of Pregnancy Induced Hypertension (n=195)**

Variables	Number	Percentage
<b>Risk Factors*</b>		
Elevated BP is considered as hypertension	159	81.5
Pregnancy can increase hypertension	145	74.4
PIH develops after 20 weeks of gestation	46	23.6
Previous history of PIH	103	52.8
Obesity	102	52.3
<b>Sign and Symptoms*</b>		
Persistent severe headache	156	80.0
Swelling of hand and face not relieved by rest	98	50.3
<b>Management*</b>		
Should visit hospital if warning signs occurs	171	87.7
Regular Antenatal Checkup	155	79.5
Exercise and physical activity	137	70.3
Balanced Diet with Adequate Protein and Calcium	150	76.9
Minimizing stress	162	83.1

\* Multiple response

Regarding the risk factors of pregnancy induced hypertension; 81.5% responded as elevated blood pressure, 74.4% answered as pregnancy can increase hypertension, 23.6% responded as PIH develops after 20 weeks of gestation, 52.8 % said as previous history of PIH, and 52.3% responded as obesity about the risk factors of

pregnancy induced hypertension. Similarly, 80.0% said persistent severe headache and 50.3% answered that swelling of hand and face not relieved by rest were warning signs and symptoms of PIH. Additionally, 87.7% responded as should visit hospital if warning signs occurs, 79.5% responded as regular antenatal checkup, 70.3% responded as calcium, 83.1% responded as minimizing stress [Table-1].

**Table 2: Respondents' Level of Knowledge on Pregnancy Induced Hypertension (n=195)**

Level of knowledge	Number	Percentage
Adequate	35	17.9
Moderately adequate	93	47.7
Inadequate	67	34.4
Total	195	100.0

Out of 195 pregnant women, 17.9% had adequate knowledge, 47.7% had moderately adequate knowledge level and 34.4% had inadequate knowledge level regarding pregnancy induced hypertension [Table-2].

There was a statistically significant association between level of knowledge and occupation (p=0.019) and level of knowledge and source of information from mass media (p=0.000) of the respondents. [Table 3].

**Table 3: Association between the Level of Knowledge and Selected Socio-demographic Variables of Respondents (n=195)**

Variables	Level of knowledge		Chi square	p-value
	Moderately adequate and Adequate	Inadequate		
<b>Age</b>				
<27 years	67(62.0%)	41(38.0%)	1.394	0.238
>27 years	61(70.1%)	26(29.9%)		
<b>Ethnicity</b>				
Brahmin/Chhetri	70 (69.3%)	31 (30.7%)	1.248	0.264
Others*	58(61.7%)	36(38.3%)		
<b>Religion</b>				
Hindu	112(67.1%)	55(32.9%)	1.047	0.306
Others **	16(57.1%)	12(42.9%)		
<b>Occupation</b>				
Service holder	41(78.8%)	11(21.2%)	5.482	<b>0.019</b>
Others***	87(60.8%)	56(39.2%)		
<b>Family type</b>				
Single	71(70.3%)	30(29.7%)	2.014	0.156
Joint	57(60.6%)	37(39.4%)		
<b>Family history of HTN</b>				
Yes	32 (64.0%)	18 (36.0%)	0.080	0.777
No	96 (66.2%)	49 (33.8%)		
<b>Family history of PIH</b>				
Yes	32 (62.7%)	19 (37.3%)	0.257	0.612
No	96(66.7%)	48 (33.3%)		
<b>Level of education</b>				
Up to secondary level	72(61.0%)	46(39.0%)	2.833	0.092
Graduation and above	56(72.7%)	21(27.3%)		
<b>Source of information</b>				
At least one mass media	93 (76.9%)	28(23.1%)	17.793	<b>0.000</b>
Other than mass media	35 (47.3%)	39 (52.7%)		

Note: Adequate include moderately adequate and Adequate; Chi square test: Significant ( $p < 0.05$  at 95% confidence interval), \*Janajati, Dalit, Madhesi & Muslim; \*\*Buddhism, Christianity & Islam; \*\*\*Homemaker, Business, Agriculture and Others

**Table 4: Association between the Level of Knowledge and Obstetric variables (n=195)**

Variables	Level of knowledge		Chi square	p-value
	Adequate	Inadequate		
<b>Gravida</b>				
Primi	62(62.6%)	37(37.4%)	0.8109	0.368
Multi	66(68.8%)	30(31.3%)		
<b>Gestational age</b>				
Second trimester	71(68.2%)	33(31.7%)	0.683	0.409
Third trimester	57(62.6%)	34(37.4%)		
<b>History of PIH(n=96)</b>				
Yes	54(65.1%)	29 (34.9%)	3.884	0.058*
No	12(92.3%)	1(7.7%)		

\*-Fishers exact test significance level at <0.05

There was no significant association between level of knowledge with gravida, gestational age and history of pregnancy induced hypertension and age of the pregnant women with *p* value. 368, .409 and .058 respectively [Table-4].

## DISCUSSION

In the present study level of knowledge was classified into three categories where less than one fifth (17.9%) of the respondents had adequate level of knowledge, less than half (47.7%) had moderately adequate level of knowledge and more than one third (34.4%) had inadequate level of knowledge regarding pregnancy induced hypertension. The findings of this study was similar with study conducted in India where less than one fifth (14%) of the pregnant women had good knowledge, more than half (55%) had average and less than one third (31%) had poor knowledge regarding pregnancy induced hypertension.<sup>8</sup> Similarly, the findings were resembled with another study conducted in Ghana where less than one fifth (15.4%) of pregnant women have adequate knowledge on pregnancy induced hypertension.<sup>11</sup> This may be due to the similarity of socio-demographic characteristics. In present study less than half (47.7%) of the respondents had average knowledge on pregnancy induced hypertension which is lower than the study conducted in India where majority (63.4%) of the respondents had average knowledge on pregnancy induced

hypertension.<sup>6</sup> Likewise, in present study more than one third (34.4%) of the respondents had inadequate knowledge on pregnancy induced hypertension which is similar with the study done Karaikal revealed that more than one third (36%) of the respondents had inadequate knowledge on pregnancy induced hypertension.<sup>10</sup> This result was lower than the study conducted in Iraq where nearly half (46.9%) had weak knowledge.<sup>12</sup> and the study conducted in UAE were almost all (90%) of the respondents had inadequate knowledge on pregnancy induced hypertension.<sup>13</sup>

In present study majority (66.7%) of the respondents knew about the normal blood pressure. This result was similar with the study done in India which showed more than half (53%) of the respondents knew about normal blood pressure<sup>8</sup>. Similarly, in this study almost one fourth (23.6%) of the respondents mentioned that pregnancy induced hypertension develops after 20 weeks of gestation. This result was similar with the study done in Bangladesh and Africa revealed that less than one fourth (23.5%) and (22.1%)of the respondents believed that pregnancy induced hypertension can start after 20 weeks of gestation respectively.<sup>14,15</sup>

In this study majority (74.4%) of the respondents mentioned that pregnant women can have hypertension during pregnancy which is lower than the study done in Bangalore showed that majority (90.7%) of the respondents knew

hypertension can occur in pregnancy.<sup>16</sup> This result was higher than the study conducted in Ethiopia where less than half (38.4%) of the respondents thought that pregnant women can develop pregnancy induced hypertension.<sup>15</sup>

In present study more than half (52.8%) of the respondents mentioned that history of pregnancy induced hypertension is one of the risk factor of PIH. This result was similar with the study done in Ghana showed that less than half (44.6%) of the respondents mentioned that previous history of PIH predisposes PIH.<sup>11</sup> Similarly, more than half (52.3%) of the respondents knew that obesity was the risk factor of PIH. This result was similar with the study done Nigeria revealed that less than half (49.5%) of the respondents said that overweight was the cause of PIH.<sup>17</sup> In this study less than half (35.4%) of the respondents mentioned that first pregnancy was the risk factor of PIH. This result was higher than the study done in Nigeria showed that less than one fourth (19%) of the respondents said that women with first pregnancy can have PIH.<sup>17</sup>

In present study most (80%) of the respondents knew that persistent severe headache was the sign and symptom of PIH. This result was similar with the study done Nigeria showed that majority (76%) of the respondents knew that frontal headache was the sign of PIH<sup>17</sup> and study done in Ghana showed that majority (61.8%) of the respondents knew that headache was the sign or symptom of hypertensive disease of pregnancy.<sup>11</sup> In present study more than half (50.3%) of the respondents knew that swelling of hand and face not relieved by rest was the sign and symptom of PIH. This result was similar with study finding from Ghana where majority (60.2%) of the respondents knew that swelling of face and feet was the sign or symptom of hypertensive disease of pregnancy.<sup>11</sup>

In present study most (87.7%) of the respondents mentioned that one should immediately go to hospital if danger signs of PIH occur. This result was similar with the study finding of Ethiopia where most (89.9%) of the respondents told that they should go to health facility if PIH associated symptoms occur.<sup>15</sup> Similarly, in present study most (79.5%) of the respondents mentioned that

regular antenatal checkup is one of the preventive measures of pregnancy induced hypertension. This finding was similar with the study done in Tigray Regional State, Ethiopia where most (76.1%) of the respondents knew that regular antenatal checkup can be used as early detection of pregnancy induced hypertension.<sup>15</sup>

In this study the majority (70.3%) of the respondents believed that regular physical exercise and activity can prevent pregnancy induced hypertension. This result was higher than the study done in Bangladesh where nearly half of the respondents (48%) agreed that regular exercise can prevent PIH.<sup>14</sup> Another study of Ghana showed that less than half (39.8%) of the respondents said that exercise during pregnancy can prevent Hypertensive Disorder in Pregnancy (HDP)<sup>11</sup> and a study conducted in Ethiopia revealed that more than half (58.7%) of the respondents told that regular exercise can prevent PIH.<sup>15</sup> Likewise, in present study majority (70.3%) of the respondent mentioned that having balanced diet with adequate protein and calcium helps to prevent PIH. This result was higher than the study of Ghana where more than half (57.4%) of the respondents said that eating healthy diet can prevent HDP.<sup>11</sup> Similarly, in present study most (83.1%) of the respondents mentioned that minimizing stress can prevent PIH. This result was higher than the study of Nigeria showed that more than half (56%) of the respondents mentioned that avoiding stress can prevent HDP.<sup>17</sup>

In this study there was significant association between knowledge and occupation which was similar with the study of Bangladesh which showed significant association between knowledge and occupation.<sup>14</sup> On the other hand, this result was contradicted with the study done in India showed no significant association between knowledge and occupation.<sup>16</sup> The study revealed that there was significant association of level of knowledge with source of information from mass media ( $p=0.001$ ).

## CONCLUSION

Less than one fifth of the respondent had adequate knowledge and four fifth had no

adequate level of knowledge regarding pregnancy induced hypertension. The level of knowledge regarding pregnancy induced hypertension among respondents was significantly associated with occupation and source of information. Therefore, the awareness raising program need to be conducted in the antenatal clinic to increase the knowledge level of majority of pregnant women.

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