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Research Article

Magnitude and Maternal Outcome of Postpartum Hemorrhage at Dilchora Referal Hospital in Dire Dawa City Administration

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Abstract

Background: Postpartum hemorrhage refers loss of more than > 500 and/or 1000 ml of blood within 24 hour following vaginal, caesarean delivery respectively. Postpartum hemorrhage (PPH) continues to be the leading direct cause of maternal mortality world-wide. It is highly fatal if diagnosis and treatment is not provided early. Even though postpartum hemorrhage is one of the major direct causes of maternal death in Ethiopia, there are only few studies done in the country. Therefore, assessing the magnitude of PPH and its outcome in the hospital setting is very important to give quality of service for the mother and decrease maternal mortality.

Objective: To assess magnitude and maternal outcome of postpartum hemorrhage at Dilchora Referral Hospital in Dire Dawa City Administration, 2018 GC.

Methods: A facility based retrospective study was conducted on all mothers who delivered at DilChora referral hospital and referred from other health facilities for delivery service during the September 1, 2017 to July 30, 2017 GC. Data was collected from March 1 - 30 2018 GC by using a structured questionnaire from the mothers card and labor ward reporting log book 239 sample size determination of obstetric mothers in the study area. Data was collected by using Systematic random sampling method from list of study unit. Data was entered and analyzed by computer (SPSS 20 Version).

Results: There were 3786 deliveries at Dilchora Referral Hospital during one year. Generally, out of 239 sample size, there were 31 cases of Post-Partum Hemorrhage who delivered at Dilchora Referral Hospital as well referred from other health facilities which makes the magnitude of 13% during the one year. However, 31 cases of PPH whose medical charts were retrieved were used for its completeness. About 234 (97.9%) of participants have live birth while 5 (2%) of participants have still birth. About 50 (20.9%) had shock (hypotension), and 35 (14.6%) had severe anemia while 154 (12%) of participants didn't have complication. Postpartum Hemorrhage mother attribute 23 (9.6%) of participants, of these shock (hypotension) while 5 (2.09%) were severe anemia and 3 (1.25%) of participants have no complication.

Keywords: *Postpartum Hemorrhage; Magnitude; Maternal Outcome; Dire Dawa; Ethiopia*

Introduction

Background

Postpartum hemorrhage or postpartum bleeding (PPH) is often defined as loss of > 500 ml blood following vaginal delivery or > 1,000 ml following cesarean delivery within 24 hrs. It is also defined as blood loss sufficient to cause hypovolemia, a 10% drop in the hematocrit or requiring transfusion of blood products regardless of the route of delivery [1].

Signs and symptoms may initially include: an increased heart rate, feeling faint up on standing and increased breathing rate as more blood is lost the women may feel cold, their blood pressure may drop, and they may become unconscious [2].

The causes of postpartum hemorrhage are uterine atony, trauma, retained placenta and coagulopathy, commonly referred to as the four T's. Uterine atony is the inability of uterus to contract and may lead to continuous bleeding; retained placental tissue and infection may contribute to uterine atony. Trauma: injury to the birth canal which includes the uterus, cervix, vagina, and the perineum which can happen even if the delivery is monitored properly. The bleeding is substantial as all these organs become more vascular during pregnancy. Tissue: retention of tissue from the placenta or fetus may lead to bleeding. Thrombin: a bleeding disorder occurs when there is a failure of clotting, such as with disease known as coagulopathies [3].

The leading cause of PPH is uterine atony (failure of the uterus to contract adequately after child birth) accounting for 60 - 80% of cases, followed by retained placenta and injury to genital tract. Despite the global significance of PPH, little is known about factors that contribute to PPH, especially in less developed areas where 99% maternal death occur [4].

However reported risk factors include fetal macrosomy, polyhydramnios, uterine myoma, abnormal placentation, grand multi parity, uterine infection, previous PPH, antepartum hemorrhage, maternal obesity, operative deliveries (forceps and vacuum assisted deliveries), anemia, induced labor, augmented labor, episiotomy, pre-eclamsia and premature birth, PPH may develop in patients with no risk factors [5,6].

The outcome of PPH are ARF, ARDS, severe anemia, cardiac arrest, shock, and Death (if it is not manage early). Majority of maternal deaths due to PPH can be avoided and the key is early diagnosis and proper treatment. However, PPH is one of the most challenging complications faced by clinicians, it is most preventable and treatable through active management of the third stage of labor (AMTSL) by conventional uterotonics, among which oxytocin is preferred. However, use of oxytocin is not feasible in many low income settings where most births take place at home with untrained birth attendants. Immediate resuscitation with attempts to treat the cause forms the cornerstone of management of PPH [8].

Statement of the problem

Although other complications are occurred during pregnancy, PPH is one of the most complication and a frequent health problem during pregnancy and child birth and it can cause severe anemia, ARDS, ARF, coma, cardiac arrest leading to death. Globally PPH occurs about 8.7 million times and result in 44,000 to 86,000 deaths per a year making it the leading cause of death during pregnancy, about 0.4 women per 100.000 delivers die from PPH in united kingdom [9].

Currently, in developed countries, pulmonary embolism is the leading cause of the maternal mortality, however in developing countries PPH continuous to be the leading cause, accounting for 25 - 43% of maternal deaths. Postpartum hemorrhage is a frequent complication of deliveries and its incidence is commonly reported as 2 - 4%, after vaginal deliveries and 6% after cesarean-sections (C/S); with uterine atony being the cause in about 50% of the cases [4]. In China, it is the most common serious obstetric complication and the leading cause of maternal mortality, accounting for 49.9% of maternal death [1].

In developing world about 1.2% of delivers are PPH and when PPH occur about 3% of women died and 100,000 deliver die in sub-Saharan Africa, health system face constraints that hinder the delivery of emergency care, which is vital for saving the lives of women who develop PPH. Guidance to aid clinical practice is not commonly available in developing countries. Socio-economic status and illiteracy also may contribute for the prevalence of PPH [10].

Ethiopia is not an exception to the problem with similar antecedents; it is one of the 57 countries in the world with a very critical shortage of health workers [11]. For instance, there are only 1.98 physicians per 100, 000 people and 0.39 health worker per thousand populations, the ratio of key health professionals working closer to the community, midwifes and nurses, is very low, 1:74,086 and 1:4,250,

respectively, leaving mothers without skilled assistance during child birth [12].

Long transports from home or primary health care facilities, lack of skilled providers, and lack of intravenous fluids and/or a safe blood supply often create long delays in instituting appropriate treatment. The lack of skilled attendants at delivery who can provide even the minimum of care, long transport times to facilities that can manage uterine atony or severe lacerations of the genital tract and unattended obstructed labor leading to a ruptured uterus conspire to elevate PPH to its position as the number one killer of women during child birth [11].

Maternal mortality in resource-poor nation attributed to the three delays like delay in deciding to seek care, delay in reaching care in time, and delay in receiving adequate treatment. Most births occur at home with unskilled attendant, and it takes skill to predict or prevent bad outcomes and medical knowledge to diagnose and immediately act on complications. By the time the lay midwife or family realizes there is a problem, it is too late. Many villages do not have access to paved roads and many families do not have access to vehicles, so women with life-threatening conditions do not make it to the facility in time [12].

Ethiopia's maternal mortality ration per 100,000 is among the highest in the world with 412 deaths per 100,000 live births. It is estimated that94% of births in Ethiopia occur at home. Ten percent of maternal deaths in Ethiopia is attributed to PPH. However, this figure is much lower than the African average, 33.9% and could be due to under-diagnosis and/or under reporting given the poor infrastructure and very low ratio of health professionals to the public prevailing in Ethiopia. Some unpublished documents claim PPH contributes 25 - 30% of maternal deaths in Ethiopia [13].

Although the vast majority of cases of PPH have no identifiable risk factor, young age at marriage and low contraceptive use among many women in the developing world result in high total fertility rates, which results in more grand multiparous giving birth in low resource countries compared with more developed countries.

Prevention involves decreasing knowing risk factor including if possible with the condition and giving the medication oxytocin to stimulate the uterus to contract shortly after the baby born. Misoprostol may be used instead of oxytocin in resource poor settings. Treatment May include IV fluids, blood transfusion, and the medication ergotamine to cause further uterine contraction. In 2017 study found that Tranexamic acid deceased risk of death [14].

Even if the problem indicated in many countries, from our knowledge, it never been studied the magnitude of PPH and no compressive data exist for its outcome at Dilchora referral hospital. Therefore, further study is needed as PPH is frequent health problem, result in morbidities like severe anemia, ARDS, ARF, cardiac arrest and others. And it also the leading cause of death during pregnancy and child birth.

Significance of the Study

- The impact of knowing the magnitude and maternal outcome of PPH at Dilchora Referral hospital helps to recognize and initiates the midwifery and other health professional who found in Dilchora Referral hospital, to prevent and decrease the problem and reduce morbidity and mortality to PPH.
- In addition to increasing maternal satisfaction for pregnant mothers, this study help to improve the prevention and control program by determine the magnitude and outcome of PPH and also was have a paramount implication in identifying target group. The rational of this study is to provide evidence about existing constraints with PPH to policy makers and other stake holders for further improvement of service provision in future.
- This research can also help as back ground data for future researches on related topic by indicating the magnitude and maternal outcome of PPH.

Conceptual Framework

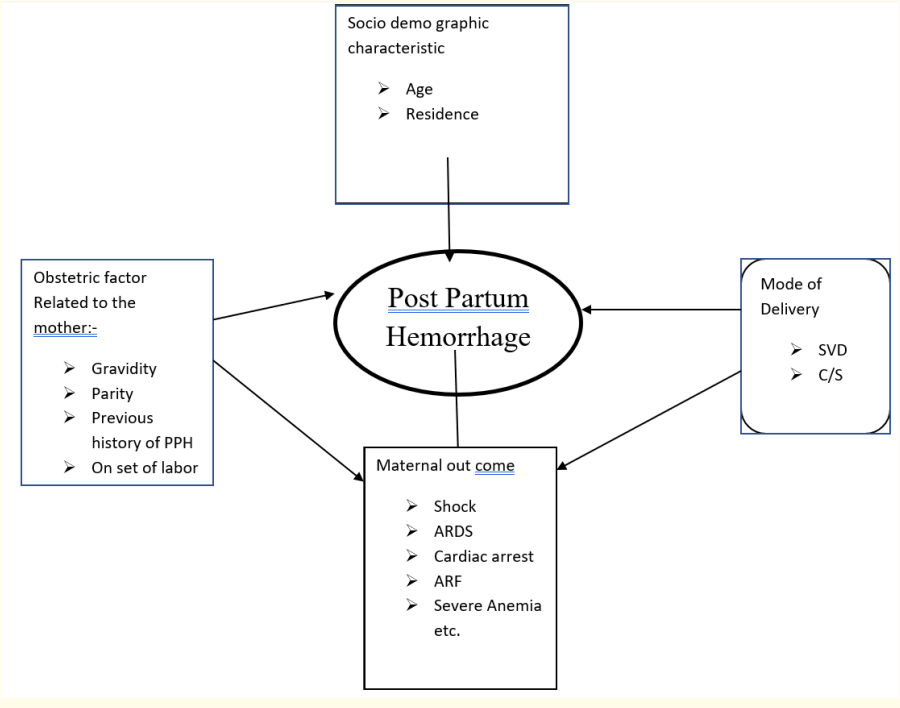

Figure 1: *Conceptual frame work. Source: This conceptual framework was developed based on review of different literatures and textbooks.*

Objectives of the Study

General objectives:

- To assess magnitude and maternal outcome of postpartum hemorrhage at Dilchora Referral Hospital, in Dire Dawa City Administration, 2018 GC.

Specific objectives:

- To determine the magnitude of postpartum Hemorrhage at Dilchora Referral hospital, Dire Dawa City Administration, 2018 GC.
- To assess the maternal outcome of postpartum hemorrhage at Dilchora Referral hospital, Dire Dawa City Administration, 2018 GC.

Materials and Methods

Study area and period

This study was conducted at Dilchora Referral Hospital in Dire Dawa City Administration from December 1, 2017 to April15, 2018 G.C. Dire Dawa is one of the Federal city administrations in Ethiopia which is located at a distance of 515 kilo meters away from Addis Ababa

(the capital city) to the East. The administration has 9 urban and 38 rural kebeles. Based 2007 census conducted by central statistical agency of Ethiopia (CSA), Dire Dawa has a total population of 342,827. Of whom, 171,930 are men and 397,170 are women; 232,854 (69.92%) of them are considered urban inhabitants, with estimated area of 1,231.20 square kilometers (CSA, 2007).

It is one of governmental hospitals found in Dire Dawa city. The hospital gives services for community and teaching purpose. The hospital provides Gynecologic and obstetrics, surgery, Internal Medicine, Pediatrics and reproductive health services including Mother and Child Health (MCH) and other services. In the maternity ward there are 14 midwife who interchangeably work for the whole 24hrs of a day, with four Obstetrics and Gynecology specialists who usually available for difficult cases by on call. Since the hospital is serving as a teaching site, especially for Integrated Obstetric and Emergency surgery program, those students are valuably supporting the hospital on overall activities of the ward.

Study design

A facility based retrospective cross-sectional study design was used to assess magnitude and maternal outcome of postpartum hemorrhage at Dilchora Referral Hospital, in Dire Dawa city Administration.

Population

Source population

All obstetric mothers who delivered at Dilchora Referral hospital during the period of January 1, 2017-December 30, 2017 GC.

Study population

All sampled obstetric mothers who delivered at Dilchora Referral hospital during the period of January 1, 2017-December 30, 2017 G.C.

Sample size determination and sampling technique

A Single population proportion formula, $n = [(Z)]^2 p\ (1-p)]/d^2$ = was used to estimate the sample size with the following assumption:

Where: n = Minimum sample size

p = 17% is prevalence of PPH (22).

Zα/2 = The standard normal variable with 95% CI at (1-α) % CI and α is mostly 5% = 1.96

d = Margin of error/ an absolute precision = 5% = 0.05

N = is total obstetric mother who delivered at Dilchora Referral hospital during the one year.

2009 = 3786 in year = 316 in month

N = 316

$$n = \frac{(1.96)^2\ (0.17)\ (1-0.17)}{(0.05)^2} = 217$$

Then 10% non-response rate was added

N = 217+22 = 239 is the final sample size of obstetric mother who delivered at Dilchora Referral hospital.

Sampling technique

The sampling technique used for this study was systematic random sampling method from list of all obstetric mothers delivered at Dilchora Referral hospital during study period. Then clients were selected systematically by K^{th} value.

K^{th} value = $\underline{N}$ = where K^{th} value = Interval at which to get the client nf

K^{th} = N/nf = 316/239 = 1.3 = 1.

Inclusion criteria

- All obstetric mothers who visited Dilchora Referral hospital delivery room during the period of Jaunary 1, 2017 to December 30, 2017 G.C.

Exclusion criteria

- Incomplete patients' cards were excluded.

Study variables

Independent variable

- Maternal age
- Parity
- Mode of delivery
- Gestational age
- Multiple pregnancy
- Birth weight
- Onset of labor
- Previous history of PPH.

Dependent variable

- Postpartum hemorrhage.

Data collection procedure

First all sampled delivered mothers was listed from the daily record of labor ward reporting log book. Then Delivered mothers cards has been collected from card room by data collectors. The data has been collected by Three midwifery graduating students was partici-

pated and two card room staffs using structured data collection format prepared for this purpose by English language and Mean while the completeness of the data were checked every day by principal investigator.

Data quality assurance

The principal investigator and Co-investigators supervised the data collection process. Training was given to the data collectors. Completeness of data collected was checked every day by the principal Investigator and Co-investigators. Based on the pretest the questionnaire was being pre-tested in Sabian Primary hospital in Dire Dawa city on 5%, to assess the reliability of data collection instruments, questionnaire was revised and edited.

Data processing and analysis

The collected data entered, coded, cleaned and analyzed using computer (SPSS 20 Version). The resulting data was presented using frequency tables, graphs and pie chart. Errors related to inconsistency of data was checked and corrected during data cleaning. Descriptive statistics such as proportions, percentages, frequency distributions and appropriate graphic presentation besides measures of central tendency was used for describing the data.

Operational definition

- **Postpartum hemorrhage:** Bleeding per vagina in excess of 500ml after delivery of the baby or >1000ml of blood loss with cesarean section [1].
- **Adequate fluid resuscitation**: Who receives bolus of fluid within the first 15 minutes of identified bleeding.
- **Parity:** Is the state of giving birth to an infant or infants, alive or dead within estimated length of gestation of at least 28 weeks.
- **Outcome of PPH**: Any problem associated with health after PPH.
- **Antenatal care:** Is the medical care and supervision given to the pregnant women.

Ethical consideration

Ethical clearance was obtained from the Dire Dawa University, College of Medicine and Health Science, Department of midwives. Permission was also obtained from the hospital's medical director and department of gynecology and obstetrics through formal letter obtained from department of Midwifery & was presented to the College of Medicine and Health Science.

Dissemination of result

The result of the research study findings to Dire Dawa University, Dilchora Referral hospital, and Dire Dawa Health Berau, midwifery department, the outcome of the study was disseminated to concerned body such as service provider, policy maker and community member.

Furthermore, the paper will be presented on workshops, seminars, and on other professional gatherings. The results will also be published in peer reviewed journal.

Result

Socio-demographic characteristics

The age of the Obstetric mothers ranged between 15 - 49 years with a mean age of 27.6 years and SD + 0.78. Majority of the respondents were between 25 - 29 years 110 (46%). In this study 170 (71.1%) of respondents live in Dire Dawa city.

Socio demographic characteristics	Frequency	Percentage (%)
Age in years		
15 - 19	15	6.35%
20 - 24	35	14.6%
25 - 29	110	46%
30 - 34	60	25.1%
35 - 39	10	4.2%
40 - 44	5	2.1%
45 - 49	4	1.7%
Total	239	100%
Address		
In Dire Dawa city	170	71.1%
Out of Dire Dawa city	69	28.9%
Total	239	100%

Table 1: *Socio-demographic characteristics of obstetric mothers in Dilchora referral Hospital, Dire Dawa city Administration, 2018 G.C.*

Maternal characteristics of obstetric mothers

The majority of our study,149 (62.3%) of participants were between gravida two and four. In this study majority of 135 (56.5%) were between para two &four. In the study population and 31 (13%) of participant had PPH. In our study 170 (71.1%) of participant had ANC follow up. The majority of our study 15 (6.3%) of the participants have history of abortion. In our study 28 (11.7%) of the participants had history of previous C/S. Majority of 217 (90.8%) of participants had no history of PPH. Majority of 230 (96.2%) of participants had no history of previous still birth, 234 (98%) of participants had no history of uterine curettage.

Maternal characteristics		Frequency	Percentage (%)
Gravida	I	60	25.1%
	II-IV	149	62.3%
	>=V	30	12.6%
Parity	I	60	25.1%
	II-IV	135	56.5%
	>=V	44	18.4%
PPH	Yes	31	13%
	No	208	87%
ANC follow up	Yes	170	71.1%
	No	69	28.9%
History of abortion	Yes	15	6.3%
	No	224	93.7%
History of previous C/S	Yes	28	11.7%
	No	211	88.3%
History of previous PPH	Yes	22	9.2%
	No	217	90.8%
Previous still birth	Yes	9	3.8%
	No	230	96.2%
Previous uterine curettage	Yes	5	2%
	No	234	98%

Table 2: *Maternal characteristics of obstetric mothers in Dilchora referral Hospital, Dire Dawa city administration, 2018 GC.*

Intra obstetric event and ante obstetric event

In this study ante partum obstetric event among 239 obstetric mothers; abruption placenta accounts for 15 (6.3%) and placenta Previa took for 9 (3.8%). In our study 35 (14.6%) women current ante partum hemorrhage and polyhydramnios 11 (4.6%). Hemoglobin level was also determined in all postpartum women hemoglobin level was < 7% in 20 (8.4%). Their delivery characteristics were singleton 216 (90.4%), twins 23 (9.6%).

Among study participants, majority 30 (12.5%) of them have prolonged labor, and 15 (6.3%) of participants have obstructed labour. The majority of our study uterine atony 19 (7.94%). Few of them were also develops genital tract trauma like vaginal wall laceration, Perineal tear and cervical tear 30 (12.5%), 35 (14.6%) and 8 (3.3%) respectively.

The Majority of mode of delivery was 190 (79.5%) vaginal. The third stage was prolonged in 24 (10%) and evacuation and curettage was the most removal method in 3 (1.25%).

In this study Episiotomy was performed 53 (22.2%) and episiotomy extension occurred in 45 (18.8%). Regarding the management of third stage labor only 205 (85.8%) has got active management of third stage labor. Out of 85.8% who received AMTSL, 205 (100%), 190 (92.7%), 199 (97%) receives components of AMTSL namely uterotonics, cord traction and uterine massage respectively. In most of the cases 216 (90.4%) have got adequate fluid resuscitation in the first 30 minutes of identified bleeding.

From those 239 mothers delivered in Dilchora referral Hospital, 36 (100%) transfused with one to above three unit of blood; one unit 20 (55.5%), two unit 9 (25%), above three unit7 (2.9%) of whole blood.

Ante partum and Intra partum event		Frequency	Percentage (%)
Abruptio placenta	Yes	15	6.3%
	No	224	93.7%
Placenta previa	Yes	9	3.8%
	No	230	96.2%
Current APH	Yes	35	14.6%
	No	204	85.4%
Polyhydramnios	Yes	11	4.6%
	No	228	95.4%
Delivery characteristics	Singleton	216	90.4%
	Twins	23	9.6%
Obstructed labour	Yes	15	6.3%
	No	224	93.7%
Prolonged labour	Yes	30	12.5%
	No	209	87.5%
Mode of Delivery	Vaginal	190	79.5%
	C/S	49	20.5%
If Vaginal	SVD	145	60.7%
	Instrumental with epistomy	11	5.8%
	SVD with epistomy	30	15.8%
	Breech	3	1.6%
	Destructive	1	0.5%

Episiotomy	Yes	53	22.2%
	No	186	77.8%
Other than Epi Genital tract trauma	Vaginal wall laceration	30	12.6%
	Perineal tear	35	14.6%
	Cervical tear	8	20.5%
	Absent	166	69.5%
Uterine rupture	Yes	2	0.8%
	No	237	99.2%
Uterine Atony	Yes	19	7.9%
	No	220	92.1%
AMTSL	Yes	205	85.8%
	No	34	14.2%

Table 3: *Antepartum and intrapartum event in Dilchora referral Hospital, Dire Dawa city administration, 2017 GC*

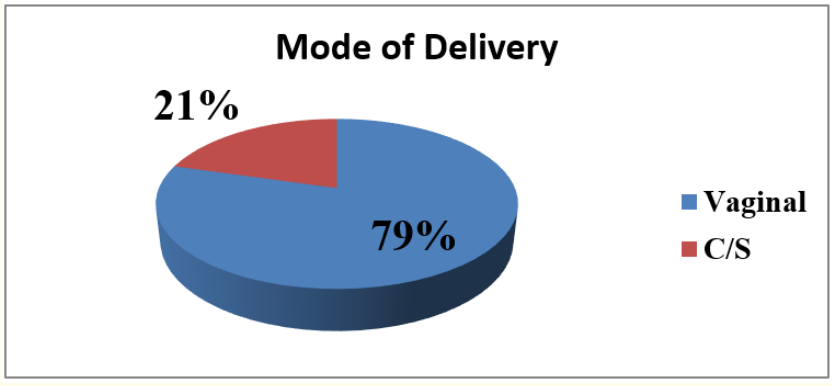

Figure 2: *Mode of delivery of obstetric mothers at Dilchora referral hospital, 2017 G.C.*

Magnitude of PPH and distribution of PPH

Of the total 239 respondents, about 31 (13%) mothers developed PPH. In our study majority of the respondents 25 (80.6%) of with PPH were between para two and four. In this study 2 (6.45%) of mothers with PPH did not have ANC follow-up in any health institution. Majority of 27 (87.1%) of mother with PPH was lived in Dire Dawa city. In this study 29 (93.5%) of obstetric mother with PPH had no history of abortion but 2 (80.6%) of obstetric mothers with PPH had History of Abortion. In this study 27 (11.3%) of obstetric mothers were no history of previous PPH while 5 (2.1%) of obstetric mothers were history of previous PPH. In this study 3 (1.3%) of PPH mothers had history of c/s while 28 (11.7%) of PPH mothers had no history of c/s. About 28 (90.3%) of mother with PPH were history of live birth while the rest were no still birth.

Regarding the ante partum obstetric event among women with PPH; abruption placenta accounts for 3 (9.67%) and placenta Previa took for 2 (6.5%). About 10 (4.2%) women with PPH were complicated with current ante partum hemorrhage. Few of them also encounter polyhydramnios 4 (12.9%). Hemoglobin level was also determined in all post partum women with PPH at presentation and hemoglobin level was < 7% in 9 (29%). Their delivery characteristics were singleton 216 (90.4%), twins 23 (9.6%).

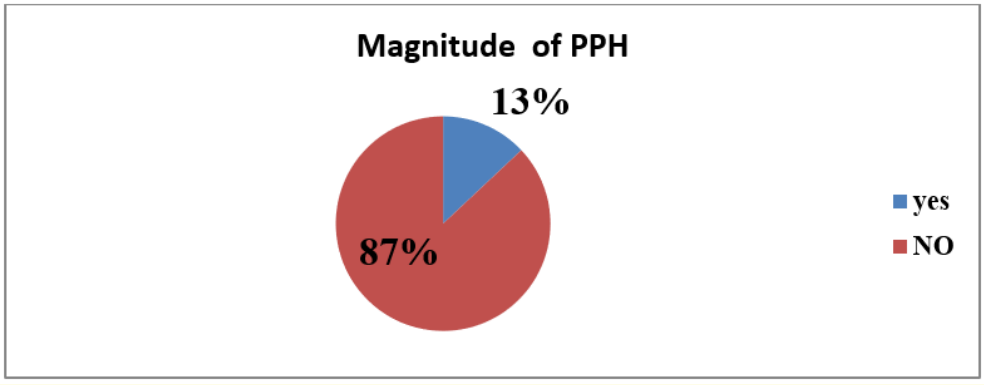

Figure 3: *Magnitude of PPH at Dilchora referral hospital, 2017 GC.*

Distribution of PPH by maternal characteristics

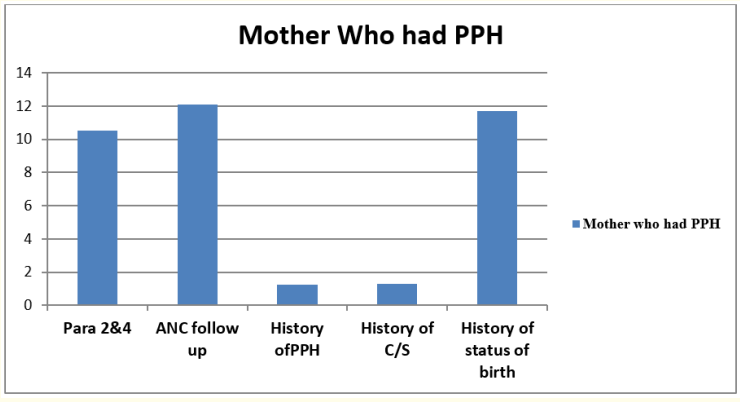

Figure 4: *Distribution of PPH mother by maternal characteristics at Dilchora referral hospital, 2017 G.C.*

Maternal outcome

In this study 2 maternal death was reported in this study, 50 (20.9%) had shock (hypotension), and 35 (14.6%) had severe anemia while 154 (64%) of participants didn't have complication.

About 30 (96.8%) of their baby were live birth and 1 (3.2%) were still birth and 27 (87%) of participant were gestational age < 37 weeks with PPH mothers 4 (12.9%) of mothers with PPH who delivered < 2500 grams of baby while 28 (90.3%) PPH mothers who delivered 2500 - 3999 grams of baby and > 4000 grams baby 3 (9.67%).

Distribution of PPH by maternal Outcome

The total of 236 mothers' 31 cases of PPH developed. The main outcome of our study mothers,23 (74.2%) of participants were shock (hypotension) and 5 (16.1%) of participates were severe anemia.

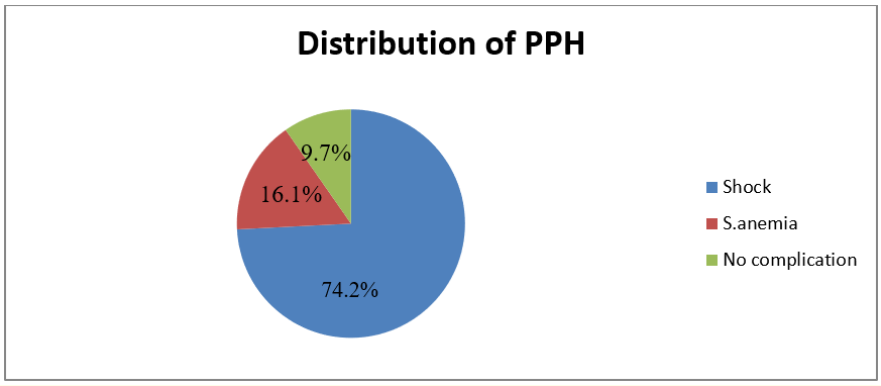

Figure 5: *Distribution of PPH by maternal outcome, DRH, 2017 GC.*

Discussion

In our study the magnitude of PPH was 13% during the one year retrospective study higher the Study was conducted in dessile referral hospital the magnitude 5.4%, the study was conducted in TASH by kabebush Abera was 1.4%, in jimmalimu Genet hospital was 8.4%or the study conducted in Africa 10.5%. This could be due to low utilization of ANC follow up and lack of skill to manage PPH [16,20,23,24].

The study conducted in Pakistan the magnitude of 21% in our research 13% the magnitude is low than study done in Pakistan. Awareness about ANC follow up and use skilled birth attendant when due to in most delivered mothers come in urban means in Dire Dawa city [11].

In our study the maternal outcome of PPH, Shock 23 (74.2%) and severe anemia 5 (16.1%) and 2 (6.5%) maternal death was reported the study done in Pakistan was maternal death about 7.2% and the study conducted in Guninea severe anemic was 31% and in AAU, 2013 black lion hospital was 49.3% in TASH by Kabebushabera shock 60.6% and severe anemia 49.5% very difference due to awareness about ANC follow up and the compilation of PPH and after delivery the mothers visit post natal visit [16,20].

In our study Hematocrit level was < 7% in 20 (8.4%) of the cases at presentation which is lower which also comparable with research done by Dr Muluken Gashaw, AAU, 2013 at Black Lion Hospital and Gandhi Memorial Hospital; Hct level less than < 7% at discharge in 50.8% of cases due to Institutional delivery and awareness about ANC follow up [25].

In this study the majority of PPH mother attribute, 30 (12.5%) of their baby were live birth and 1 (0.41%) of Still birth which is higher to Study conducted in Gondar 2014, PPH mother attribute, 5 (2.5%) still births and 38 (18.7%) low birth weights. This finding was indicate at least a few number of still birth, low birth weight delivered by PPH mothers so, PPH effect on birth weight of baby the possible difference and might be due to ANC service awareness to prevent complication after delivery [22].

In our study prolonged labor 12.5% possible difference the study done in limmu genet hospital was 7.6% it might be due to low awareness about ANC follow up [23].

Conclusion

The magnitude of PPH was 13% during the one year retrospective study and it was significant maternal outcome. Shock was the most common complications they were encounters 50 (20.9%) and 23 (74.2%) from those PPH mother were shock (hypotension) was 23 (74.2%) and 5 (16.1%) of severe anemia. Only Two maternal death was reported in this study.

Recommendation

Based on the findings of this research, the following recommendations were made:

- **To Dire Dawa Health Bureau**
    - Where nurse-midwives and other health care professional will be trained and retrained on the strategies used in the prevention and management of PPH should be periodically organized.
    - Provision and training of midwives in the use of anti-shock garment.
- **To Dilchora Referral Hospital**
    - Record keeping and documentation as well completeness should be emphasized in our practice.
    - All Health professional like midwife participate on reducing maternal mortality and morbidity by Active management of third stage of labor and to improve the ANC follow up and PNC.
    - Giving care of PPH mothers and the new born in actively detecting and managing life threatens emergency condition.
- **For researchers**
    - Further study will be done in order to alleviate all the limitations that this study encounters because the study has suffered the biases inherent to such study designs.

Strength of the Study

1. Three midwifery data collectors were participate for data collection.
2. Quality of data was maintained by doing pretest, provision of training for data collectors and strict follow-up by supervisor.

Limitation of the Study

1. Since the study was on secondary data, some mother's medical records were lost.
2. Some laboratory results were not available.

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