



# Assessment of Knowledge and Practices on Hypertension in Pregnancy among Pregnant Women at Hoima Regional Referral Hospital, Hoima District- Western Uganda 2022

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## ABSTRACT

This study aims to evaluate knowledge and practices on hypertension during pregnancy among pregnant women at Hoima Regional Referral Hospital's (HRRH) antenatal clinic and maternity ward. The study used a cross-sectional design with both qualitative and quantitative approaches. The study population included pregnant women attending the antenatal clinic and maternity ward, as well as those who consented and completed the questionnaire. The study uses a simple random sampling technique to reduce bias and ensure credibility. Both electronic and non-electronic data are stored with codes to enhance confidentiality. Data analysis involved categorizing, organizing, manipulating, and summarizing data to answer research questions. The study revealed that 50% of pregnant women in HRRH had never heard of hypertension during pregnancy. Stress was found to be the most common cause of hypertension during pregnancy, but not the primary cause. 31% of pregnant women had poor knowledge on signs and symptoms of hypertension, such as headaches, nausea, and vomiting. Over half of the respondents did routine medical checkups. 47% did not attend antenatal care every month, while 32% did not go for routine checkups. Majority of respondents, were below secondary level of education. Recommendations include strengthening health education activities, emphasizing early recognition and readiness for better management of pregnancy-induced hypertension, taking antenatal care seriously, encouraging hospital deliveries, and increasing awareness through hospital and community education programs.

**Key words:** Pregnancy, Hypertension, Ante-natal, Maternity, Knowledge

## INTRODUCTION

Hypertension is the most common medical disorder encountered during pregnancy. A recent report highlighted hypertensive disorders as one of the major causes of pregnancy-related maternal deaths in the United States [1]. According to WHO over 99% of pregnancy related deaths occur in low- and middle-income countries including Uganda. In Uganda 336 women die from pregnancy and child birth related causes per 10,000 live births [2]. Hypertensive disorders of pregnancy encompass chronic hypertension, gestational hypertension (new hypertension without proteinuria), pre-eclampsia (new hypertension with proteinuria or end-organ damage after 20 weeks of gestation [3], and eclampsia. The majority of morbidity and mortality is associated with pre-eclampsia and eclampsia. Complications of hypertension in pregnancy remain the most common direct cause of maternal deaths [4]. Hypertension is the most common medical disorder encountered during pregnancy. Significant advances in our understanding of preeclampsia, a form of hypertension unique to pregnancy, have occurred in recent years [5,6]. Hypertension is considered worldwide as one of the common complications of pregnancy. Preeclampsia, in particular, is associated with substantial risk to both the mother and the fetus. Several risk factors have been recognized to predict risk for preeclampsia [7]. However, at present no biomarkers have sufficient discriminatory ability to be useful in clinical practice, and no effective preventive strategies have yet been identified [8]. Hypertensive disorders in pregnancy (HDP) are the greatest single cause of maternal mortality worldwide [9]. It is the most common medical disorder in pregnancy and 7 to 10% of all pregnancies are complicated by hypertension and 2 to 8% by preeclampsia [10]. HDP are an important cause of foeto-maternal morbidity and mortality, particularly in developing countries. Most of the complications caused by HDP may be reduced by early detection and proper management [11]. According to the study, pre-Eclampsia ward received 520 women with severe eclampsia 132 with Eclampsia 14 post-partum Eclampsia and 12 maternal deaths. It was

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noted that the frequent stock out of essential drugs such as magnesium sulphate is the biggest challenge the hospital faces in managing women with Eclampsia [12]. Globally, 14% of all maternal deaths is due to Hypertensive disorders, approximately 42,000 each year [13]. Nearly all of these deaths occur in low-resource settings (99%), with death in high-income settings being very rare [13]. The prevalence of Eclampsia globally is reported to be 0.3%. This is based on secondary analysis of a World Health Organization (WHO) multi-country survey that included 875 cases of Eclampsia, collected over a short duration from only secondary or tertiary hospitals [14]. In Africa Pre-Eclampsia occurs in 10% of pregnancies which is significantly higher than the global average of approximately 2% [15]. Roughly 4 in every 100 women develops problem of high blood pressure and leaky kidney during pregnancy. Black women are more prone to get high blood pressure than white women [16]. According to WHO over 99% of pregnancy related deaths occur in low- and middle-income countries including Uganda. In Uganda 336 women die from pregnancy and child birth related causes per 10,000 live births. In Uganda; prevalence was highest in central uganda 28.5%, followed by eastern region 26.4%, western region at 26.3% and northern region at 23.3% [2]. There is need and reason to assess the Factors associated with hypertension in pregnancy among pregnant women at HRRH and also to understand why it still remains a problem with high mortality in pregnant women despite the fact that antenatal care services are available at HRRH. The study aims to evaluate knowledge and practices on hypertension during pregnancy among pregnant women at Hoima regional referral hospital's antenatal clinic and maternity ward. Specific objectives include assessing knowledge on hypertension among pregnant women in the ANC and maternity ward, and assessing practices in these areas.

## **METHODOLOGY**

### **Study design**

A cross-sectional study design involving both qualitative and quantitative approaches was used.

### **Study area.**

Hoima Regional Referral Hospital, General outpatient departments, In Hoima district.

### **Study population.**

The study population comprised of patients seeking health services from Hoima Regional Referral Hospital, Hoima district.

### **Inclusion criteria.**

The study included pregnant women attending ANC and In Maternity ward at Hoima regional referral Hospital and those in gestational age above but equal to 16 weeks.

Pregnant women who were available at the time of data collection.

Pregnant women who consented and finish answering the questionnaire.

### **Exclusion criteria**

Pregnant women not in ANC and not admitted at Maternity ward in Hoima regional referral hospital and those below 16weeks of gestational age.

Pregnant women who declined to participate in the study were not included.

Pregnant women who were not available at the time of data collection were not included in the study.

Pregnant women who consented but withdraw before they finish answering the questionnaire were not also included in the study.

### **Sample size determination.**

A sample size was determined

$$n = \frac{Z^2pq}{d^2}$$

n = desired sample size

Z = Standard normal deviation usually set at 1.96

p = the proportion of study population that are at risk of preeclampsia (6.25%)(WHO 2010)

q = 1-p

d = Amount of error (0.05 levels).

By Substitution

$$\frac{1.96^2 \times 0.0625 \times 0.9375}{0.05 \times 0.05} = 100 \text{ women}$$

Correcting for poor response, we adjusted The Sample size by 10 and it becomes 110 women.

### **Sampling technique**

The study was carried out among pregnant women in Hoima Regional Referral Hospital, for those patients who will meet inclusion and exclusion criteria. Simple random sampling technique was used whereby the researcher had to cut many small pieces of paper. The papers contained either "yes" or "no". The respondents who consented to participate were invited one by one to pick a paper. Only clients who picked papers with YES word were made

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to participate in the study and those who picked a NO word were reassured and respondents were chosen at random in order to reach up to the number required to participate in the study. This sampling technique was used because it will reduce on biasness and ensures credibility.

#### **Research instruments**

The questionnaire included: semi-structured questions for demographic data, likert scale for measuring knowledge and checklist for measuring practices were provided to the participants. The Likert Scale had positive statements which corresponded to the range of responses from where the participants had to choose their appropriate response that is strongly disagree with the scale of (0), disagree with the scale of (1), agree with the scale of (2) moderately agree with the scale of, (3) strongly agree with the scale of (4). The statement/questions concerning practices had 'yes' or 'no' responses and participants were allowed to answer according to their understanding.

#### **Data collection procedure**

Data collection was followed by consent from the responsible Head of department Hoima Regional Referral Hospital. To the participants in the study, data was collected using a questionnaire. The interview was conducted among pregnant women in Hoima Regional Referral Hospital. Responses of the participants were filled into the questionnaire by the researcher and research assistants. This method was used because it allowed for accurate records of responses from both illiterate and literate respondents.

#### **Data management**

Questions in the tools were be pre-coded to help the researcher to get uniform qualified data, and coding frames shall be met, facilitated by the codes given to responses in the tool (questionnaire). This made the process of presentation and analysis easy. The research instruments were checked for errors and omissions in order to ensure consistency, completeness and accuracy. This was done in the field before going to respondents. Both electronic and non-electronic data was used to store data with codes so that it could be assessed by unauthorized persons, and help to enhance confidentiality.

#### **Data analysis**

The service of a statistician was utilized and after all the Participants were interviewed, the researcher collected all the questionnaires and checked for completeness and accuracy. Data was then entered on spreadsheets using micro soft excel and later transferred to SPSS to describe data and identify any significant differences between two groups. Descriptive summary statistics and graphical summaries were presented using variant tables, pie-charts, and put in representative figures to ease the process of interpretation of findings. Chi-square tests of association was conducted to assess dependence relationships among potential factors, where a 5% level of significance was used.

#### **Ethical considerations**

A letter of introduction was obtained from Kampala International University western campus, faculty of clinical medicine and dentistry that introduced the researcher to the head of department Hoima Regional Referral Hospital and got permission to carry out the study. In addition, the researcher explained the purpose of the study to each study participant after which an informed consent was obtained from the participants before participating in the study. In order to ensure confidentiality, names of the respondents were not taken and the information given during the interview sections was not released to anyone. To further gain the trust and safeguard the privacy of respondents, the interviews was done privately and in secured areas of the health centers.

#### **Dissemination of results**

On completion of the report, the research was disseminated to, Kampala International University Faculty of Clinical Medicine and Dentistry Western Campus, and a copy was left with the Hospital Administrator, Hoima district authorities, and a copy also remain with the researcher for reference.

**RESULTS**

**Social demographic characteristics of participants.**

**Table 1: Showing Socio-demographic data. (N=110)**

<b>Variable</b>	<b>Category</b>	<b>Frequency (N)</b>	<b>Percentage (%)</b>
<b>Age.</b>	11-20	26	24
	21-30	62	56
	31-40	21	19
	Above 40	1	1
	Can't read & write	12	11
<b>Educational level</b>	Primary school	34	31
	Secondary school certificate	33	30
	Diploma	20	18
	Farming	11	10
<b>Occupation</b>	Business	17	15
	Student	37	34
	Civil servant	4	3
	Daily laborer	13	12
	House wife.	12	11
<b>Religion</b>	Catholic	27	25
	Anglican	38	35
	Muslim	44	40
	Others	18	16
<b>Tribe</b>	Munyoro	10	9
	Others	90	82
		20	18

According to table 1 above, results show that, majority 62(56%) of the respondents were aged 21 to 30 compared others, more so, in addition, Nearly half 44(40%) of the respondents were Anglicans compared to the Catholics, Muslim and others, furthermore, most 34(31%) of the respondents had primary as their highest level of education compared to 33(10%) who had highest level of education at secondary, and also majority 87(79%) of the respondents were married compared to 8(7%) who were divorced, more than half 90(82%) of the respondents were Munyoro by tribe compared to 20(18%) who were not Munyoro by tribe.

**Table 2: Showing Obstetric data (N=110)**

<b>Variables</b>	<b>Category</b>	<b>Frequency (N)</b>	<b>Percentage (%)</b>
<b>Parity</b>	Primegravida	29	27
	One child	31	28
	Multigravida	50	45
<b>Gestational age</b>	16-20	29	26
	21-29	40	36
	30-34	18	16
	35-40	23	21

Table 2 above shows that most 50(45%) of the women were multigravida compared to 27% primegravida, 28% had one child and also the highest number 40(36%) of the respondents were at gestational between 21-29 weeks compared to other gestational age groups, the lowest number being at gestational age of 35-40 which were 23(21%).

**Knowledge on hypertension among pregnant women was assessed using likert scale**  
**Table 3: Showing knowledge on Hypertension in pregnancy. (N=110)**

Variables	Responses				
	Strongly agree	Moderately agree	Agree	Disagree	Strongly disagree
	Frequency and percentages				
Have you ever heard of Hypertension in pregnancy?	36(33%)	19(17%)	30(27%)	8(7%)	17(21%)
Hypertension in pregnancy is caused by consuming too much salt.	29(26%)	33(30%)	23(21%)	13(12%)	12(11%)
Any pregnant woman can get Hypertension.	28(25%)	23(21%)	20(18%)	18(16%)	21(20%)
Stress causes Hypertension in pregnancy.	16(15%)	9(8%)	37(34%)	18(16%)	30(27%)
Headache, Nausea and Vomiting are the signs of Hypertension in pregnancy.	16(15%)	18(16%)	40(36%)	21(19%)	15(14%)
High blood pressure is a sign of Hypertension in pregnancy.	22(20%)	10(9%)	36(33%)	22(20%)	20(18%)
Multiple pregnancy is a possible cause of hypertension in pregnancy.	45(41%)	25(23%)	18(16%)	13(12%)	9(8%)
Evil spirit is a possible cause of Hypertension in pregnancy.	39(36%)	29(26%)	20(18%)	7(6%)	15(14%)

**Categorized knowledge**

Knowledge was categorized as follows: where strongly agree was categorized as good knowledge, moderately agree and agree was categorized as moderate knowledge and lastly disagree and strongly disagree was categorized as poor knowledge as shown in the table below.

**Table 4: showing the categorized knowledge**

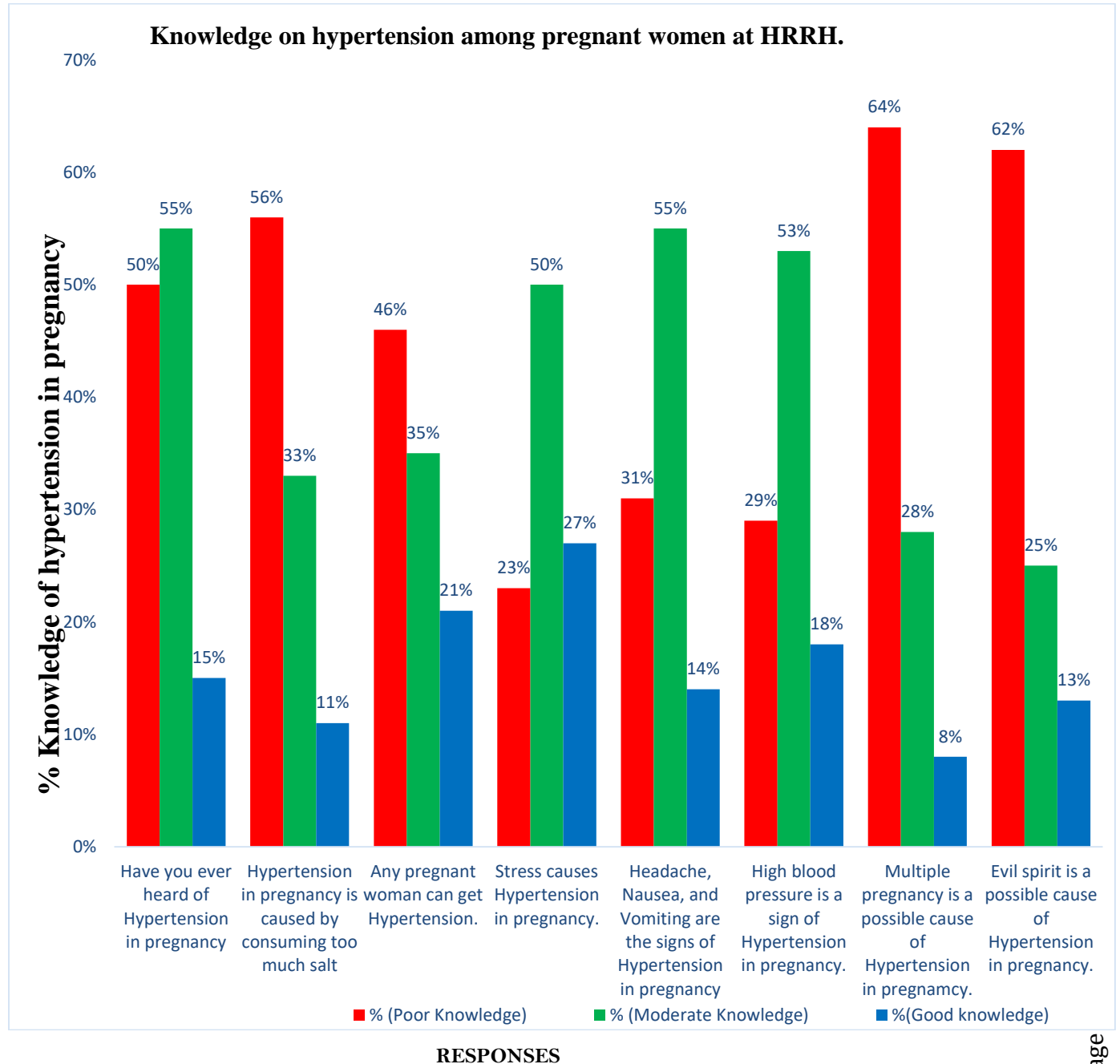
Variables	Responses		
	Good knowledge	Moderate knowledge	Poor knowledge
	Frequency and percentages		
Have you ever heard of Hypertension in pregnancy?	17(15%)	38(35%)	55(50%)
Hypertension in pregnancy is caused by consuming too much salt.	12(11%)	36(33%)	62(56%)
Any pregnant woman can get Hypertension.	21(19%)	38(35%)	51(46%)
Stress causes Hypertension in pregnancy.	30(27%)	55(50%)	25(23%)
Headache, Nausea and Vomiting are the signs of Hypertension in pregnancy.	15(14%)	61(55%)	34(31%)
High blood pressure is a sign of Hypertension in pregnancy.	20(18%)	58(53%)	32(29%)
Multiple pregnancy is a possible cause of hypertension in pregnancy.	9(8%)	31(28%)	70(64%)
Evil spirit is a possible cause of Hypertension in pregnancy.	15(13%)	27(25%)	68(62%)

According to table 4 above, results shows that, majority 55(50%) of the respondents had never heard of hypertension in pregnancy compared to 17(15%) had good knowledge, more so, most 62(56%) of the respondents did not know that it is caused by eating too much salt compared to 12(11%) who had good knowledge about it, in

addition, 55(50%) of the respondents had moderate knowledge about stress being the cause of Hypertension in pregnancy compared to 25(23%) who had poor knowledge furthermore, most 70(64%) of the respondents did not know that Multiple pregnancy is a possible cause of Hypertension in pregnancy compared to 9(8%) who had poor knowledge, and also relatively, few pregnant women 34(31%) of the respondents had poor knowledge on signs and symptoms of hypertension like Headache, Nausea and Vomiting compared to 15(14%) who had poor knowledge, And relatively high number 61(55%) of the respondents had moderate knowledge on the signs of hypertension in pregnancy compared to 34(31%) who had poor knowledge, Many of the respondents 68(62%) disagreed to Evil spirits being the cause of hypertension in pregnancy compared to 15(13%) who agreed to it, and 27(25%) of the respondents moderately agreed that Evil spirits is the cause of hypertension in pregnancy.

**Graphical representation of categorized knowledge on hypertension**

Figure 1: showing the percentages of knowledge on Hypertension in pregnancy among pregnant women in HRRH.



**Table 5: Showing Practices Pregnant women do on Hypertension in pregnancy. N=110**

Practices	FREQUENCY			PERCENTAGES		
	Yes	No	Total (N)	Yes	No	Total
Do you eat enough balanced diet with more proteins?	78	32	110	71%	29%	100%
Moderate Exercise regularly can prevent Hypertension in pregnancy.	59	51	110	54%	46%	100%
Routine Medical checkups during pregnancy prevents hypertension.	75	35	110	68%	32%	100%
Do you attend Antenatal care every month?	58	52	110	53%	47%	100%
Avoiding social habits like drinking Alcohol and smoking prevents Hypertension in pregnancy.	90	20	110	82%	18%	100%

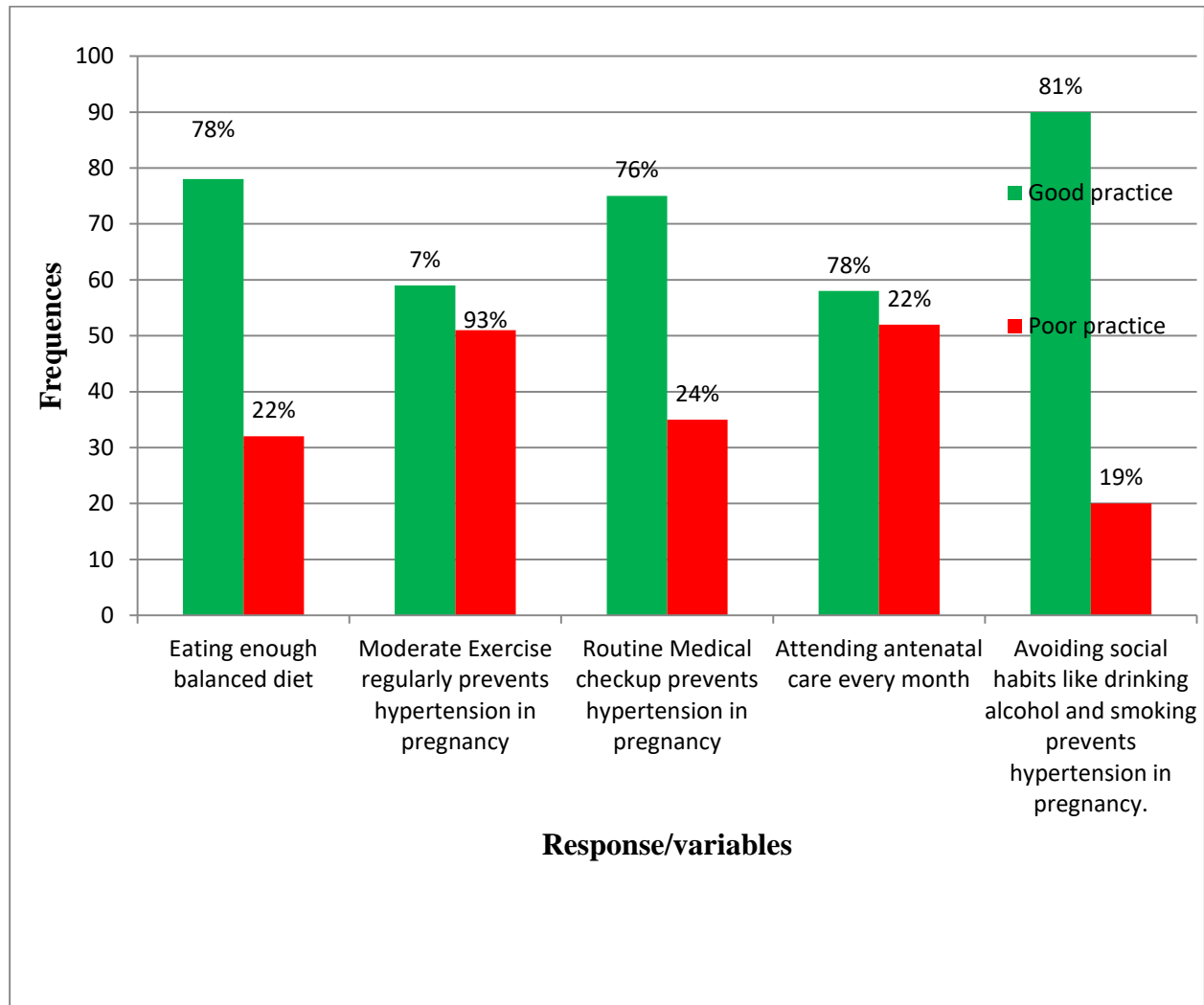
From the table 5 above, majority 78(71%) of the respondents ate enough balanced diet compared to 32(29%) who were not eating a balanced diet, more so more than half 59(54%) agreed that moderate exercise regularly can prevent hypertension in pregnancy compared to 51(46%) who did not agree. Furthermore most 75(68%) pregnant women accepted that routine Medical checkups during pregnancy prevents hypertension compared to 35(32%) who said No. Most of the pregnant women 58 (53%) could attend antenatal care every month as a routine practice to prevent hypertension in pregnancy, however 52(47%) did not attend antenatal care every month. 90 (82%) said 'YES Avoiding social habits like drinking Alcohol and smoking Prevents Hypertension in pregnancy' compared to 20(18%) who said 'NO'

**Note:** The parameter used to assess patients knowledge on Hypertension in pregnancy was rated on a scale of YES and NO.

YES Answer Good practice

NO Answer poor practice

**Figure 2: Showing practices on Hypertension in pregnancy**



From the figure 2 above, majority 78(71%) of the respondents had good practice on eating enough balanced diet compared to 32(29%) who had poor practice, more so most 59(54%) of the respondents had good practice on moderate exercise to prevent hypertension in pregnancy compared to 41(46%) had poor practice, Furthermore most 75(68%) of the respondents had good practice on routine Medical Checkups during pregnancy to prevent hypertension in pregnancy compared to 25(32%) had poor practice, majority 58(53%) of the respondents had good practice on attending antenatal care every month compared to 42(47%) who had poor practice and more so 81(82%) of the respondents had good practice on avoiding social habits like drinking alcohol and smoking as a way of preventing hypertension in pregnancy compared to 19(18%) had poor practice.

### DISCUSSION

#### Knowledge on hypertension among pregnant women in HRRH

According to this study majority 50% of the women had never heard of hypertension in pregnancy. This was low compared to a study by Another study had reported that 60% of the women had no knowledge of hypertension in pregnancy [17]. Another study disagreeing with this showed 62% women were aware hypertension in pregnancy. This could be because in that study majority were of tertiary level of education. This study found that most of the women (56%) didn't know who is at risk of hypertension during pregnancy. This could be attributed to their low level of education since most in this study did not go beyond primary school. In this study stress was mostly known to be the cause of hypertension in pregnancy which agrees with other studies. This could be as a result of much salt consumption by the pregnant women. This study found that most of the women did not know that



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hypertension in pregnancy is caused by eating too much salt. Therefore, in this study mostly known cause of hypertension was stress. This study showed that some pregnant women (31% of the respondents) had poor knowledge on signs and symptoms of hypertension like Headache, Nausea and Vomiting. This similar to finding done by Chimberengwa and Naidoo [19] where women had poor knowledge of the signs of hypertension (headache, nausea and vomiting). Results of this research showed that more than a half (68% of the respondents) do routine medical checkups irrespective of their conditions. This may be because of the level of education in this study many were below secondary level of education. This study showed that 47% did not attend ante-natal care every month and 32% did not go for routine medical checkups and this is display of knowledge deficit towards ANC visits could equally be attributed to low educational attainment by the respondents. This could also be due to the fact that health workers do not encourage patients to seek early and regular ANC visits. In this study, Majority 90(82%) of the respondents believed that avoiding social habits like drinking alcohol and smoking as one of the practices prevents hypertension in pregnancy. This indicates that majority of patients had good practices generally on hypertension in pregnancy and also it could be due to the fact that health workers encourage patients to avoid such bad social habits as a practice to prevent hypertension in pregnancy.

### CONCLUSION

This study was conducted among pregnant women on their knowledge and practices relating to hypertension in pregnancy and they were analyzed. The findings revealed, majority of the respondents in HRRH maternity ward and those who visited antenatal care clinic had poor knowledge generally about hypertension in pregnancy, and a low number had good knowledge. Generally, there is poor knowledge of hypertension among pregnant women attending antenatal clinic at HRRH and this study shows that the commonly known cause of hypertension is stress. A fairly high number of women practiced routine medical checkups. A reasonable high number were not attending ANC every month,

### Recommendations

Strengthening of health education activities may improve their knowledge and practice on Hypertension in pregnancy. Special emphasis should be given for women who have preexisting chronic medical illness, old age and prime gravid to have early recognition and readiness for better management of pregnancy induced hypertension. Pregnant women should take the antenatal care very seriously. Women should be encouraged to deliver in the hospital. The government should increase on creating awareness and put a task force on medical personnel to sensitize pregnant women about hypertension in pregnancy by doing hospital and communities education programs through radios, TVs newspaper and etc. Pregnant women should be taught about healthy preventive practices for example regular medical checkups, attending antenatal care every month, doing regular moderate exercise, eating balanced diet and avoiding social habits like drinking alcohol and smoking such that we can reduce on the maternal mortality and infant mortality rates. Pregnant women should be taught on how to identify risk factors and signs and symptoms of hypertension in pregnancy and measures that can be taken to avoid them, such that the prevalence of Hypertension in pregnancy can be reduced.

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