

WOLKITE UNIVERSITY

COLLEGE OF MEDICINE AND HEALTH SCIENCES

DEPARTMENT OF PUBLIC HEALTH

MATERNAL AND PERINATAL OUTCOMES OF PREGNANCEIES COMPLICATED BY PRELAMPSIA/ECLAMPSIA AT WOLKITE UNIVERSITY SPECIALIZED AND TEACHING HOSPITAL, GURAGE ZONE SOUTHERN ETHIOPIA, 2023 G.C

BY:	ID.N
IKRAM AHMEDIN	011/12
TARIKU KASA	029/12
WOLIYU MOHAMMED	041/12
TALEGETA GETAHUN	125/11

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ADVISOR: MR.ABEBAWASIE

MR. ANTENEH KASSA

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ABSTRACT

Background: Hypertensive disorder of pregnancy is a multisystem disease known to increase risk of perinatal and maternal mortality and morbidity worldwide. However little is known about the obstetrics and treatment predictors of perinatal and maternal mortality in women with preeclampsia/ eclampsia syndrome.

Objective: To determine maternal and fetal outcomes of pregnancies complicated by preeclampsia and eclampsia in women delivering in Wolkite University Specialize And Teaching Hospital from July 20 –August 23 2023 E.C .

Methods: Hospital-based cross-sectional study was conducted from July 21 to August 23 2023 E.C in Wolkite University Specialized and Teaching Hospital maternal & perinatal outcomes of preeclampsia and eclampsia syndrome. Quantitative data were collected by face-to-face interview using structured questionnaire. Data were coded, edited, cleaned and analysis. The results were presented in texts, figures and tables.

Result: Among the total deliveries, 130(7.2%) had there pregnancy complicated by pregnancy induced hypertension (PIH),Of the total of 130 women maternaloutcome were 2(1.5%) maternal death,6(4.6%)Still birth,2(1.5%)Early Neonatal Death.

Of the total of one hundred thirty women who had PIH, 24(18.5%%) mild pre-eclampsia, 46(35.4%)sever preeclampsia and 7(6.8%) eclampsia. Among130 (7.2%) had there pregnancy complicated by PIH, 19 (14.6%) of hypertensive mother develop complication. Out of 19 mothers with PIH develop complication, 36.8% develop severe preeclampsia,

Conclusion and Recommendation: In this study severe preeclampsia is the most common of all pregnancy related hypertension disorders followed by Eclampsia. Early recognition and management of mothers with PIH is an important instrument to reduce the case.

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ACRONYMS

ANC: Antenatal Care

CSA: central statistical agency

DIC: Disseminated Intravascular Coagulation

EDHS: Ethiopian Demographic and Health Survey

EMONC: Emergency maternal obstetrics & newborn care

EOC: Emergency Obstetric Care

HDP: Hypertensive Disorders of Pregnancy

HELLP: Hemolysis Elevated Liver enzymes Low Platelets,

IUGR: Intrauterine growth retardation

IUFD: Intrauterine fetal death

ISSHP: International Society for the Study of Hypertension in Pregnancy

LBW: Low Birth Weight

MMR: Maternal Mortality Ratio.

MOHP: Ministry of Health and Population

NCD: Non- Communicable Disease

NHBPEWG: National High Blood Pressure Education Working Group

OPD: Outpatient department

PHC: Primary Health Care

PIH: Pregnancy Induced Hypertension

WHO: World Health Organization

1. INTRODUCTION

Background

Preeclampsia refers to a syndrome characterized by the new onset of hypertension and proteinuria after 20 weeks of gestation in previously normotensive women. Eclampsia refers to the development of grandmal seizures or coma in a woman with gestational hypertension or preeclampsia (1). Preeclampsia and eclampsia are major causes of maternal and perinatal morbidity and mortality. Worldwide eclampsia and preeclampsia account for about 63 000 maternal deaths annually. In developing countries case fatality rate of up to 15% is reported in relation to eclampsia compared to 0% to 1.8% in developed countries (2). In Ethiopia based on the limited data available, HDP has been found to be common and has been associated with poor maternal and perinatal outcomes (3). The clinical course of severe preeclampsia results in progressive deterioration of both maternal and fetal conditions (4).

The high number of maternal deaths in some areas of the world reflects inequities in access to health services, and highlights the gap between rich and poor. Almost all maternal deaths (99%) occur in developing countries. More than half of these deaths occur in sub-Saharan Africa and almost one third occur in South Asia. The risk of maternal mortality is highest for adolescent girls under 15 years old and complications in pregnancy and childbirth are the leading cause of death among adolescent girls in developing countries (2,5).

The major complications that account for nearly 75% of all maternal deaths are severe bleeding (mostly bleeding after childbirth) ,infections (usually after childbirth) ,high blood pressure during pregnancy (preeclampsia and eclampsia) and complications from delivery unsafe abortion (6).

Seeing that it is possible to accelerate the decline, countries have now united to make sustainable development goal (SDG) which has target to reduce the global maternal mortality ratio to less than 70 per 100,000 births, no country having a maternal mortality rate of more than twice the global average (7). about 800 women die from pregnancy or child birth related complications around the world every day. The major complications that account for nearly 75% of all maternal deaths are severe bleeding, infections, pregnancy induced hypertension and unsafe abortion. Worldwide eclampsia and preeclampsia were account for about63, 000 maternal deaths annually. Based on the limited data available, in Ethiopia HDP has been found to be common and has been associated with poor maternal and perinatal outcomes (8)

By the end of 2016, Ethiopia's perinatal mortality rate was 33 per 1000 pregnancies, according to the 2016 Demographic and Health Survey (EDHS) [9]. Perinatal mortality women with pre eclampsia /eclampsia syndrome have a three- to five-fold greater death rate than women without the illnesses [10, 11]. Numerous studies have documented the significant perinatal mortality rate among pregnant women with hypertension diseases. For instance, it was discovered that 317/1000 newborns in Ethiopia [29], 230/1000 births in Pakistan [12], and 144/1000 births in Turkey [13] had perinatal mortality rates. According to a study conducted in Southern Ethiopia, perinatal deaths are significantly correlated with maternal deaths, antepartum disease occurrence, low birth weight, hepatic damage, earlier gestational ages at diagnosis, having eclampsia, and multipara [22].

1.2 Statement of the problem

Hypertensive disorders during pregnancy represent a significant public health problem throughout the world, and preeclampsia is the most common of these disorders (9). It has been estimated that hypertension complicates approximately 10% of all pregnancies. Of these, approximately half are due to or associated with preeclampsia. Based on these estimates and case-fatality rates, they calculated that up to 50,000 women and 500,000 perinatal death mostly in developing countries, may die due to preeclampsia or eclampsia each year (9, 10).

preclampsia/eclampsia contributed to a high proportion of maternal complications and death. disproportionally the highest burden of preeclamsia/eclampsia was reported in developing

regions of Ethiopia. Maternal complication include eclampsia, strock and damage to the hepatic and renal organs.

A population-based study in South Africa found that 12% of pregnant women experience hypertensive disorders of pregnancy (HDP). Other hospital-based research revealed that the HDP was the most common reason for maternal demise and was responsible for 20.7% of all maternal fatalities in the nation (13). Studies conducted in Ethiopia indicate that the prevalence of HDP is roughly 5%, with the majority of cases being caused by severe preeclampsia; one study found that eclampsia complicates 0.7% of pregnancies. These conditions are leading causes of maternal and perinatal illnesses.

Even though varies interventions were introduced at a country level in the past years the proportion of preeclampsia/eclampsia case in some governmental hospitals significantly increase over time.The rate of maternal complication during birth has remained relatively stable since the introduction of MgSO4 for preeclampsia/eclampsia management;however,the rate of complications among preeclamsia/eclamsia case has experienced significant increase over time mainly in the later years. The current state of maternal health some governmental hospitals in and hospitals with similar nature in Ethiopia was far from achiving the millennium development goal and in need of big assignment for sustainable development goals. In addition, though early neonatal complication have decreased over time ,the proportion remains very high. should be focused on raising awareness at at community level and strengthening health facilities for early detection/prevention and management of preeclapsia /eclampsia by equipping health facilities to manage the complication related to the complication of mother and children.This study was not yet study in this area and we are to minimize the study gab.

Even though there are few studies exploring HDP in Ethiopia, there has not been a single study in the study area. Based on the limited data available, HDP has been found to be common and has been associated with poor maternal and perinatal outcomes. Therefore, this study was conducted to explore the pattern and outcomes of pregnancies complicated by hypertensive disorders and factors associated with the disorder and pregnancy outcomes. The aim of this study

to assess maternal and as well as perinatal outcomes of pregnancies complicated by preclmpsia and eclampsia

1.3. Significance of the study

This study was great significance in reducing maternal and perinatal mortality from preeclampsia/eclampsia by increasing knowledge of health professionals. health professional used to improve knowledge and to give attention by creating awareness for community for danger signs and should attend ANC follow up and to improve the awareness of quality care for mothers and during admission to labor ward to know about danger sign.

In Ethiopia HDP has been found to be common and has been associated with poor maternal and perinatal outcomes.

The reduction of maternal deaths is the key millennium development goal so the study significant to achive millennium development goal by assessing poor maternal and perinatal out come of pregnancy complicated by preeclampsia/eclampsia.for policy makers used to develop evidence based health policies and programmes aiming to reduce maternal and perinatal deaths this need reliable and valid information. These data should inform evidence based reproductive health care polices and programmes. Therefore, this study was conduct to explore the pattern and outcomes of pregnancies complicated by hypertensive disorders and factors associated with the disorder and pregnancy outcomes. And also the result may was great significance for administrators to solve the problem. Finally the data was used for other studies for who want to assess other working area and regions as well. Furthermore, the findings can also be used for researchers on further study.

2 .LITERATURE REVIEW

Maternal and prenatal outcome

Although eclampsia is associated with an increased risk of maternal death in developed countries (0 –1.8%), the mortality rate is as high as 14% in developing countries. The high maternal mortality reported from the developing countries was noted primarily among patients who had multiple seizures outside the hospital and those without prenatal care. In addition, this high mortality rate could be attributed to the lack of resources and intensive care facilities needed to manage maternal complications from eclampsia. A recent review of all reported pregnancy-related deaths in the United States for the years 1979 –1992 identified 4,024 pregnancy-related deaths. A total of 790 (19.6%) were considered due to preeclampsia-eclampsia, with 49% of these 790 considered related to eclampsia (9, 11, 24).

According to research finding in Turkey, the overall incidence of adverse maternal outcome was 5.9%. Maternal outcomes for women with HELLP syndrome and eclampsia were higher than those for women with severe preeclampsia (14.8% vs. 12.2% vs. 3.9%, respectively). The rate of abruption placentae tended to be higher among women with HELLP syndrome than among women with severe preeclampsia and eclampsia, but the difference was not significant (9.1% vs. 8.1%.Two maternal deaths occurred, producing a case fatality rate of 0.2% (one in the HELLP syndrome group and another in the severe preeclampsia group). Death was related to intracranial hemorrhage in one case and to an ARDS complication in another case. Infant gestational age at delivery was lower for patients with HELLP syndrome than for those with eclampsia or severe preeclampsia. The percentage of oligohydramnios and of absent or reversed end diastolic flow, and the 5-min Apgar score, except FGR, were not different among women with eclampsia, severe preeclampsia, or HELLP syndrome (14).

From study done in USA, the authors found that the risk of death from preeclampsia or eclampsia was higher for women older than 30 years and those with no prenatal care, as well as

for black women. The greatest risk of death was found among women with pregnancies at or before 28 weeks of gestation. Pregnancies complicated by eclampsia are also associated with increased rates of maternal morbidities, such as abruptio placentae (7–10%), disseminated intravascular coagulopathy (7–11%), pulmonary edema (3– 5%), acute renal failure (5–9%), aspiration pneumonia (2–3%), and cardiopulmonary arrest (2–5%). Adult respiratory distress syndrome and intracerebral hemorrhage are rare complications among eclamptic series reported from the developed world. The risks of diffuse intravascular coagulation (8%); hemolysis, elevated liver enzymes, low platelets (HELLP) syndrome (1 –1.5%); and liver hematoma (1%) are similar in eclamptic and severely preeclamptic patients (9, 25).

It is important to note that maternal complications are significantly higher among women who develop antepartum eclampsia, particularly among those who develop eclampsia remote from term.Perinatal mortality and morbidities remain high in eclamptic pregnancies. The reported perinatal death rate in recent series ranged from 5.6% to 11.8%. This high perinatal death rate is related to prematurity, abruptio placentae, and severe fetal growth restriction. The rate of preterm delivery is approximately 50%, with approximately 25% of these occurring before 32 weeks of gestation (26, 27).

According to study done on Hypertensive Disorders of Pregnancy in Jimma University Specialized Hospital, the rates of low and very low birth weight infants among 146 deliveries in the study subjects were 35.6% and 12.3%, respectively. Severe preeclampsia, eclampsia and HELLP syndrome took the lion share (92.9%) of these infants. There were 42 stillbirths yielding stillbirth rate of 27.5%. Of those still births, 38.1% and 35.7% were among mothers who had severe preeclampsia and eclampsia, respectively. There were also 25 Neonatal Intensive Care Unit (NICU) admissions and 10 Early Neonatal Deaths (ENND) of which majority were for the mothers with severe preeclampsia and eclampsia (28).

Another study done at Mettuhospital,the magnitude of pregnancy related hypertensive disorder was 2.4%. Majority 82.6% of the mothers were in the age range between 18 to 34 year with a mean age and standard deviation (SD) of 24.4 (SD ± 5.12). Severe preeclampsia was the most prevalent diagnosis made to 35.5% of the mother, followed by 19% cases of eclampsia and 12.4% of HELLP. Fetal management outcomes indicates 120.37 perinatal mortality per 1000

deliveries and a stillbirth rate of 10.2%, low birth weight of 30.5%, and low APGAR score of 18.5%, abortion 10.7% and preterm delivery 31.4% (29). Study at Zewditu memorial hospital showed Prenatal outcome for the various type of PIH were 29 prenatal deaths among all deliveries of hypertensive patient 19 (24.1%) was IUFD and 10 (12.7%) still birth which yielded prenatal mortality rate of 207/1000 births (23).

According to research on admitted pregnant cases in Dessie town referral hospital, North east Ethiopia, in 2015, Out of 320 sample pregnant mothers, 28(8.8%) had confirmed hypertensive disorders of pregnancy (HDP). Of which 13(46.4%) were mild preeclampsia, 8(28.6%)

Were severe preeclampsia, 3(10.7%) were eclampsia, 4(14.2%) were gestational hypertension (30).

3. OBJECTIVES

General objective

To assess maternal and perinatal outcomes of pregnancies complicated by preeclampsia and eclampsia in women delivering in wolkite university specialized and teaching hospital from June 20-August 23, 2023

Specific Objective

1. To determine the maternal outcomes of pregnancies complicated by preeclampsia / eclampsia
2. To determine the prenatal outcomes among women diagnosed with preeclampsia/eclampsia

4. METHODS AND MATERIALS

4.1 Study area

This study was conducted in wolkite university specialized and teaching hospital. The hospital gubre sub-city Wolkite town, the zonal town of Guraghe Zone in SNNPR. Wolkite is about 158km from the capital Addis Ababa. It is almost halfway between Addis and Jimma. Geographically, it lies between $8^0 17' N$ latitude and $37^0 49' E$ longitude with an elevation between 1910 and 1935 meters above sea level. It is surrounded by Kebena and Abeshghe woredas, and Cheha woreda.According to the statistics obtained from Wolkite's Town Municipality, the population is 70,796 out of which35, 848 are males and 34,948 females.This hospital provides full health care service for population guraghe zone and its surrounding. The total number of staff of the hospital is 406 including 6 general surgeon,5g–ynecologist-obstetrician, 6 internist, 45 general practitioners,10 health officers,5 anesthetists, 1dentist,128 nurses,23 laboratory technologists, and 24 pharmacists. There are a total of 174 beds in the surgical, medical, gynecology-obstetrics, and pediatrics wards of the hospital.

In obstetric and gynecologic ward, there are 3 delivery coaches, 5 beds for first stage of labor, 6 beds for normal post-partum, 23 beds for post-operative and other abnormal post-partum, and 28 beds for all gynecologic problems. The ward is currently run by 5 gynecologist and obstetrician, 13 midwifery and 1clinical nurses.

The numbers of deliveries attended at wolkite university specialized and teaching hospital hospital in the last 12 month were 2400.

4.2 Study design and period

Hospital based retrospective cross sectional study was conducted at wolkite university specialized and teaching hospital from June 1to August 30 2023 G.C

4.3 Source population

All pregnant women who was admitted and delivered (gave birth) at wolkite university specialized and teaching hospital in the past six months.

Study population

All women who wsa admitted and gave birth at wolkite university specialized and teaching hospital in the past six months and diagnosed to have preeclampsia or eclampsia

4.5. Inclusion and Exclusion criteria

4.5.1. Inclusion criteria

A mother who gave birth and has complete records in wolkite university specialized and teaching hospital during the study period was included in the study.

4.5.2. Exclusion criteria

Mothers who diagnosed as chronic hypertension before pregnancy and also recordes that do not contain full information were excluded.

4.6. Sampling techniques and sample size

Sample size was determined by using single population proportion by the previous proportion of preeclampsia among pregnant women in Dessie referral hospital was 8.4 %.(31).The sample size is determined by using single population proportion statistical formula

P=8.4%

Confidence level=95%

Margin of error=5%

- $n = \frac{(Z\alpha/2)^2 \mathrm{p}(1-\mathrm{p})}{(d)^2} n = \frac{(1.96)^2 0.084(1-0.084)}{(0.05)^2} = 118$

n= sample size

10% non-response rate

p= 8.4%

d=marginal error between sample and population (0.05)

Z α/2= critical value at 95% confidence interval

To compensate the non-response rate, so by adding 10% of sample size non response rate equal z

118*10/100=11.8

118+11.8=129.8~130

The final sample will be 130

4.7. Sampling technique

The study participant was selected from the list of mother with preeclampsia/eclamsia were used.by using registration log book by using systematic random sampling method was employed. Then we were calculate “k” value to select the study participant frome the sample frame which were recorded in the previous six month registration book of the hospital.The k interval of data collection was calculate as k=N/n where N= Total number of preeclampsia/eclampsia cases managed at WKU specialized hospital and n=the number of study sample size. . Since total number of preclampsia/eclampsia cases of counted cards from past 6 months records was 234 cards, K value was determined by using K =N/n =234/130 =1.8 which is approximately 2 , and The first card was randomly selected by using lottery method. Then the next eligible data was collected from record every 2 cards.

4.8. Study variables

- Maternal and perinatal outcomes complicated by preeclampsia and eclampsia;Maternal outcome (Acute renal failur, HEELP Syndrome, pulmonary oedema/edema, cerebrovascular accident, coaguiopathy ,abruption placenta, cortical blindness, death) perinatal outcome(still birth, Birth asphyxia, low birth weight, neonatal death)(17)
- Maternal data which were gathered include maternal age, parity, gestational age, residence,admission, blood pressure (BP), presence or absence of proteinuria on urine dipstick, the number and timing of seizure activity, and the mode arrival to hospital(referral or not) and mode of delivery.
- Lab values of interest including the complete blood count (CBC), creatinine;

- Data from antenatal clinic include number of visits and any documented proteinuria and BP readings during those antenatal visits.
- Current pregnancy history: Gravidity, Parity, Abortion, Gestational age in complete week, attended antenatal follow up.
- Past history of PIH

4.9. Operational definitions

The ACOG (2013) classification of hypertensive disorders of pregnancy was used Severe preeclampsia (preeclampsia with severe features) (30)

Pregnancy induced hypertension (PIH): is a systolic blood pressure (SBP) of 140 mmHg or higher and/or diastolic blood pressure (DBP) of 90 mmHg or higher on two or more consecutive occasion during pregnancy.

Eclampsia: Mother with signs and symptoms of severe preeclampsia and convulsions or coma.

Data collection process

Secondary data from hospital patient registration books and patient's cards will used. The data collection tool was the structured checklist of English version were used to collect the required information from the secondary data.. One or two collectors were assign to each month to collect the data from the patient registration books and/or cards. The questionnaires were filled by investigators from patients' card documented during study period.

Data quality control

The quality of data was controlled starting from the time of questionnaires preparations. Then, the collected data was clean, check, and cross check for its completeness and internal consistency by the data collectors follow by data entry. A data collectors was train on the objective of the study and data collection format. a close follow up were ensured until the data collection period. Each chart was given a case number to avoid mixing and for confidentiality.

Data analysis and management

After the data collection was completed used data editing, data manual spread sheet, and scientific calculator. Then after the data is entered in to epi data manager software version 4.2 it was processed using spss version 27 system. A descriptive statistic was perform toperformed to determine frequency, proportion and percentage. The data presentation was present by table, figures, chart, and bar graph.

Ethical considerations

Ethical clearance was obtained from department of public health. Communication with the hospital administrators was done through formal letter obtained from the department of Public Health, and information was obtained from delivery registration log book kept confidential. Personal identifiers, such as names was not be used during data collection, analysis, or report writing.

Dissemination Plan

The final result of this paper was submitted to Wolkite University college of medicine and health science, department of public health. The finding of this study was disseminated through presentation, publication, and distribution to relevant bodies. Hard and soft copies will be available in the library of WKU, for students as well as for other concerned bodies.

5.RESULT

5.1 Characteristic respondent

A total of 130 records of women were reviewed in this study and making the.Among the 130 pregnant respondent's majority of them are found in between 15-25 age group followed by 25-35 age group were 58%.One third of respondent was referred from other health facility. 104% of them were urban residents and others live in rural areas.

*Table 1 .**Characteristics of mothers at Wolkite University Specialized and Teaching Hospital, Gurage Zone, 2023.***

Variable	**Frequency**	**Percentage (%)**
Age in year		
15_25	61	46.9%
25_35	58	44.6%
>35	11	8.5%
Total	130	100%
Referral		
Yes	33	25.4%
No	97	74.6%
Total	130	100

5.2 Maternal and Prenatal complication among mothers with pregnancy induced Hypertension

Among mother admitted for PIH, Some are develop complication others are cured and discharged. 19 (14.6%) of hypertensive mother develop complication. Out of 130 mothers with PIH develop complication,36.8% develop severe preeclampsia, 11.5% develop Abruptio placenta and the rest 11.5%, 10% and 12.3% develop pulmonary edema, HELLP syndrome and Eclampsia respectively. And from those 36.9%were cured or discharge,and6(4.2%),and 2(1.5%) were Maternal Death and Referred respectively.

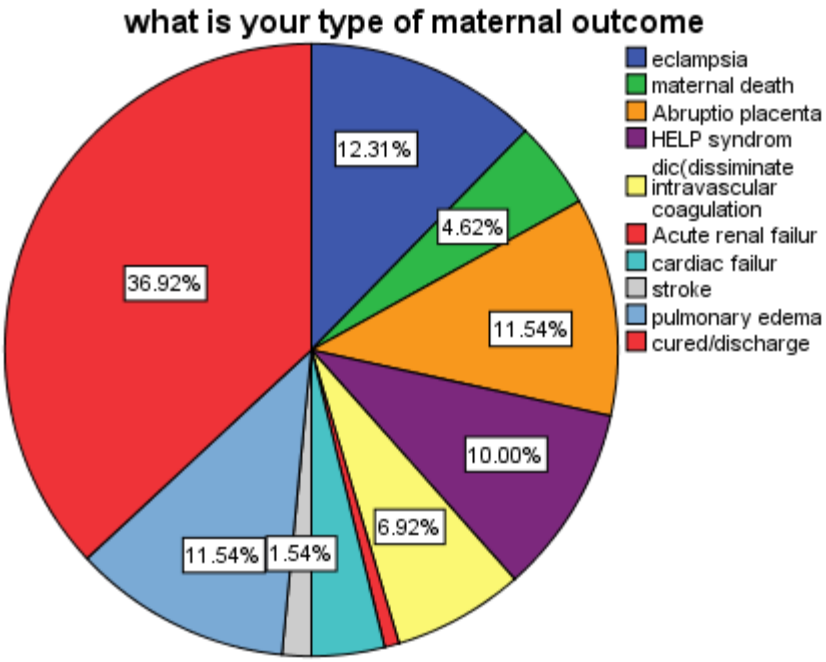


Figure 1:Shows Types of Maternal Outcome of Mother Diagnosis of PIH on admission at WKUSTH ,Gurage Zone,2023.

5.3 Birth outcome, prenatal mortality, among babies born to mothers with pregnancy induced hypertension

Regarding pregnancy related outcome among mother Develop PIH, ,6 was still birth and 2 (1.5%)early neonatal death in hospital which yielded prenatal mortality rate of 16|1000 births.and others are alive birth from those live birth 113(86.9)were good condition,14(10.8%) Rrefferd.

The proportion of very low birth weight 6(4.6%) had birth weight<1500 and 29(35.4%) birth weight <2500 for babies born to mother with PIH. Birth asphyxia (Apgar score < 7 at 5 minutes) occurred in 37 (28.5%) of live births. Among neonate weighted, 7 (5.4%) had birth weight Greater than 4000 and 88(54.6%), 64 (25.6%) between 1500-2500 respectively

Table 2: ***Prenatal mortality, birth outcome NICU admission among babies born to mothers with pregnancy induced hypertension***

Sex	**Frequency**	**%**
Boy	64	49.2%
Girl	66	50.8%
Outcome of delivery;		
Live birth	124	95.4%
Still birth	6	4.6%
APGAR Score		
At 1 minute		
<5	2	1.5%
6-7	40	30.8%
>8	88	67.7%
At 5 minutes……		
<5	2	1.5
6-7	37	28.5%
>8	91	70.0%
Early Neonatal death		

Yes	2	1.5%
No	128	98.5%
Fetal weight n=130		
1000-1500	6	4.6%
1500-2500	29	35.4%
2500-4000	88	54.6%
>4000	7	5.4%

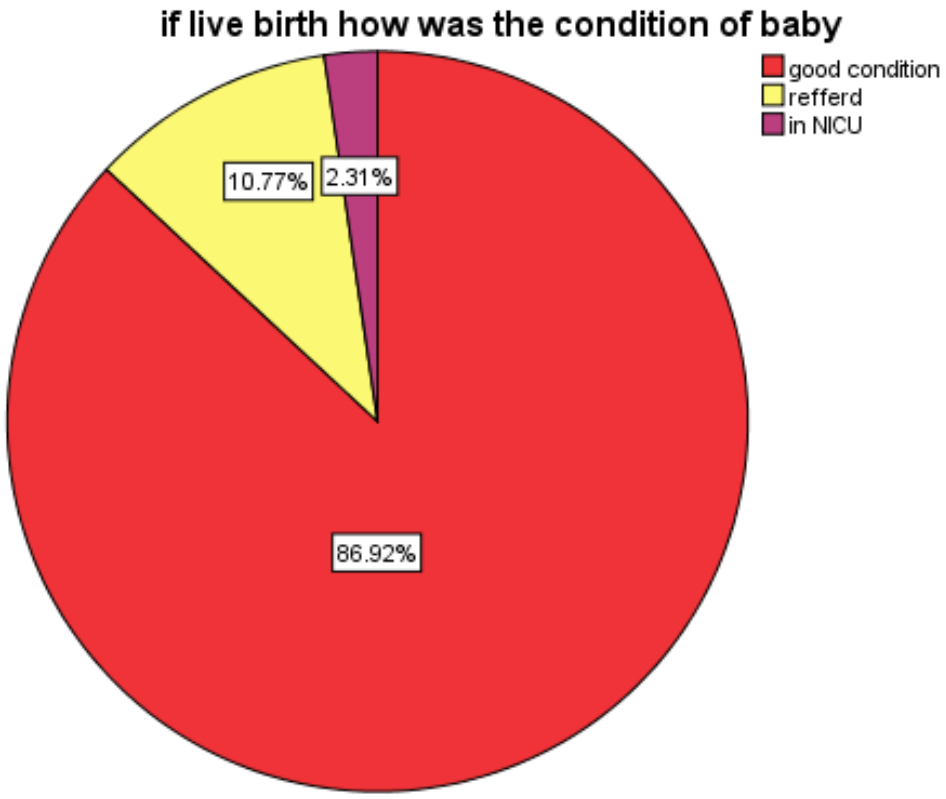


Figure 2:Shows Birth out come of PIH on admission at WKUSTH ,Gurage Zone,2023.

5.4 Obstetric characteristics

Out of the total study participants (130), more than half 68(52.3%) were primigravida followed 56 (40.0%) of the mothers were gravida II to IV and 5(11.5%) were grand multi. About 68(52.3) were prime Para followed by 56(43.1%) para two, 6(4.6%)were para three and above. For majority of mothers the gestational age 80(61.5%) were term, 45(35.2%) preterm and 3(2.3%) post term. 15(11.5%) of women had history of previous miscarriage. One hundred fourteen (86.7%) of them attended antenatal.

Twenty (15.4%) of them had Past history of pregnancy induced hypertension. Among the total deliveries 130(7.2%) had there pregnancy complicated by PIH and their classification is depicted in the tables. Of the one hundred thirty women who had PIH 58(44.8%) had their pregnancy complicated by gestational PIH, 53(40.8%) mild pre eclampsia, 24(18.5%)severe preeclampsia and7(5.4%) eclampsia[Table 2].

Table 3: Type of pregnancy induced hypertension mothers of women and Obstetric characteristics who gave birth at WKUSTH, Gerage Zon , 2023.

Variable	Frequency	Percentage(%)
Gravidity one	63	48.5%
two-four	52	40.0%
Grand Multi >5	15	11.5
Parity one	68	52.3%
Two	56	14.6
Three &Above	6	14.6

ABORTION		
YES	15	11.5
NO	115	88.5

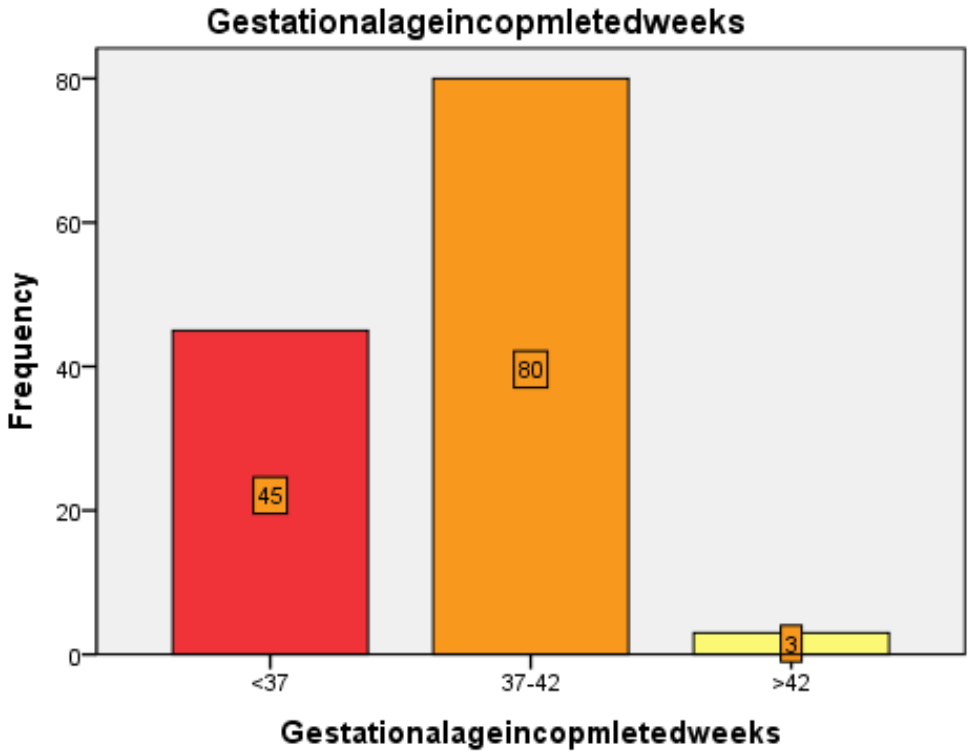


Figure 3 Shows Gestational age of of Mother Diagnosis of PIH on admission at WKUSTH ,Gurage Zone,2023.

Attended antenatal n= 130		
Yes	114	87.7%
No	16	12.3%
Past history of PIH n= 130		
Yes	20	15.4%
No	120	84.6%
Gestational PIH	53	40.8%
Preeclampsia without severity features	**24**	**18.5%**
Preeclampsia with severity features	**46**	**35.4%**
Eclampsia	**7**	**5.4%**

5.5Clinical presentation of mother Diagnosis of PIH on admission

Among mothers admitted for PIH, 28(21.8%) of mother presented by the clinical symptoms of nausea and vomiting whereas 22(16.9%), 17(13.1%), 13(10.0%) patients present with headache, dizziness, epigastria pain respectively. Among 130 mother admitted for PIH, 12(9.2%) of them were presented with edem and 12(9.2%) of them were presented maximum pressure.

Table 4: ***Clinical presentation and laboratory investigation done for mother Diagnosis of PIH on admission at WKUSTH Gurage Zone,2023***

Symptom at admission n=130	**Yes**	**No**
Headache	22(16.9%)	108(83.1%)
Dizziness	17(13.1%)	113(86.9%)
Epigastria pain	13(10.0%)	113(90.0%)
Visual disturbance	7(5.4%)	123(94.7%)
Nausea and vomiting	28(21.8%)	102(77.7)%
Convulsion	2(1.5%)	128(98.5%)
Edema	12(9.2%)	108(83%)
Maximumbloodpressure	12(9.2%)	108(83%)

Of the total of 130 mothers Diagnosis of PIH on Admission at Wolkite University Specialized and Teaching Hospital BP measurement were done. of this, 34(26.2%) of mother BP value were between normal range whereas 22(16.9%) of mother their diastolic BP value were ≥110mmhg.

Table 5: **Laboratory investigation done for mother Diagnosis of PIH on admission at WKUSTH, Gurage zone,2023**

BP VALUE n= 130		
90-120/60-89	40	30.8%
121-139/90-99	34	26.2%
140-159/100-109	34	26.2%
≥160/≥110	22	16.9%
Liver function		
Normal	117	90%
Deranged	13	10%
Renal function		
Normal	123	94.6%
Deranged	7	5.4%

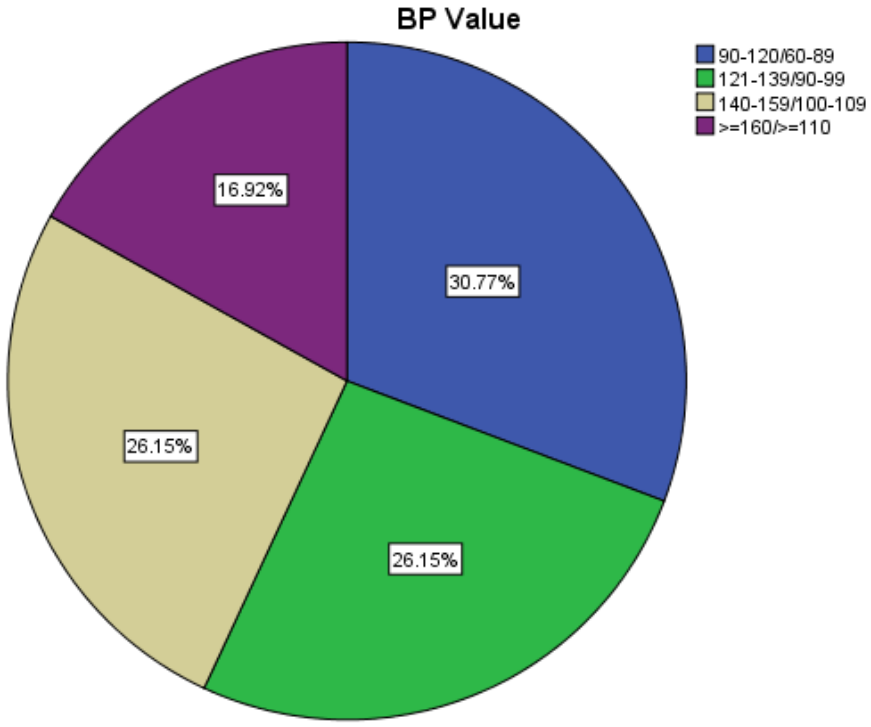


Figure4;

Figure 4 Show blood group status for mother diagnosis of PIH admission at WKUSTH GurageZone2023

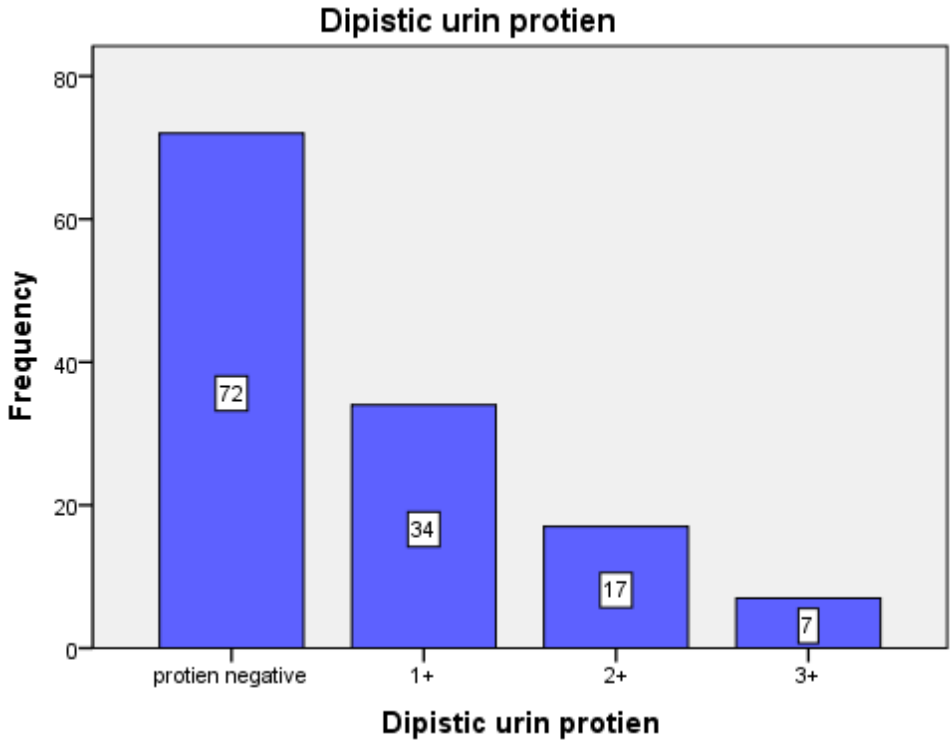


Figure 5 hows Dipistic urine protein status for mother diagnosis of PIH admission at WKUSTH Gurage Zone 2023

5.6 Intrapartum events and fetal outcome in mothers with hypertensive disorders of pregnancy

Of the total of 130 women admitted for the cases of PIH, onset of labour were spontaneous labour which is 66(50.8%) whereas 26(20.0%) were induction. The overall caesarean section and instrumental delivery rate for all PIH mothers was 107(42.8%) and 25 (10%) respectively.. The indication of induction was secondary to severe preeclamsia were 30.4% followed by Abruptio placenta which accounts 26.1%

Table 6: ***Intrapartum events and its outcome in mothers with hypertensive disorders of pregnancy at WKUSTH,Gurage zone 2023***

Onset of labour	**Frequency**	**%**
Spontaneous	104	80.0%
Induction	26	20.0%
Indications of induction		
Severe preeclampsia	7	30.4
Intrauterine fetal death	2	8.7%
Abruptio placenta	6	26.1%
HELLP Syndrome	1	4.3%
Fetal distress	3	13%
Post term	2	8.7%
Eclampsia	2	8.7%
Mode of delivery		
Spontaneous Vaginal delivery	66	50.8%
Instrumental	32	24.6%
Caesarean section	32	24.6%
indication of caesarean section		

Fetal distress	3	10.7%
Abruptio placenta	6	21.4%
Severe preeclampsia	3	10.7%
Previous C/S scar	13	46.4%
Elective Eclampsia	3	10.7%

6. DISCUSSION

This study shows that 130(7.2%) had there pregnancy complicated by PIH. From those women PIH Maternal out come for women with HEELP syndrome and eclampsia were higher than those for women with severe preeclampsia 10%,11.5%,38% respectively. The rate of women with sever preeclampsia higher than those women with other out come. Acoording to research finding in turkey. Maternal outcome for women with sever preeclampsia ,HEELP syndrome ,eclampsia, were higher than our study. which is 14.8%,12.2%,3.9%(14).Another study done at Mettu Hospital the magnitude of pregnancy related hypertensive disorder was 2.4%.sever

preeclampsia was the most prevalent diagnosis made to 35.5% approximately the same to our study(23). And in this study maternal out come of those maternal death were 2(1.5%)occurred and is similar to study fnding in turkey(11). There were 6(4.6%) still birth and 2 Early Neonatal Death (END) but according to jimma university specialized hospital study still birth and early neonata death were higher which is 42(27.5%),10(7.1%)(23).

This finding consistent with global prevalence of PIH is more similar in the range of 5-10 % of pregnancies and the study done in India showed that 5.3% of pregnancies were complicated by PIH (41), but lower when compared to studies done in Northern Nigeria 9.4% of all deliveries (34) and higher when compare to study done in Turkey reported approximately 5% of all deliveries were complicated by PIH (39). The discrepancy may be due to the socio-demographic profiles of mothers with PIH as indicated in this study,

The majorities were age group <35 (93%) while 46.9% were teenagers which are higher when compared to study done at TAH by SisayTeklu which were 6.6%.Younger age d nulliparous are risk factor for the development of PIH(41).

In this study 38.4% nulliparous develop PIH this is higher than study done by SisayTeklu in TAH report 32% of mothers complicated by PIH (41). Among mother admitted for PIH, 14.6% of hypertensive mother develop complication. Of this 36.8% develop severe preeclampsia which is higher than the study reported in Benin 21.4% (38). This difference may be due to the time period of the research were conducted.

The largest share of PIH has been taken by severe preeclampsia (51.9%) which was also the case in many other studies [42]. Eclampsia in our study shows 12.3%which is higher were compare to study done by A.Getachew at St.Pauls and Tikur Anbesa Hospital found Eclampsia in 3.6% of cases but consistent with study done in Netherland the incidence of Eclampsia were 6.2% (41). Termination of pregnancy before the onset of labour or induction were maternal or fetal indication were 20% of deliveries which is lower than 58.5% Reported by SisayTeklu in TAH.(41). This difference may be due to the small sample size.

Caesarian delivery rate of 24.6% in this studies which is comparable to study reported by A. Getachew which is 25% (32).Instrumental delivery rate of this study 24.6% which is greater with study done by T.Mekbib8.9% (40),and much greater than study done in Jimma university were 1.9 %(43). The small sample size and the fact that the study was undertaken in referral hospital may have contributed for increased cases of eclampsia in this study (33-38).

Based on the results of this study the prevalence of PIH is within the global range and majority of the pregnancies affected with the disease are due to the more severe forms of the disorder. The presence of PIH has been linked with poor maternal and perinatal outcomes (43) which were manifested by 40% of low birth weight.

7 Limitation

When we apply during research project reflect problem which is when data collect time in registration room befor recording the data gave money.

.8 CONCLUSION

Among the total deliveries attended at wolkite university specialized and teaching hospital, 130(7.2%) had there pregnancy complicated by PIH, and among 130 mother with PIH 46(36.6%) sever preeclampsia and 18(12.3%) eclampsia. This prevalence of PIH is within the global range and majority of the pregnancies affected with the disease are due to the more severe forms of the disorder. Therefore early recognition and management of mothers with PIH is an important instrument to reduce the case. Moreover improving the obstetric and neonatal care at delivery is essential to improve the maternal and perinatal outcomes of pregnancies complicated by the disorder Recognition of danger signs of eclampsia preeclampsia and early referral at community level is also very important. Further study on the subject preferably prospective with larger sample size is recommended to further assess the condition and improve its generalizability to the population at large.

9. RECOMMENDATION

Overall, the findings of this study have important policy implications for health on problems of problems have an important public health significance regarding maternal and neonatal health, special attention should be given to mothers and neonates in order to halt the progress of illness and its consequences. In the long run, these problems may be alleviated by integrating efforts from different sectors. However, short term efforts can be performed before long term solutions are obtained. Taking this in to consideration, the following recommendations are brought forward.

At community level: Raise awareness among mothers in the community regarding early sign and symptoms of preeclampsia/ eclampsia and inform them of the referral system by health extension workers (HEW) to help tackle the "Three delays" issues. This would also help identify mothers during their ANC and give them the appropriate care.

At Health Facility Level: in this study ANC coverage is encouraging, but still special focus should be given since ANC is a useful setting to diagnose and manage preeclampsia eclampsia, it is essential to design a better tracking system for ANC. Similarly, providing health facilities with MgSo4 drug could reduce and prevent convulsions and sever outcomes in mothers and neonates. In addition, strengthening and establishing neonatal intensive care units (NICU) in health facilities could be an important input in reducing maternal complications. In addition to this, the health facility has to be strength the data keeping system.

Finally, the conduct of further study is widely encouraged, in order to identify the causes behind the increase in preeclampsia/ eclampsia cases and maternal complications.

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ANNEXES

COMPLATION SHEET

SECTION I

PATIENTS IDENTIFICATION

101	Hospital Registration number	_____
102	Age	15-25__ ☐ 26-35__

		36-50__
103	Address	☐ Urban ☐ Rural
104	Referral	☐ Yes ☐ No
105	If “Yes” to question No. 5, from?	_____

SECTION II

OBSTETRIC HISTORY

201	Current pregnancy history	☐ Gravidity One __ Two-four __ Grandmulti (>5)_ ☐ Parity One __ Two__ Three & above__ ☐ Abortion Yes__No__
202	Gestational age in complete weeks	<37 37-42 >42 _____
203	Attended antenatal follow up	☐ Yes ☐ No
204	Past history of PIH	☐ Yes ☐ No

205	Type of PIH	☐ Preeclampsia without severity features ☐ Preeclampsia with severity features ☐ Eclampsia

SECTION III

PAST MEDICAL HISTORY

301	Past medical history of pregnant mother	
Chronic hypertension		☐ Yes ☐ No
Pregnancy induced hypertension		☐ Yes ☐ No
Diabetes mellitus		☐ Yes ☐ No
Chronic renal disease		☐ Yes ☐ No
Heart disease class 1 (No limitation of activity)		☐ Yes ☐ No
Heart disease, Class 2-4 (any limitation in activity)		☐ Yes ☐ No
Hematological disorder (Chronic anemia)		☐ Yes ☐ No
Hepatitis		☐ Yes ☐ No
Seizure disorder		☐ Yes ☐ No
HIV/AIDS positive		☐ Yes ☐ No
Others		_____
302	Family history of hypertension	☐ Yes ☐ No
303	Family history of preeclampsia	☐ Yes ☐ No

SECTION IV

CLINICAL FEATURES ON ADMISSION

401	Presenting symptoms (other than pregnancy/labour)	
Headache		☐ Yes ☐ No
Dizziness		☐ Yes ☐ No
Epigastric pain		☐ Yes ☐ No
Visual disturbance		☐ Yes ☐ No
Nausea and or Vomiting		☐ Yes ☐ No
Convulsions		☐ Yes ☐ No
402	Maximum Blood pressure	_____
403	Edema	☐ Yes ☐ No

SECTION V

RESULT OF INVESTIGATIONS DONE.

	501	BP value	90-120 60-89 121-139/90-99 140-159/100-109 ≥160/≥110

502	Blood group Rh	A-__,A+__,B-__,B+__,AB-__,O-__
503	Hematocrit	
504	Liver function	☐ Normal ☐ Deranged
506	Renal function	☐ Normal ☐ Deranged
6	Dipstick urine protein	☐ 1+ ☐ 2+ ☐ 3+

SECTION VI

DELIVERY

601	Onset of labour	☐ Spontaneous ☐ Induction ☐ Elective C/S
602	If not spontaneous, Indications	☐ Severe preeclampsia ☐ Intrauterine fetal death ☐ Abruptio placenta ☐ HELLP Syndrome ☐ Fetal distress ☐ Eclampsia ☐ Others, specify _____
603	Mode of delivery	☐ SpontaneousVaginal delivery ☐ Instrumental ☐ Caesarean section

604	If caesarean section what was the indication	☐ Fetal distress ☐ Abruptio placenta ☐ Severe preeclampsia ☐ Eclampsia ☐ Previous C/S scar ☐ Others, specify _____

SECTION VII

MATERNAL COMPLICATIONS

701	Is there any maternal complication	☐ Yes ☐ No

702	If yes to No.1 what?	☐ Eclampsia ☐ Abruptio placenta ☐ HELLP syndrome: ☐ DIC (Disseminated intravascular coagulation) ☐ Acute renal failure ☐ Cardiac failure ☐ Post-partum hemorrhage ☐ Stroke ☐ Pulmonary Edema ☐ Maternal death ☐ Eclampsia ☐ Abruptio placenta ☐ Others, specify _____

SECTION VIII

PERINATAL OUTCOME:

1	Sex	☐ Yes ☐ No
2	Outcome of delivery	☐ Aborted ☐ Still birth ☐ Live birth
703	If live births Apgar score	At 1 minute <5 6-7 >8 At 5 minute <5 6-7 >8

		At 10 Minute <5 6-7 >8
704	Birth weight	☐ < 1000 ☐ 1000 - 1500 ☐ 1500 - 2500 ☐ 2500 - 4000 ☐ > 4000
705	Neonatal Death	☐ Yes ☐ No
706	If “Yes” to No. 5, how old?	_____