

The Knowledge, Attitude and Beliefs about Pre-eclampsia and Eclampsia among Pregnant Women at Selected Antenatal Clinics in Kitwe

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Abstract

Introduction: Pregnancy is considered a life-changing moment for almost every woman in her child bearing age. Nevertheless, it becomes challenging whenever complications commence be it physically, mentally or emotionally as they might pose a threat to the lives of both the mother and fetus. Hypertensive disorders are leading causes of maternal and fetal morbidity and mortality worldwide. Early detection and treatment is one of the ways that can help combat this fatal condition and in order to achieve this, the community must have adequate knowledge and skills concerning the condition and should also be provided with emergency care.

Objectives: The purpose of this study is to assess the knowledge levels of women as well as attitudes towards preeclampsia and eclampsia.

Method: This was a cross-sectional study on pregnant women of Kitwe. The target population was identified using a purposive sampling technique with a sample size of 143. Data was collected from the women themselves using structured questionnaires through face to face interviews. The questionnaires were made in such a way that even those who only understood the local language were able to benefit from the survey. Data analysis was done using IBM Statistical Package for Social Sciences (SPSS) version 26.

Results: During the study, 128 patients agreed to answer the questionnaire out of the calculated sample size of 143 giving a response rate of 89.5%. The study revealed that 77.3% of the participants have heard of the terms PE/E but only 5.5% knew what either term meant. In this study, 64 (50.0%) of the participants were moderately knowledgeable, 54 (42.2%) were poorly knowledgeable and only 10 (7.8%) had good knowledge regarding PE. With regards to attitude towards preeclampsia, 32 (25.0%) of the participants had good attitude while 31 (24.2%) had poor attitude towards pre-eclampsia and eclampsia. Most participants agreed that PE/E is a danger to their health (66%) and that regular ANC follow up (77%) can reduce the risk of having it.

Conclusion: This study reveals that participants do suffer from PE and have heard of the term from different sources like the community, friends and neighbors, their doctors etc. but only a small proportion know and understand what the term means and were able to describe it.

There is very poor knowledge regarding it and negative attitude by most pregnant women. Therefore, it is important that these women be made aware of the dangers of PE, as well as symptoms and how to prevent it.

Keywords: Statistical Package for Social Sciences (SPSS) • Proteinuria • Hypertension • Pre-eclampsia • Epigastria

Abbreviations: PE: Pre-Eclampsia; E: Eclampsia; WHO: World Health Organization

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Introduction

Background

Pre-eclampsia is defined as a condition in pregnancy characterized by high blood pressure (hypertension) and protein in the urine (proteinuria). Apart from that, a patient may also have low platelets as well as indicators of liver and kidney dysfunction. It usually occurs after 20 weeks of gestation but some reports describe it as occurring 4-6 weeks after birth although most cases of postpartum preeclampsia are said to take place within 48 hours of delivery. If untreated, it progresses to eclampsia. Eclampsia is a condition in which a pregnant woman suffers one or more convulsions from high blood pressure. It is basically the development of seizures packer in a woman with severe pre-eclampsia and is said to have a death rate of about 3%. This condition commonly develops during ones first pregnancy especially pregnant teenagers and women over 40. The exact cause is unknown but according to suspicion, it is caused by factors which include improper functioning of the placenta as well as reduced blood flow to it, twin gestation, poor nutrition, high body mass index, and genetic factors may increase the risk as well. It presents with hypertension, proteinuria, fetal growth restriction, abdominal pain, headaches, thrombocytopenia, reduced urine or no urine output, haemolysis, hyperreflexia, seizures to mention but a few. Patients with preeclampsia and eclampsia with severe features display end organ effects and may complain of the following; headache, visual disturbances (blurred, scintillating scotomata), altered mental status, blindness, dyspnea, edema (sudden increase in edema or facial edema), epigastric or right upper quadrant abdominal pain, weakness or malaise and clonus.

Preeclampsia is said to be a major public health problem and this is due to its frequency as well as its related maternal and perinatal morbidity which later leads to mortality. These conditions are not only associated with adverse pregnancy outcomes, but also contribute to higher risk of other diseases like cardiovascular diseases, renal impairments, diabetes mellitus mostly type 2, reduced thyroid functioning and cognitive defects in the coming years [1]. Furthermore, children born from preeclamptic or eclamptic pregnancies are more prone to hypertension, diabetes mellitus type 1, complications with neurons as well as mental disorders later in their lives.

Hypertensive disorders of pregnancy cause 14% of all maternal deaths globally, approximately 42,000 each year [2]. Nearly all of these deaths occur in low-resource settings (99%), with death in high income settings being very rare [3]. Hypertensive disorders are in different types, but the majority of morbidity and mortality is associated with pre-eclampsia and eclampsia.

It estimated that the prevalence of preeclampsia globally is 4.6% and the prevalence of eclampsia globally is reported to be 0.3% [4]. This analysis was according to the secondary analysis done by the World Health Organization (WHO) multi country survey that comprised of 875 cases of eclampsia which had been collected over a short duration from only secondary as well as tertiary hospitals. Women under 20 years of age, women with low levels of education and women in their first pregnancy are all reported to be at higher risk [5]. It was observed that finding reliable data on the prevalence of maternal deaths related to

eclampsia are usually scarce. Estimates from datasets reported the case fatality rate to be 8.3%, whereas the WHO survey reported 32 maternal deaths, 3.7% of women with eclampsia.

Problem statement

Preeclampsia and eclampsia as earlier stated happen more frequent among women of developing countries which are due to the fact that these women don't receive full sensitization as well as the widespread knowledge deficit on matters involving the condition, its symptoms and preventive measures. Allow me to prove to you that it's a very common condition and its evaluation is of great importance. Follow-up and treatment on pregnant hypertensive women is important because it can prevent the onset of PE as well as serious end organ damage. Most southern African countries have tried to reduce the prevalence of pregnancy induced hypertension but statistics review that the cases are still high. In a study that was carried out in Bengladesh, it was discovered that death from eclampsia is also caused or induced by other factors. Among obstetric patients admitted to hospital during the years 1998-2000, 2956 were eclamptic thus yielding an incidence of 9%. It was also noted that three quarters of the seizures that occurred were due to an increase in the levels of proteinuria and hypertension in most women that were in admission. This shows that many women out there don't really know much about PE and they have to be educated on the importance of knowing what the condition is all about and also attending antenatal sessions as some of these things are mentioned during those meetings. That way, the percentage of morbidity and mortality among women and children will reduce [6].

Literature Review

Women with pregnancy induced hypertension have worries, with dread of unfriendly results [7]. Most of them deliver by way of a cesarean section which is on its own, life threatening to both the mother and the baby. In other cases, the practitioners are left with the choice of asking the mother about whose life they should spare as they can only save one of the two which is somewhat a tough decision to come up with. Eclampsia manifests or has effects such as belly pain, weight gain, headache, vomiting, and nausea etc. This investigation will attempt to analyze discoveries of various ways of educating every woman in her reproductive years.

Global perspective

Over half a million people die from pregnancy related diseases each year especially in low income countries. Complications of childbirth and pregnancy are the leading cause of death amongst women of reproductive years. Maternal and child health has been placed first in the millennium development goals owing to the fact that 10% of women have high blood pressure during pregnancy and PE complications in 2% to about 8% of these pregnancies.

A review which was done by world health organization indicated that hypertensive disorders account for about 16% of all maternal deaths in developed countries, 9% of maternal deaths in Africa and Asia, and as high as 26% in Latin America and the Caribbean [8]. In areas where maternal mortality is high, most of the deaths are attributed to eclampsia, rather than preeclampsia.

Based on data from the United States national hospital discharge survey, the rate of preeclampsia during admission for labor and delivery increased by 25% from 1998 to 2012, while that of eclampsia decreased by 22%. Severe morbidity is associated with preeclampsia, stroke, cardiac dysfunction or arrest, respiratory compromise, coagulopathy, and liver failure. In a study of hospitals managed by health care American corporation, preeclampsia was the second leading cause of pregnancy related intensive care unit admissions after obstetric bleeding [8]. In a descriptive study that was done in Bangalore, India, about a 100 pregnant women were assessed using structured questionnaires on their knowledge levels regarding preeclampsia and it was reported that about 71% of pregnancy induced hypertensive women had moderately adequate knowledge, 28% of the women had inadequate knowledge whereas a percent had adequate knowledge of preeclampsia. 63% of the women had favorable practice whereas 37% had unfavorable practice. Considering the attitude majority 83% of the women had favorable attitude on preeclampsia.

Regional perspective: Having adequate knowledge on a certain disease renders assistance to its prevention, control and management. Reports indicate that a patients' knowledge about a disease has vital benefits when it comes to compliance to treatment and helps to subside complications associated with the disease [9]. In Ghana, one major hurdle in combating PE is the late reporting of women to healthcare of a sign or symptom. Women experiencing PE who are equipped with knowledge would report early to the hospital, receive medical treatment on time and have fewer adverse outcomes. This added emphasis to the importance of the need for women to have adequate knowledge on the disease. According to a cross sectional study conducted at the university hospital in Kumasi in Ghana on knowledge of preeclampsia and its associated factors among pregnant women, 88.4% of high prevalence of inadequate knowledge on preeclampsia among pregnant population was recorded. The inadequate knowledge of PE among the population was linked to the fact that although most of the participants were aware of PE, largely because of knowledge of PE on chronic hypertension, only a limited number had sufficient knowledge about the symptoms, risk factors and complications of PE [10].

A study that was carried out in Mozambique estimated mortality rate at 249-480 per 100000 live births and eclampsia was said to be the third leading inducer of mortality. The study was carried out in order to assess the community understanding of PE and E as a crucial step to improve maternal and perinatal. The conditions of PE and E were not known in these communities but participants were familiar with hypertension and seizures in pregnancy. This contention is illustrated due to the fact that they are often portrayed by the combination of traditional terminologies which enclose little or no reference to pregnancy or pregnant women. Seizures are viewed as a childhood condition which is caused by supernatural forces that persist through adulthood if untreated. These misconceptions as well as the use of traditional treatments usually lead to serious consequences, such as maternal or fetal death, resulting from inadequate or inappropriate treatment.

National perspective: In Zambia, PE and E are one of the major public health problems. In a cross-sectional study that was carried out in an urban clinic of Lusaka as well as a rural clinic of chibombo, Zambia, it was discovered that about 18.6% of women had hypertension in Lusaka and chibombo with 6.7%. This

was done by measuring blood pressure and risk factors of hypertension among women who had appointments with the gynecologist and this comprised of 234 women between the ages 18 to 45 years. Another study was done in selected health centers of Mumbwa in order to evaluate the quality of antenatal care services. It was said that the study reviewed a lot of variations in the care that was being provided deducing that antenatal care did not fully achieve its intended purpose because if it had, there would have been less maternal and child mortality caused by pregnancy [11].

Maternal mortality in developing countries is high due to PE. To reduce the maternal mortality in Zambia, it is important to survey the status of PE and prevent eclampsia. In a study done in Zimba mission hospital, Zambia, on perinatal care for Zambian pregnant women complicated with preeclampsia, deliveries from January through December in 2017 were enrolled. The number of patients complicated with preeclampsia and eclampsia were analyzed and the clinical condition. Among the 1712 deliveries in Zimba, 42 women were complicated with gestational hypertension, 17 with PE. There were two still births in PE and all 8 eclampsia (19%) deliveries happened out of hospital and the patients were then taken to the hospital. This showed that most pregnant women were not aware of the complications and dangers of eclampsia [12].

Justification

Limited if any research has been adequately done on PE and E hence not much is known about how well people know the condition as well as its associated effects and complications.

However, other studies relating to PE and E have been done in various parts of the world which will act as guidelines to this research. Given the limited research on the effects of pregnancy induced hypertension, this research aims at giving more insight on the importance of women having adequate knowledge about the condition for the purpose of reducing morbidity and mortality caused by it.

Objectives

General objectives: To determine the knowledge, attitude and beliefs about preeclampsia and eclampsia among pregnant women in selected antenatal clinics of Kitwe.

Specific objectives

- To assess the knowledge that women have on PE and E.
- To determine the attitudes of women of Ndola towards PE and E.
- To assess the beliefs of women towards PE and E.

Research questions

- What is the level of knowledge of the pregnant women of Kitwe regarding preeclampsia and eclampsia?
- What is the attitude of women towards PE and E in Kitwe?
- What are the beliefs of pregnant women of Kitwe towards PE and E?

Measurements

Operational definitions

- **Knowledge:** Refers to having understanding or information about a particular topic.
- **Attitude:** A point of view that causes one to respond positively towards a particular idea (Table 1).

- **Beliefs:** An acceptance that something exists or is true, especially one without proof (Figure 1).

Scales of measurement

Variables	Indicators	Scale of measurement
Dependent		
Knowledge	>5/6-highly knowledgeable 3-4/6-moderately knowledgeable less than 3-not knowledgeable.	Ordinal scale
Attitude	Will be measured using I agree, neutral and disagree and with poor, satisfactory and unsatisfactory >7/9 good attitude 4-6/10 borderline <4 poor attitude	Nominal scale
prevalence	Those who have been diagnosed with PE/E before	Yes/no nominal scale
Independent variables		
Occupation status	Some occupations bring people to direct contact with the problem.	Ordinal scale
Age	Older people are more exposed to information regarding health issues.	Ordinal scale

Table 1. Scales of measurements.

Conceptual framework

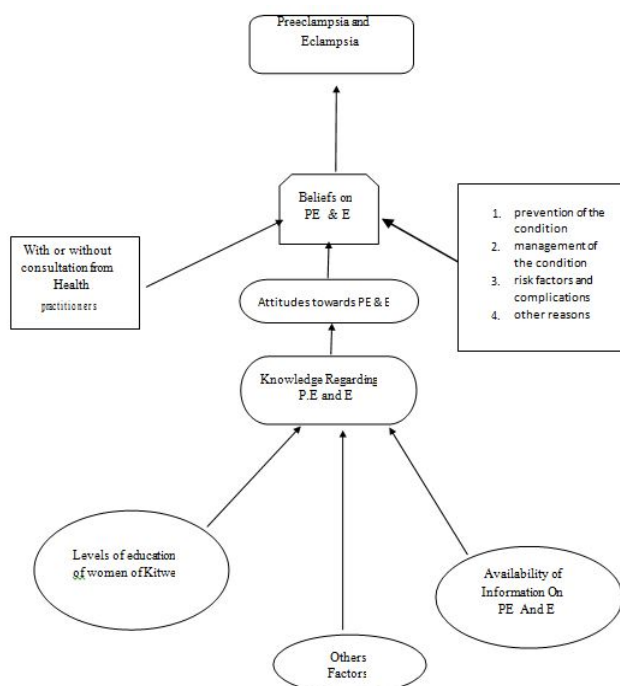


Figure 1. Conceptual framework.

Study site

The study site was Kitwe at Kitwe teaching hospital.

Target population

All pregnant women visiting antenatal clinics in the selected hospital during the study period were the study population. On the other hand, those who visited the ANC clinics for the diagnosis of pregnancy were excluded.

Study design

This was a quantitative cross sectional study because it measured the extent of knowledge regarding PE and E among women in Kitwe.

Sample size

$$\text{Sample size } (n) = z^2pq/d^2$$

where,

z is the level of confidence,

p is the estimate of prevalence,

q=100-p and d is the margin of error,

which is 10% for a larger prevalence.

With z=1.96, q=100-p, p=50% and d=10%

$$\text{Sample size } (n) = (1.96^2) (50) (50) / (10^2)$$

$$96.04 = 100$$

Expecting a response rate of 70%, the required minimum sample size becomes $n = 100 / 0.70 = 142.9$

A sample size of 143 women was used.

Sampling procedure

- Selection was done using purposive sampling.

Inclusion and exclusion of the study criteria

Inclusion criteria

- Should be willing to give an informed consent to participate in the study.
- Should be pregnant.
- Should be Kitwe residents.

Exclusion criteria

- All women that were not pregnant were not included in the study.

- All women that were not willing to give informed consent were not included in the study.
- Women that were not residents of Kitwe were not included in the study.

Data collection

Data was collected using structured questionnaires through face to face interviews. The questionnaire was being adapted from different published literatures. The data collection tool had 3 sections. These are the social demographic parts, knowledge and attitude measurement questions related to PE/E.

Data analysis

After collecting the data using questionnaire, raw data was edited for completeness and consistency, then categorized and coded using Statistical Package for Social Sciences (SPSS) Version 26.

Results

Social demographic characteristics

A total number of 128 women attending antenatal at various healthcare facilities in Kitwe took part in the study giving a response rate of 89.5%. Majority were aged between 21-30 years 83 (64.8%), with the least being 31-50 years 16 (12.5%) and the remainder were aged between 10-20 years 29 (22.7%). 78 (60.9%) were married, 49 (38.3%) were single and only one (0.8%) was divorced. Of these, 97 (75.8%) attained secondary education, 17 (13.3%) attained primary education while 14 (10.9%) attained tertiary education (Supplementary file).

A greater proportion of the participants were Christian 125 (97.7%) with only 3 (2.3%) being Islam. The women’s occupation ranged from formal to informal jobs with majority being private employees 68 (53.1%) and the least being students 2 (1.6%) and health workers 2 (1.6%). Majority of the mothers had ≤ 2 children 86 (67.2%) and the rest had between 3-6 children 42 (32.8%).

The Figures 2-4 below show the ages, marital status and the level of education of the participants.

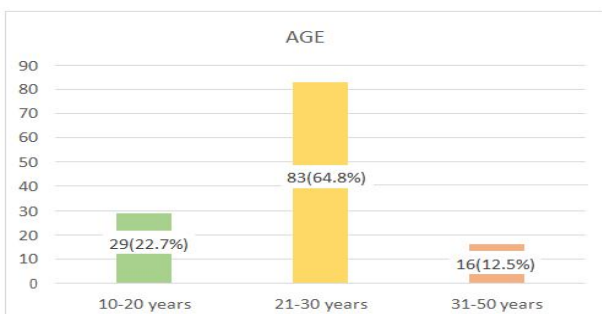


Figure 2. Age ranges of the participants.

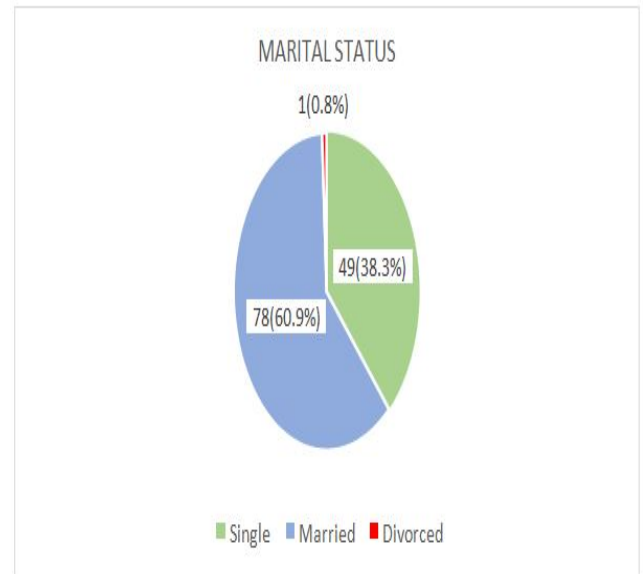


Figure 3. Marital statuses of the participants.

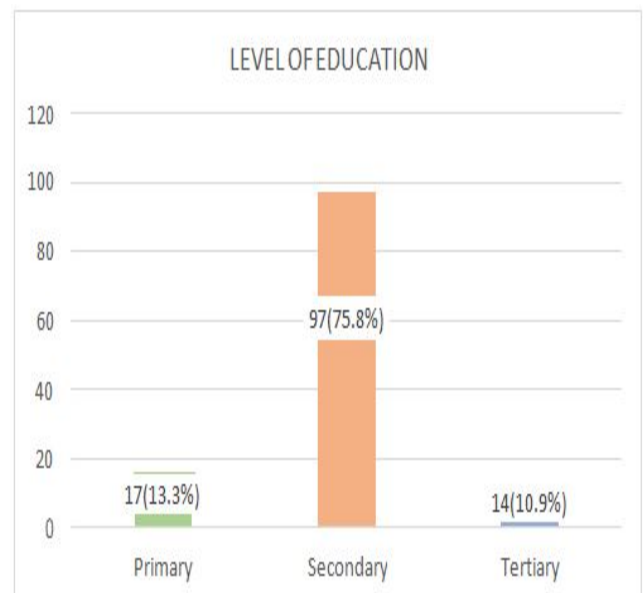


Figure 4. Level of education of the participants.

Prevalence

Of the participants in the study, only 17 (13.3%) admitted to having been diagnosed with pre-eclampsia and/or eclampsia. 106 (82.8%) had never been diagnosed with either whilst the remaining 5 (3.9%) were unsure (Figure 5).

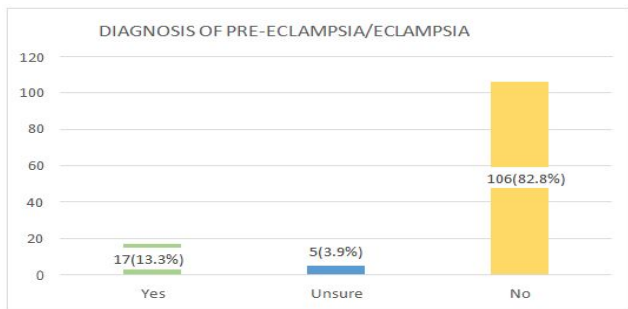


Figure 5. Prevalence of preeclampsia.

Knowledge

Regarding knowledge on pre-eclampsia and eclampsia, results indicated that of the 128 participants, 64 (50.0%) were moderately knowledgeable, 54 (42.2%) were poorly knowledgeable and only 10 (7.8%) had good knowledge. The Table 2 below shows the responses on the different questions asked.

Questions	Frequency (n=128)	Percentage (%)
Have you ever heard of preeclampsia and eclampsia?		
Yes	99	77.3
No	29	22.7
What do you understand by the term, preeclampsia (pregnancy-induced hypertension) and eclampsia?		
Satisfactory response	7	5.5
Unsatisfactory response	121	94.5
How can you prevent preeclampsia and eclampsia (pregnancy-induced hypertension)?		
Satisfactory response	57	44.5
Unsatisfactory response	71	55.5
What do you think are the symptoms of preeclampsia and eclampsia?		
Satisfactory response	30	23.4
Unsatisfactory response	48	37.5
Poor response	50	39.1
What do you think happens to the baby if the mother has preeclampsia or eclampsia?		
Satisfactory response	83	64.8
Unsatisfactory response	45	35.2

Table 2. Knowledge base of the participants.

From the 5 questions asked in the table, the most known item was if the respondents had ever heard of PE/E and the least known item was their understanding of the terms. To further assess the knowledge, each correct answer on knowledge was given a score of one or two, wrong answers a score of zero. Respondents scoring 0-2, 3-4, 5-6 were graded as having poor knowledge, moderate and good knowledge respectively as shown in the Figure 6.

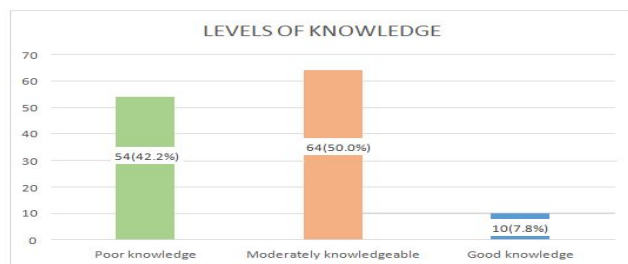


Figure 6. Knowledge scores of the participants.

Attitude

It was found that 65 (50.8%) of the participants had borderline attitude, on the other hand 32 (25.0%) of the participants had good attitude while 31 (24.2%) had poor attitude towards pre-eclampsia and eclampsia. Most participants agreed that PE/E is a danger to their health (66%) and that regular ANC follow up (77%) can reduce the risk of having it. On the other hand, 71% of the participants disagreed to PE/E being spiritual (Figure 7).

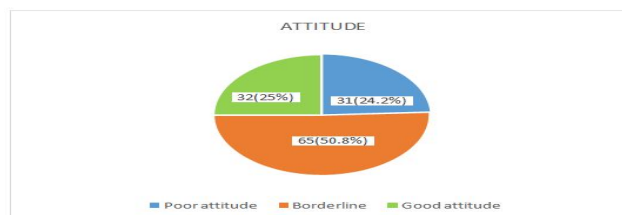


Figure 7. Attitude scores of the participants.

In the evaluation of attitude, each question was given a score of one or two for the correct answer, and a zero for every wrong or

poor response. Responses scoring 0-3, 4-6, 7-10 were grouped as poor attitude, borderline and good attitude respectively (Table 3).

The 5 questions below were asked to assess attitude.

Questions	Frequency (n=128)	Percentage (%)
Do you think preeclampsia and eclampsia is a danger to your health?		
Agree	66	51.6
Neutral	32	25
Disagree	30	23.4
Do you think Age is a risk factor for preeclampsia and eclampsia?		
Agree	47	36.7
Neutral	27	21.1
Disagree	54	42.2
What would you do if you were diagnosed with preeclampsia or eclampsia?		
Satisfactory response	35	27.3
Unsatisfactory response	62	48.4
Poor response	31	24.2
Do you think having preeclampsia or eclampsia is spiritual?		
Agree	30	23.4
Neutral	27	21.1
Disagree	71	55.5
Do you think having regular ANC can prevent preeclampsia?		
Agree	71	55.5
Neutral	24	18.8
Disagree	33	25.8

Table 3. Attitude towards PE/E.

Association between knowledge and attitude: An association was made between knowledge levels and the attitude score which revealed that the participants that had good knowledge also had a

good attitude while most of those with low knowledge had a borderline attitude, an insignificant associations with a P value of 0.187 was found as shown in the Table 4.

Variable		Good knowledge n=10		Moderately knowledgeable n=64		Poor knowledge=54		P-value
		N	%	N	%	N	%	
Age	10-20	1	0.8	12	9.4	16	12.5	0.417
	21-30	8	6.3	47	36.7	28	21.8	
	31-50	1	0.8	5	3.9	10	7.8	

Occupation	Housewife	1	0.8	10	7.8	7	5.5	0.656
	Private employee	4	3.1	35	27.3	29	22.7	
	Entrepreneurial	0	0	1	0.8	1	0.8	
	Farmer	0	0	1	0.8	3	2.3	
	Health worker	1	0.8	0	0	1	0.8	
	Student	0	0	1	0.8	1	0.8	
	Nil	2	1.6	11	8.6	5	3.9	
	Others	2	1.6	5	3.9	7	5.5	
Religion	Christianity	9	7	62	48.4	54	42.2	0.032
	Islam	1	0.8	2	1.6	0	0	
Level of education	Primary	2	1.6	5	3.9	10	7.8	0.647
	Secondary	6	4.7	54	42.2	37	28.9	
	Tertiary	2	1.6	5	3.9	7	5.5	
Marital status	Single	1	0.8	22	17.2	28	21.9	0.004
	Married	9	7	41	32	28	21.9	
	Divorced	0	0	1	0.8	0	0	
Attitude	Poor attitude	3	2.3	12	9.4	16	12.5	0.187
	Borderline	3	2.3	34	26.6	28	21.9	
	Good attitude	4	3.1	18	14.1	10	7.8	

Table 4. Crosstabs of knowledge and associations.

Association of knowledge and the demographic characteristics of the respondents

With regards to the associations between knowledge and the demographic characteristics of the respondents, the respondents who had good knowledge (6.3%) were aged between 21 and 30, the same goes for those with poor knowledge (21.8%) thus an insignificant association (P-value 0.415) was found between

knowledge and age of the participants. Respondents who were privately employed (22.7%) had poor knowledge scores while only 3.1% of the privately employed had good knowledge scores thus an insignificant association with P value of 0.656 was found between knowledge and occupation. However, significant associations were found between knowledge and religion (P-value 0.032) and between knowledge and marital status (P value 0.004) (Table 5).

Other variables with a significant association with knowledge

Variable	P-value
Have you ever heard of pre-eclampsia/eclampsia	<0.001
Have you ever been diagnosed with pre-eclampsia/eclampsia	<0.001

Table 5. Variables with significant association with knowledge.

Discussion

Preeclampsia/eclampsia compared with other pregnancy induced hypertensive diseases is said to have a high mortality rate. This is why apart from diagnosing and treating it, it is important to assess the knowledge and attitude levels towards preeclampsia in order to come up with a good intervention mechanism for the community. The purpose of this study was to assess the knowledge, attitude and

beliefs of pregnant women in Kitwe towards PE/E. During the study, 128 patients agreed to answer the questionnaire out of the calculated sample size of 143 giving a response rate of 89.5%. The study revealed that 77.3% of the participants have heard of the terms PE/E but only 5.5% knew what either term meant. In this study, 64 (50.0%) of the participants were moderately knowledgeable, 54 (42.2%)

poorly knowledgeable and only 10 (7.8%) had good knowledge regarding PE. The findings of this study are lower than a similar study that was carried out in South Gonder zone, northwest Ethiopia where 92 (22.45%), 200 (48.8%) and 118 (28.8%) of the study participants had poor, moderate and good knowledge on PE respectively [13]. In this current study, majority (50.0%) of the participants had moderate knowledge while a minority had good knowledge (7.8%).

These findings are also lower than those of a study that was done in northern Ethiopia on pregnancy induced hypertension but higher than the study that was conducted in a study that was done in Bangalore, India, about a 100 pregnant women were assessed using structured questionnaires on their knowledge levels regarding preeclampsia and it was reported that about 71% of women had moderately adequate knowledge, 28% of the women had inadequate knowledge whereas a percent had adequate knowledge of preeclampsia in that a very small number of women (1%) had adequate knowledge even though a huge number (71%) had moderately adequate knowledge.

A significant difference in the levels of knowledge was observed across different signs and symptoms of preeclampsia which varied from headache, lower limb swelling, difficulty breathing and sweating. In the South Gonder study, the symptoms varied from high blood pressure and genital bleeding [14].

With regards to attitude towards preeclampsia, 32 (25.0%) of the participants had good attitude while 31 (24.2%) had poor attitude towards pre-eclampsia and eclampsia. Most participants agreed that PE/E is a danger to their health (66%) and that regular ANC follow up (77%) can reduce the risk of having it. A similar finding was reported in a study that was conducted in Naples, Italy which stated that only 21.7% were found to be worried about pregnancy risk factors.

With regards to prevalence, 17 (13.3%) admitted to having been diagnosed with pre-eclampsia and/or eclampsia. A good percentage of the participants (82.8%) said they had never been diagnosed with either, I believe some of them probably had it at some point but didn't know what the term meant or rather weren't given a good explanation of the meaning of the terms when they were diagnosed. The remaining (3.9%) were unsure as they only recalled being diagnosed with something similar to pregnancy induced hypertension. This just brings more worry about the community in that many people get diagnosed and treated for PE/E but only a small proportion know what it's about and how to know that the symptoms they're experiencing are for preeclampsia.

The findings of my study indicated that social demographic characteristics of the participants like level of education had no association whatsoever with the level of knowledge on PE (P value 0.647). This indicated that the participants have never really been given the needed information regarding PE/E throughout every level of education they managed to attain as well as from sensitization or ANC meetings. Those who attained tertiary education were less knowledgeable compared to those who only went as far as secondary school. This could also be due to the fact that most participants' highest level of education was secondary school. In terms of attitude, a few participants with good attitude also had good knowledge levels and a majority of participants had poor knowledge and a borderline attitude.

Generally, the findings of this study provide an idea of the knowledge situation among pregnant women, however, his study only captures the knowledge, attitude and practices among women attending antenatal clinics at Kitwe teaching hospital as getting to other ANCs in Kitwe was impossible. Therefore, more research needs to be done in other areas to have a full picture of the problem. The results of this study can very well be used as a baseline for future studies like this specific one.

Conclusion

This study reveals that participants do suffer from PE and have heard of the term from different sources like the community, friends and neighbors, their doctors etc. but only a small proportion know and understand what the term means and were able to describe it. There is very poor knowledge regarding it and negative attitude by most pregnant women. Therefore, it is important that these women be made aware of the dangers of PE, as well as symptoms and how to prevent it.

Ethical Consideration

Ethical approval to carry out the research was sought from the Tropical Disease Research Center (TDRC) through the Michael Chilufya Sata Copperbelt university school of medicine authorities and permission to conduct the research was granted by the National Health Research Authority (NHRA). Consent was obtained from the women before administering the questionnaires. The research information collected was disseminated to relevant authorities and with no link to participants; this was to ensure that the confidentiality of the participants is maintained.

Study Limitations

- Data collection was difficult to obtain during school time, as there was less time allocated to the task.
- Not all pregnant women were interested in the study due to certain circumstances.
- Social desirability bias may have as well affected the response to the questionnaire.

Recommendations

Based on the findings of this research, one of the solutions can be carrying out sensitization programs for women in general, especially those in the child bearing age, not only those that are pregnant, the purpose of these would be to increase awareness of PE/E. Women need to be educated on the risk factors, how to prevent it, the signs and symptoms and the complications. The women should also be encouraged to attend the ANCs regularly as regular blood pressure readings can give an early indication. They should also be encouraged to deliver from facilities and not their homes in order to improve their knowledge on preeclampsia. The ministry of health and other non-governmental organizations especially those that focus on the health of women can collaborate and ensure such policies are in place.

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