

Review of Maternal Death Forms in Mahisagar District, Gujarat

By

Palakkumar Rajnikant Patel

*Dissertation submitted for the partial fulfillment of the
MBA Hospital and Health Management*

Academic year, 2015-2017



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TO WHOMSOEVER MAY CONCERN

This is to certify that **Dr. PALAKKUMAR.RAJNIKANT.PATEL** student of MBA Hospital and Health Management from The IIHMR University, Jaipur has undergone Dissertation training at **NATIONAL HEALTH MISSION, GUJARAT** from **01/02/2017 to 01/05/2017**.

The Candidate has successfully carried out the study designated to him during dissertation training and his approach to the study has been sincere, scientific and analytical.

The dissertation is in fulfillment of the course requirements.

I wish him all success in all his future endeavors.



**Dean Academics and Student Affairs,
The IIHMR University Jaipur**



**Associate Professor,
The IIHMR University, Jaipur**



DISTRICT HEALTH SOCIETY

**DISTRICT PROGRAMME MANAGEMENT UNIT
HEALTH BRANCH – DISTRICT PANCHAYAT MAHISAGAR**

DHS/MSG/CERTE/2017

Date:-05/05/2017

CERTIFICATE

This is to Certify that **Dr.Palak Rajnikant Patel** Studying in MBA_HM 20th Batch, HealthStream, In Recognition of Having Successfully Completed His Dissertation in the Department of National Health Mission, Gujarat Has Successfully Completed His Project On Review Of Maternal Death Forms As the Framework Of Three Delays In Mahisagar District, Gujarat. From : 01/02/2017 to 01/05/2017 In Partial Fulfilment Of The Requirement for the Award of “MBA IN HOSPITAL & HEALTH MANAGEMENT”, is a Record of the candidate's Own Work Under My Guidance. He comes across as a committed, Sincere & diligent person who has a strong drive and zeal for learning.

We wish him all the best for future endeavours.



**Dr.Dharmendra D Chauhan
RCHO**

District Panchayat Mahisagar

Date: 05/05/2017

Place:-Lunawada(Mahisagar)

CERTIFICATE BY SCHOLAR

This is to certify that all ethical issues have been considered while collecting data for my dissertation titled **Review of Maternal Death Forms in Mahisagar District, Gujarat** And submitted by Dr. PALAKKUMAR RAJNIKANT PATEL Enrollment No 0316 under the supervision of Dr. Neetu Purohit for award of MBA in Hospital and Health Management in Health and Hospitals of the University carried out during the period from 01/02/2017 to 01/05/2017embodies my original work and has not formed the basis for the award of any degree, diploma associate ship, fellowship, titles in this or any other institute or other similar institution of higher learning.



Signature of student



Signature of Mentor

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CERTIFICATE BY SCHOLAR

This is to certify that all ethical issues have been considered while collecting data for my dissertation titled **Review of Maternal Death Forms in Mahisagar District, Gujarat** From: 01/02/2017 to 01/05/2017.



Signature of student

ABSTRACT:

Background: High Maternal mortality is a challenge in reaching MDG 5 target. India still has not shown satisfactory progress in its MDG 5 achievements. Maternal death review is a way to understand the hurdles and bottlenecks in reaching the target. There are many factors which can avoid women from access high excellence maternal care. Recognizing the different barrier women face in achieving the timely and efficient medical care needed to prevent deaths happening in pregnancy and childbirth should be on top of the agenda for health care systems promoting Safe Motherhood Practices.

The 3 Delay Model provides such a frame work to explore and identify different barriers women face in accessing quality, timely and effective maternal health care services needed to prevent such deaths.

This study provides an assessment framework based on the Three Delay Model to identify which of these factors are impacting on the current burden of maternal mortality in Mahisagar District, Gujarat.

Objectives:

1. To describe the type of delay commonly contributing to the burden of maternal deaths in Mahisagar District during study period
2. To study the causes of deaths and recommend some other possible interventions to reduce & prevent maternal deaths.

Method: A community based (Review of verbal autopsy/Maternal Death Forms) cross-sectional study was adopted. Last 2 years of Maternal Death Review Verbal Autopsy Forms of Mahisagar district were collected and reviewed for analysing causes of maternal death. Causes were analyzed with respect to three delay model, other

contributory factors, and associated socio epidemiological factors. A total of 62 maternal deaths records were reviewed.

Conclusion: 65% of total deaths of the women occurred due to delay at the third level. Third delay was mainly due to lack equipment's and lack of blood storage facility. Main causes responsible for first delay were unawareness of danger signs related to pregnancy, beliefs and customs regarding not delivering at health facility. Delay in mobilizing funds for treatment and delay in getting transportation were found as the main causes responsible for second delay. Majority of women in the study area were found married before the age of 20 years. Early marriage may be the reason as more than half of maternal deaths had taken place in the age group of 20 to 24 year in that particular area. More than half of the mothers died due to some other Medical Complications or Anaemia

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TABLE OF CONTENTS

<u>Table of Contents</u>	<u>Page no.</u>
1.0 INTRODUCTION	
1.1 Introduction.....	15-17
1.2 THE THREE PHASES OF DELAY.....	17-18
1.3 Rational.....	19
2.0 LITERATURE REVIEW	
2.0 Literature review.....	19-20
3.0. RESEARCH QUESTION.....	20
4.0. OBJECTIVES.....	20
5.0. METHODOLOGY.....	20-23
5.1 Study design & Location	20-21
5.2 Mahisagar district profile	21-22
5.3 Sample size.....	22
5.4 Sample Technique.....	22
5.5 Analysis.....	22
5.6 Statistical Treatment.....	22
5.7 Ethical consideration.....	23
6.0 OBSERVATIONS & RESULTS.....	24-34
7.0 CONCLUSION.....	34-35
8.0 RECOMMENDATION.....	35-36
9.0 REFERENCES.....	36-37

LIST OF TABLES

TABLE NO	HEADINGS	PAGE NO
1.	Demographic detail of Gujarat State	17
2.	Socio – Demographic profile of the Subjects	24
3.	Socio – Economic status of the Subjects	25
4.	Investigation done of the Subjects	27
5.	Duration of Stay (in hours) after Delivery in Health Facility	28
6.	Antenatal Check up	29
7.	Person who conducted Delivery	29
8.	Mode of Transportation used to reach Health Facility	29
9.	Distance of Health Facility from Patient's House	30
10.	Level of Satisfaction of Respondents with Quality of Health Services	31

LIST OF FIGURES

FIGURE NO.	HEADINGS	PAGE NO.
1.	Common cause for Maternal Deaths in Gujarat	20
2.	Place of Death	26
3.	Type of Delivery	27
4.	Cause of Death of Subjects	28
5.	Frequency of ANM visits to Village/Area for Maternal Services	30
6.	Reasons for not going Health Facility	31
7.	Level of Delay	32
8.	Reason for Delay in Seeking Care	32
9.	Reason for Delay in reaching first level Health Facility	33
10.	Reason for Delay in receiving adequate care in Health Facility	34

EXECUTIVE SUMMARY

Maternal mortality reflects the socio economic status of any country. India has high maternal mortality ratio (MMR) when compared to other developed countries. Each year in India, approximately 28 million women knowledge pregnancy. Maternal Mortality Ratio in India has shown an substantial decline from 398/100,000 live births in the year 1997-98 to 301/100,000 live births in the year 2001-03 to 212 in 2007-2009 to 178/100,000 live births in the period 2010-2012 to 174 in 2014-2015. [SRS, June 2011 Bulletin]. As far as the maternal health indicators are troubled, Gujarat has better indicators in comparison to national maternal health indicator. As per the Special Bulletin on maternal mortality in India in 2007-09, the maternal mortality rate for Gujarat is 148 per lakh live births to 112/100,000 live births in the year 2011-2013.

Maternal Death Review (MDR) as a policy has been spelt out obviously in the RCH – II National Programme Implementation Plan article. It is an important strategy to improve the quality of obstetric care and decrease maternal mortality and morbidity. The significance of MDR lies in the fact that it provides detailed information on various factors at facility, district, community, regional and nationwide stage that are needed to be addressed to decrease maternal deaths. Analysis of these deaths can make out the delays that contribute to maternal deaths at various levels and the information used to adopt measures to fill the gaps in service.

Mahisagar district has one of the maximum rates of maternal mortality in Vadodara Region. The ‘3-Delays Model’ propose that the pregnancy related mortality is awesomely due to delays in (1) deciding to seek appropriate medical help for an obstetric emergency; (2) reaching an appropriate obstetric facility; (3) receiving sufficient care when a facility is reached. The in attendance study was a group of people based cross-sectional revision with the objective of to review and study maternal mortality using ‘3-Delays’ as a framework along with socio-economic-demographic profile of the subject and obstetric history and recommend some other possible intervention to reduce & prevent caring deaths in Mahisagar district of Gujarat. The 3-delays method and a structured questionnaire (verbal autopsy form) were applied to review and analyze the maternal deaths that occurred during the last two monetary year (1st April 2015 to 31st March 2017). The results showed that the pregnancy related mortality is awesomely due to delays in deciding, reaching and receiving adequate care. Specifically, the results showed:

- 65% of total death of the women occurred due to delay at the third level.
- Third delay was mainly due to lack equipment's and lack of blood storage facility.
- Main causes responsible for first delay were unawareness of danger signs related to pregnancy, beliefs and customs regarding not delivering at health facility.
- Delay in mobilizing funds for treatment and delay in getting transportation were found as the main causes responsible for second delay.
- Majority of women in the study area were found married before the age of 20 years and sixty percent were illiterate.
- More than half of the mothers died due to some other Medical Complications and Anemia.
- Despite a widespread educational programs and legal pressure, majority of women in the study area were found married before the age of 20 years. Early marriage may be the reason for more than half of maternal deaths had taken place in the age group of 20 to 24 year in that particular area.

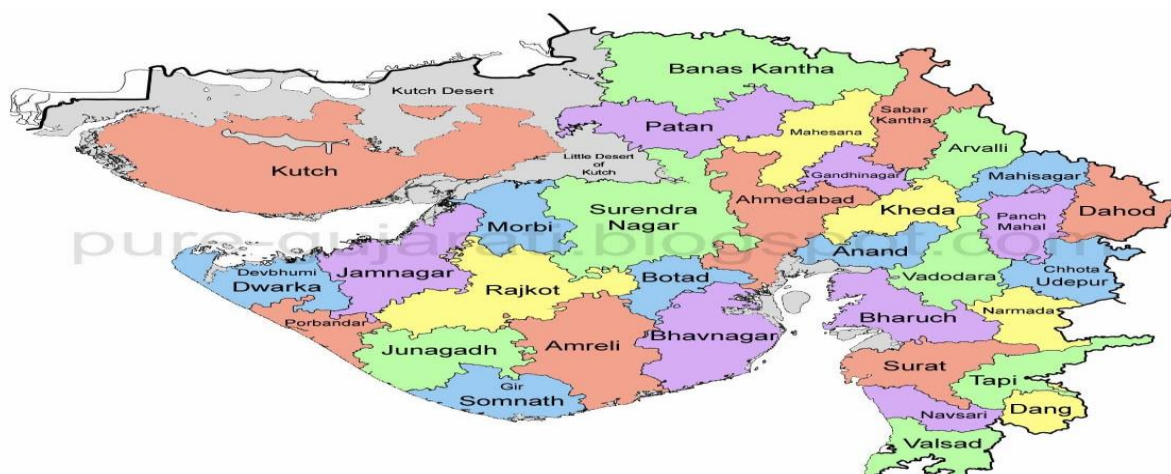
Review of Maternal Death Forms in Mahisagar District, Gujarat

1.1 INTRODUCTION

Under MGD 5, Countries determined to reduce maternal mortality by three accommodation between 1990 to 2015. However, maternal deaths worldwide have dropped only by 45% (UN, 2015). Among the two countries in the world where one third of the total death are observed, India ranks first with 50,000 death followed by Nigeria with 40,000 in 2013 respectively (WHO, 2014). Besides, the country had also failed to achieve its commitment to reach 109 MMR by 2015 with the fall short of 31 points (Sample registration System, Registrar General of India, 2014). The major causes for maternal death in the country are due to hemorrhage, sepsis, hypertensive disorders, obstructed labour, and abortion and other condition includes anemia. Thus, it is important to identify the region specific reasons for maternal death in order to prevent and reduce maternal death.

Maternal Mortality Ratio (MMR) in India shows reduce from 398/100,000 live births in the year 1997-98 to 301/100,000 live births in the year 2001-03 to 212 in 2007-2009 to 178/100,000 live births in the period 2010-2012 to 174 in 2014-2015. Gujarat is in superior placed as far as the maternal health indicator are concerned in contrast to the national maternal health indicators. As per the SRS 2007-09, the maternal mortality rate for Gujarat is 148/100,000 live births to 112/100,000 live births in the year 2011-2013. The State government has initiate the 'Janani Suraksha Yojana (JSY), Mamta Doli, Mamta Abhiyan, Mamta Card (Mother & Child Protection Card)' scheme intended at safe release, nourishment and diet and antenatal check-up and institutional liberation for women in BPL family⁽³⁾. To attain the MDG Goal of 109 per 100,000 live births, there is a need to give implementation of the strategies and interventions for maternal health.

GUJARAT STATE PROFILE:-



Gujarat has a population of 6.03 crore (2011 Census), which is approximately 4.99% percent of the total population of the country. About 42.6% of the State's population resides in urban areas, compared to 37.4 in 2001. The population density of the state is 308 as compared to the national average of. About 2, 23,722 (Census 2011) of Gujarat's population is estimated to be BPL, while 4,074,447 percent and 89, 17,174 (15 percent, 2011) are classified as SC and ST respectively. Socio-economic indicators are better than the India average 79.31 percent and 70.73 percent of its total and female population respectively are literate, the corresponding figures for India being 74.04 percent and 65.46 percent respectively. Administratively, the state has been divided into 33 districts, subdivided into 225 Blocks, having 18618 villages and 242 towns.

The unit of Health and Family Welfare, Government of Gujarat is dedicated to endorse the correct of every woman, man and child to enjoy a existence of health and equal chance and creation all round efforts in this way. The department has in use steps to bring about outcome as envisioned in the Millennium Development goals with esteem to child and maternal mortality, RCH II / NRHM programme, The National Health Policy 2015 Gujarat. It aims to deal with the infectious diseases with respect to avoidance or assess to treatment and worldwide burden diseases of non-communicable diseases and reduce disastrous disbursement contributes to scarcity.

The state has a large three-tier health infrastructure comprising 23 district hospitals, 17 Sub District Hospitals, 326 Community Health Centre (CHCs), 1342 Primary Health Centre (PHCs) and 9156 Sub-Centers (SCs). As Per RHS Bulletin, March 2012, M/O Health & F.W.,GOI, 778 doctors at PHC's, 76 specialists at CHCs, 758 male and 875

female health (LHV) assistants are positioned in these facilities in addition to 4874 male and 6431 female health workers at sub-centers.

As per census 2011, total population of the Gujarat state is 60439692. The district has the highest maternal mortality Rate (122) as compared to other districts of the state. According to SRS 2013, Crude birth rate is 20.8 and Crude death rate is 6.5. Sex ratio is 918, child sex ratio is 886 and Total literacy rate is 79.31%.

Table 1 Demographic Details of Gujarat State	
INDICATOR	TOTAL
Total population (In crore) (Census 2011)	60439692
Maternal Mortality Rate	122
Crude Birth Rate (SRS 2013)	20.8
Crude Death Rate (SRS 2013)	6.5
Sex Ratio (Census 2011)	918
Child Sex Ratio (Census 2011)	886
AVAILABLE HEALTH FACILITY	
No of villages	18618
No of Sub centers	9156
No of PHCS	1342
No of CHCS	326
Sub District Hospital	17
District Hospital	23

1.2 THE CONCEPTUAL FRAMEWORK -- THE THREE PHASES OF DELAY :-

There are many factors that contribute to maternal mortality, the **Maine and Thaddeus ‘3-delays model’** focus on those that affect the interval between the onset of obstetric complications and its outcomes. If prompt, adequate treatment is provided, the outcome

will usually be satisfactory; therefore, the outcome is most adversely affected by delayed treatment.

The **Maine and Thaddeus ‘3-delays model’** analyze maternal mortality as a function of delay in receiving appropriate quality treatment. According to **Maine and Thaddeus (1994)** from the onset of obstetric complication to the outcome there are multiple factors that interfere with the chances of a woman getting rapid quality treatment which are called **Delay Factors**. With the 3 delays, there are different underlying issues which influence the decision making and thus the reason for delays.

The model is organized 3-delays into 3 phases:-

- **Phase I – Delay in Deciding to Seek Care**
- **Phase II – Delay in Identifying and Reaching Medical Care**
- **Phase III- Delay in Receiving Adequate and Appropriate Care**

Phase I delay:

Delay in decide to seek care on the part of the personality, the family, or both. Examples of factors that shape the decision to seek care embrace the actors occupied in decision-making (individual, spouse, relative, family); the status of women; illness description; distance from the health facility; economic and chance costs; previous practice with the health care system; and supposed quality of care.

Phase II delay:

Delay in attainment sufficient health care facility (Identifying and Reaching Medical Care). Examples include physical convenience factors, such as sharing of services, travel time from home to provision, ease of use and cost of carrying and form of roads.

Phase III delay:

Delay in receiving adequate care and appropriate care at the facility. Relevant factors include adequacy of the referral system; shortages of drug supplies, lack of blood storage facility, lack of equipment's, and trained personnel; and competence of available personnel

1.3 RATIONALE

Mahisagar district was high priority district in Gujarat due to increased maternal death and more number of tribal population.

Analysis of the maternal death by health department revealed that maternal death in Kadana block was high as compared to other blocks of Mahisagar district.

Maternal death was high among tribal population as compared to their counter parts. So there was requirement to do the study.

This study will therefore provide an assessment framework based on the Three Delay Model to identify which of these factors are impacting on the current burden of maternal mortality in Mahisagar District, Gujarat.

2.1 REVIEW OF LITERATURE

A nationwide sample survey in India observed that 23.4% deaths occurred during ante partum period, 21% deaths were due to indirect causes, and 59.1% deaths occurred in health facilities in 2003 (Indian council of Medical Research, 2003).

Secondary data analysis of the Chiranjeevi scheme in Gujarat by Mavalankar et al. (2009) revealed that more than 800 obstetricians have joined the scheme and more than 269000 poor women have delivered in private facilities in 2 years. It found that percentage of institutional deliveries among poor women increased from 27% to 48% between April 2007 and September 2008. In addition, there are fewer reported maternal and newborn deaths among the beneficiaries compared with the number of deaths expected in the absence of the scheme.

Filippi et al classified disease-specific criteria for identifying MNM cases, and they are based on five main categories of complications at term. Prospective or retrospective reviews of medical records were conducted in nine referral hospitals in three countries (Benin, Côte d'Ivoire, and Morocco). They calculated the incidence of near-miss obstetric events, near-miss cases, and maternal deaths related to hemorrhage, hypertensive diseases of pregnancy, dystocia, infections, and anemia and analyzed these according to hospital and timing relative to admission.

A retrospective case control study in UK, at tertiary care centre found that hemorrhage due to placenta praevia especially in repeat C section was the main indication for emergency peripartum hysterectomy (47 %). The cases consisted of all women who had

emergency peripartum hysterectomy between 1 January 1993 and 31 December 2003. Controls were women who delivered immediately before and after the indexed case. Differences between cases and controls were compared with chi2, Fisher exact and Student t tests. Multiple logistic regression analysis was performed to identify independent risk factors for emergency peripartum hysterectomy.

Kumar et al. (2010) found that increase in institutional deliveries with improved referral linkages is one of the important reasons thought to have resulted in reduction in MMR in India.

Fig 1: Common causes for maternal deaths in Gujarat

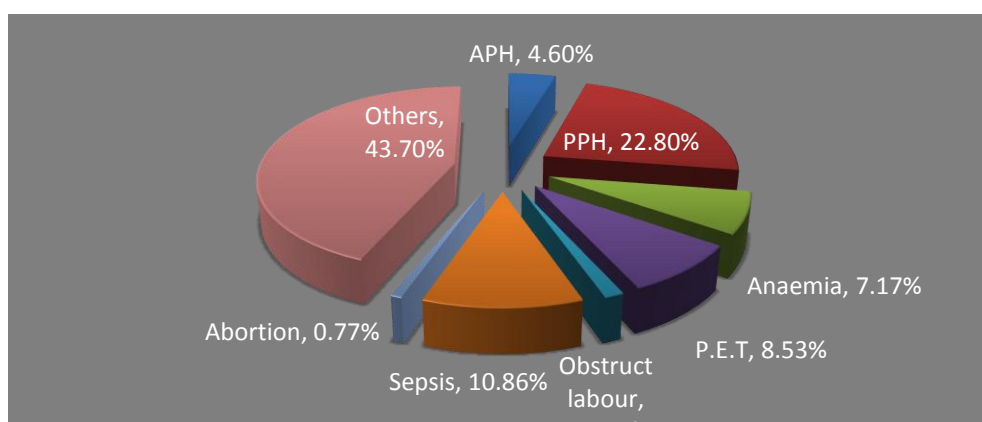


Fig. 1- (Source: PIP guidelines of NRHM 2011-12)

3.0 Research Question

- What are the factors affecting the Maternal Mortality using 3- delays Model framework

4.0 OBJECTIVES

- To describe the type of delay commonly contributing to the burden of maternal deaths in Mahisagar District.
- To study the causes of deaths and recommend some other possible interventions to reduce & prevent maternal deaths.

5.0 METHODOLOGY

Design and Location of Study: - A community based (Review of verbal autopsy/Maternal Death Forms) cross-sectional study was adopted. It was conducted in

Mahisagar district under the Department of Maternal Health, NRHM Gujarat from 1st Feb-1st May 2017.

MAHISAGAR DISTRICT PROFILE

MAHISAGAR DISTRICT:- is a district in the state of Gujarat in India that came into being on 26 January 2013, becoming the 28th district of state. The district has been carved out of the Panchmahal district and Kheda district.

Lunawada is the district headquarter of Mahisagar. It started its operation in full-fledged from 15 August 2013.

District Profile:-

- Area in Sq. Km: 226064
- No. of Blocks: 6
- No. of Villages: 717
- No. of Urban units: 3
- No. of outgrowth/slums: 16
- No. of tribal areas/ hamlets: 2
- Total population (In Lakhs) (updated as on March 2015): 1066935
- Rural population (In Lakhs) (updated as on March 2015): 964225
- Urban population (In Lakhs) (updated as on March 2015): 102710
- Outgrowth/slums population (In Lakhs) (updated as on March 2015): 13541
- Tribal areas/ hamlets population (In Lakhs) (updated as on March 2015): 396083
- Migratory population (updated as on March 2015): NA
- Population density (updated as on March 2015): 4.72 per sq. km.
- Decadal growth rate (%): 1.77
- Sex Ratio (updated as on March 2015): 947: 1000 MALE
- Child Sex Ratio (updated as on March 2015): 946:1000 MALE
- Schedule Caste population (In Lakhs) (updated as on March 2015): 54560
- Schedule Tribe population (In Lakhs) (updated as on March 2015): 375678
- Total Literacy Rate (%) (Source):668895
- Male Literacy Rate (%) (Source): 394880
- Female Literacy Rate (%) (Source): 274015
- No. of District hospitals: 1
- No. of CHCs: 6

- No. of PHCs: 33
- No. of SCs: 225
- No. of tertiary referral centres: 2
- No. of tertiary referral centres: run by NGO (Non Govt. Organisations) 2
- No. of tertiary referral centres: run by Government: 2
- No. of Health Training Institutes: 0

Sample Size: - Total number of 62 cases was selected for the study (maternal deaths which was occurred during the period of 1st April 2015 to 31st March 2017) out of which 12 cases were excluded at the time of reviewing and analyzing of the study. Family members or relatives of the deceased mother who were not present at the time of interview and migrated from Mahisagar district were not included in the study. Also, cases with incomplete records were not taken in the study.

Tools and Techniques: - I have collected last 3 years Maternal Death Review Verbal Autopsy Forms of Mahisagar district. I have done simplified data entry of Maternal Death Review Forms in Microsoft Excel for Analyzing purpose, I rely more upon Pivot table function of Excel. It is based on the secondary data obtained by Gujarat health department through Verbal Autopsy Form. Review of Maternal Death Forms along with Family members or relatives of the deceased mother were interviewed and records were cross-checked. The Review included details of mothers' socio demographic (name, age, religion, caste, duration of married life, place of residence, economic status etc.) and complete medical, obstetric and family history were also recorded.

ANALYSIS

- All the data were analysed by using Microsoft EXCEL software to draw the inferences.

STATISTICAL TREATMENT

- The returned questionnaire is checked for completeness and correctness and data is entered in Microsoft excel for further analytical treatment and graphical representations.

ETHICAL CONSIDERATIONS

- Confidentiality of subjects is taken care of.
- No names are mentioned in the study.

6.0 OBSERVATION AND RESULTS

Table 2: - Socio-demographic profile of the study subjects (n=50)

Particulars	Numbers	Percent
Age (in years) of women at the time of marriage • 16-20 • 21-25 • >25	35 10 05	70.0 20.0 10.0
Age (in years) of husband at the time of marriage • 16-20 • 21-25 • >25	12 32 06	24.0 64.0 12.0
Age (in years) of women at time of death • 20-24 • 25-34 • 35-44	38 10 02	76.0 20.0 04.0
Caste • SC • OBC • Others	25 20 05	50.0 40.0 10.0
Religion • Hindu • Muslim	44 06	88.0 12.0
Total	50	100.0

Table 2 show that 70% of women were in the age category of 16-20 years at the time of marriage, while 64% of men were in the age category of 21-25 years at the time of marriage in the study area. Study also reveals that 76% of pregnant women were died in the age category of 20-24 years and it was more in SC caste (50%) than that of OBC (40%) and others (10%). Out of total maternal deaths 88% were Hindus and 12% were Muslims.

Table 3: Socio-economic status of the study subjects (n=50)

Particulars	Number	Percentage
Education Mother		
Illiterate	30	60.0
Primary Education	10	20.0
Upto 8th standard	06	12.0
Upto 10th standard	03	6.0
Graduate	01	2.0
Education Father		
Illiterate	12	24.0
Primary Education	25	50.0
Upto 8th standard	08	16.0
Upto 10th standard	03	6.0
Graduate	02	4.0
Occupation Mother		
House-wife	37	74.0
Non-agri/daily wages	08	16.0
Agriculture	05	10.0
Occupation Father		
Non-agri/daily wages	34	68.0
Agriculture	08	16.0
Govt. employee	03	6.0
Others	05	10.0
BPL status		
Have BPL card	40	80.0
Don't have BPL card	10	20.0

Socio-economic status of subjects is shown in Table 3. It shows that 60% of women were illiterate and only 20% of women were completed their primary education while only 24% of men were illiterate and 4% of men were completed their graduation. Table shows that majority of women were involved in house-hold works (74%) and Majority of the families were living Below Poverty Line (80%) in the study area,

Figure 2: - Place of Death (N=50)

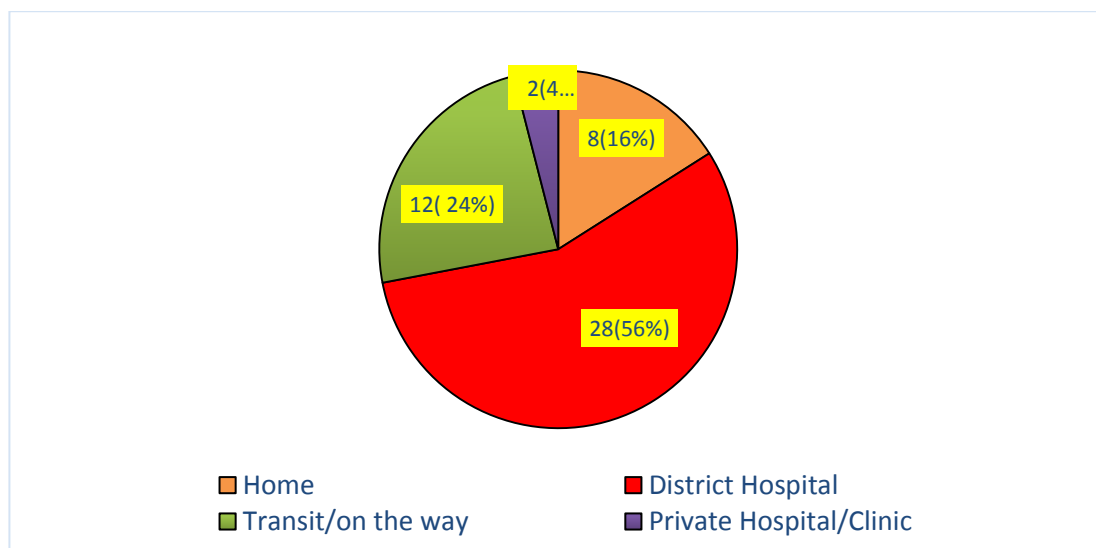


Figure 2 shows that out of 50 maternal deaths in the study area 60% of mothers were died after admitted to health facilities. Twelve cases (24.0%) were died while they were on the way to next health facility or on the way to home.

Figure 3: - Type of Delivery (N=47)

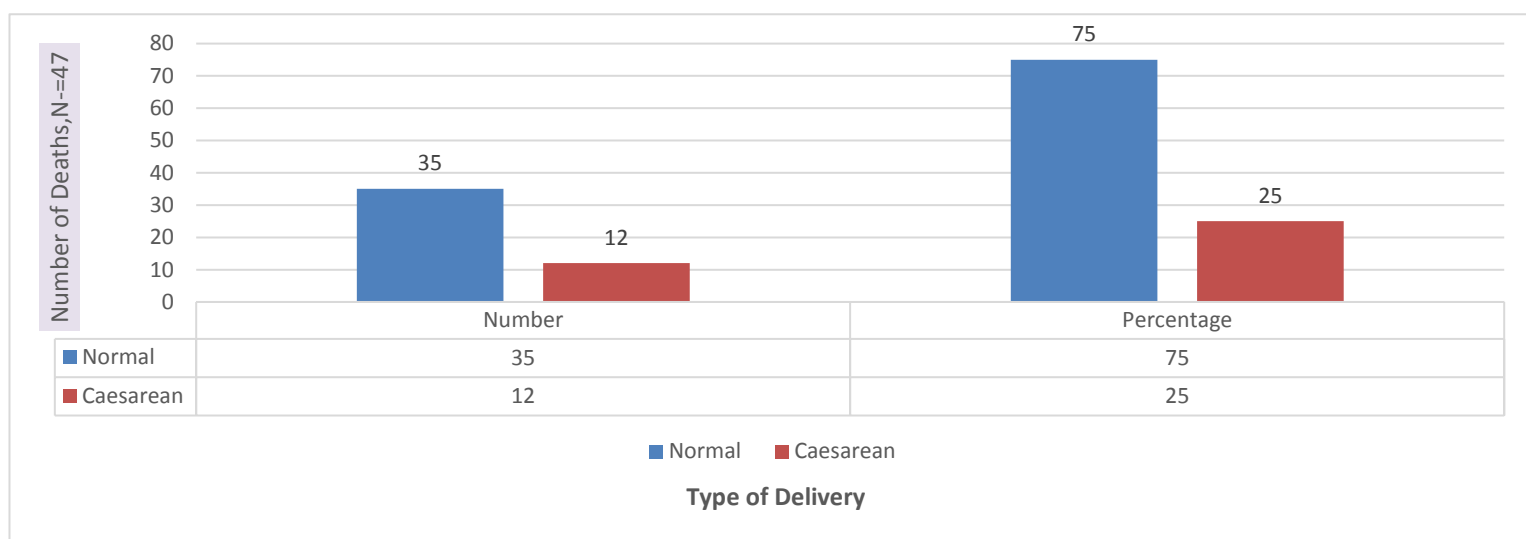


Figure 3 shows that out of 47 deliveries, 35 (75%) were normal deliveries and 12 (25%) were caesarean deliveries.

Table 4: - Investigation done after admission to health facility (n=30)

Investigation	Yes
Blood group	14 (47%)
HB	23 (77%)
HBs Ag	9 (30%)
HIV	15 (50%)
VDRL	13 (43%)
RBS	17 (57.0%)
Urine examination	21 (70%)
USG	11 (37%)
Blood pressure	28 (93%)

Table 4 shows that Hemoglobin estimation was not done for ten (23%) pregnant women while blood grouping was not performed for 53% of pregnant women. Blood pressure was measured most (93.0%) of the cases. Only 50% and 30% cases were investigated for HIV and HBs Ag. Only Eleven (37%) pregnant women had gone through ultrasound examination during their antenatal check-ups.

Table 5: - Duration of stay (in hours) after delivery in health facility

Duration of stay (hours)	Number
<24 hrs	10
24-48 hrs	07
>48 hrs	13
Don't know	00
Total	30

Table 5 shows that 73% of pregnant women were stayed less than 24 hours in health facility after delivery.

Figure 4 – Cause of Death of subjects (N=50)
(Percentage)

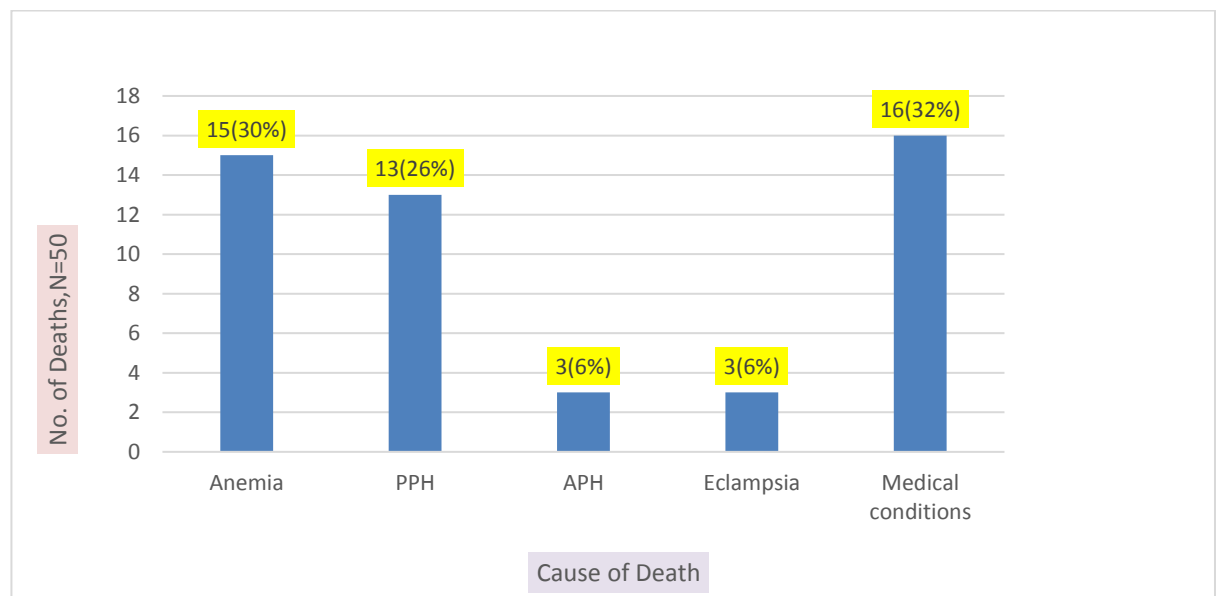


Figure 4 shows that the leading causes of maternal death in the study area were Medical conditions (32%), Anemia (30%) and PPH (26%).

Table 6: - Received full Antenatal Care (3 ANC visit)

Antenatal check up	Numbers	Percent
Yes	26	52.0
No	24	48.0
Total	50	100.0

Table 6 shows that receiving antenatal care was only 52% in the study area.

Table 7: - Person who conducted delivery

Person	Number	Percent
Doctor	29	58.0
ANM/Nurse/LHV	9	18.0
Dai	8	16.0
Relatives/friends	0	0.0
Quack	4	8.0
Total	50	100

Table 7 shows that 58% of the deliveries were conducted by doctors while 9 deliveries (18.0%) were conducted by staff nurses in the study area but Dai conducted 16% of the Deliveries and Quack conducted 8% Deliveries which was major concerned.

Table 8: - Mode of Transportation used to reach Health facility

Mode of transportation	Numbers	Percent
Ambulance (108)	20	48.0
Private Ambulance	0	0.0
Jeep/Car	9	21.0
Motorcycle/scooter	0	0.0
Bus/train	0	0.0
Tempo/Auto/Tractor	13	31.0
Total	42	100.0

Table 8 shows that 48% of the patients used Ambulance services as a mode of transportation at the time of emergency while major mode of transportation in the absence of ambulance services was Tempo/Auto (31.0%) and Jeep/Car was 21%.

Table 9: - Distance of Health facility from patient's house

Distance in Kms	Numbers	Percent
≤ 1	0	0.0
2-5	0	0.0
6-10	18	36.0
11-20	28	56.0
20-30	4	8.0
Total	50	100.0

Table 9 shows that the average distances to the reach the nearest health facility for maternal services (/PHCs/CHCs/DH) were lies between 11-20 kms from the house of patient. As much as approximately more than 60% of the patients had to come at health facility by travelling more than 10 km distance.

Figure 5 - Frequency of ANM visits to village/area for maternal services (N=50)

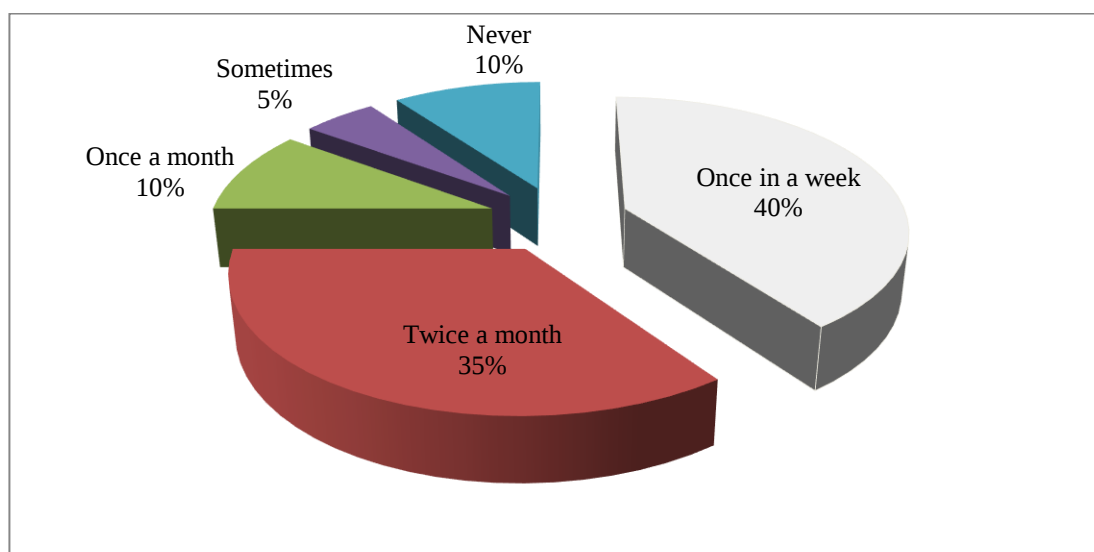


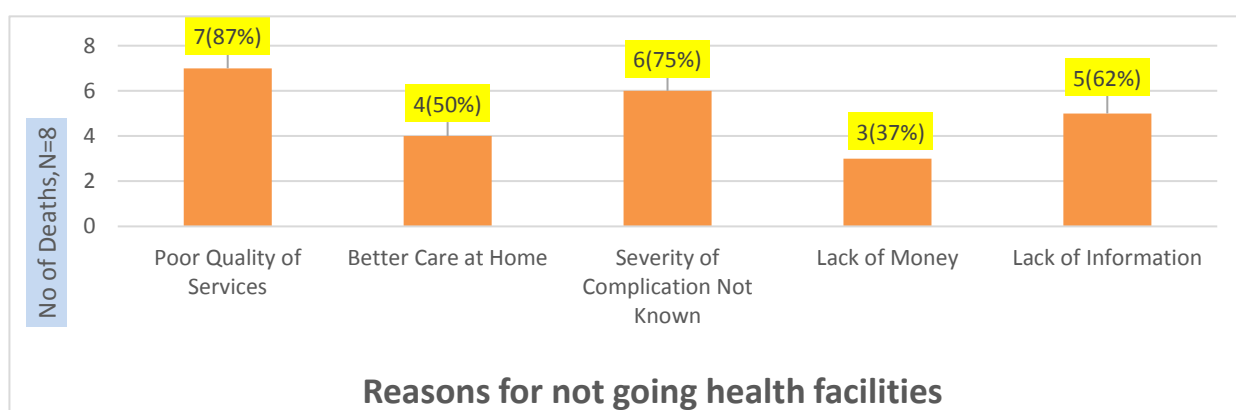
Figure 5 show that 40% of ANMs visited their correspondence village once in a week while 35% were visited after every 15 days of the month for providing maternal services. Figure also reveals that 10% of ANMs were visited once a month and 10% of ANMs were never visited to their correspondence village for providing maternal services.

Table 10: - Level of satisfaction with quality of health services

Quality of services	Dissatisfied	Neither satisfied not dissatisfied	Satisfied	Total
Behavior of staff	18 (60.0%)	7 (23.0%)	5 (17.0%)	30 (100%)
Timely attention	14 (47.0%)	10 (33.0%)	6 (20.0%)	30 (100%)
Cleanliness of ward	18 (60.0%)	8 (27.0%)	4 (13.0%)	30 (100%)
Cleanliness of bathroom	24 (80.0%)	6 (20.0%)	0 (0.0%)	30 (100%)

Table 10 show that 60.0% of respondents were dissatisfied with the behavior of staff at the health facilities. Satisfaction level for the cleanliness of ward, timely attention given to the patients were 13.0%, 20.0% which is very bad, and Satisfaction level for the cleanliness of bathroom was 0.0% which is shameful.

Figure 6- Reasons for not going health facilities (N=8)



Bar chart shows that poor quality of maternal services at health facilities (87%) was the main reason for not going to health facility for delivery. Apart from that, 75% of families were not known actually severity of Complications. 50% of the Families believed that they provide better maternal care at home than that of health facilities so it was not necessary to go to health facilities for maternal care. Lack of Information (62%)

and Lack of Money (37%) were the other reasons for not going to health facilities for deliver.

Fig 7: Level of Delay (N=46)

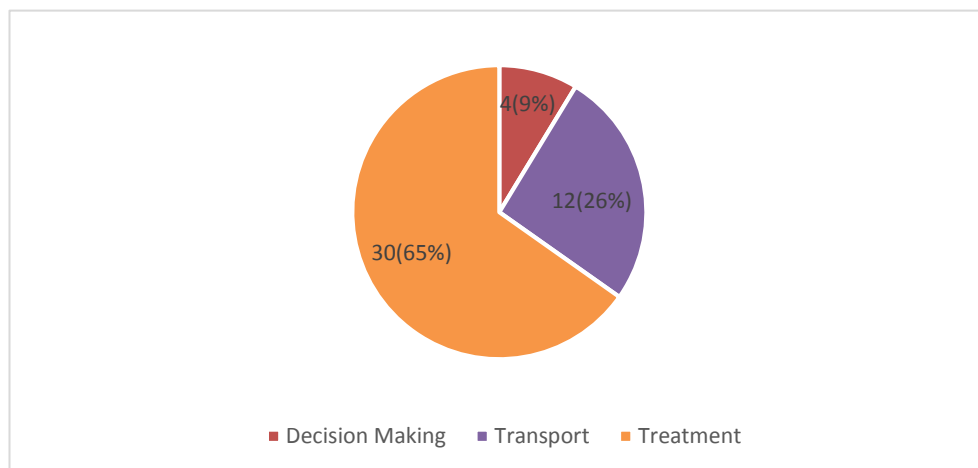


Fig 7 shows that 65% of total death of the women occurred due to delay at the third level.

Figure 8- Reasons for Delay in Seeking Care (N=50)

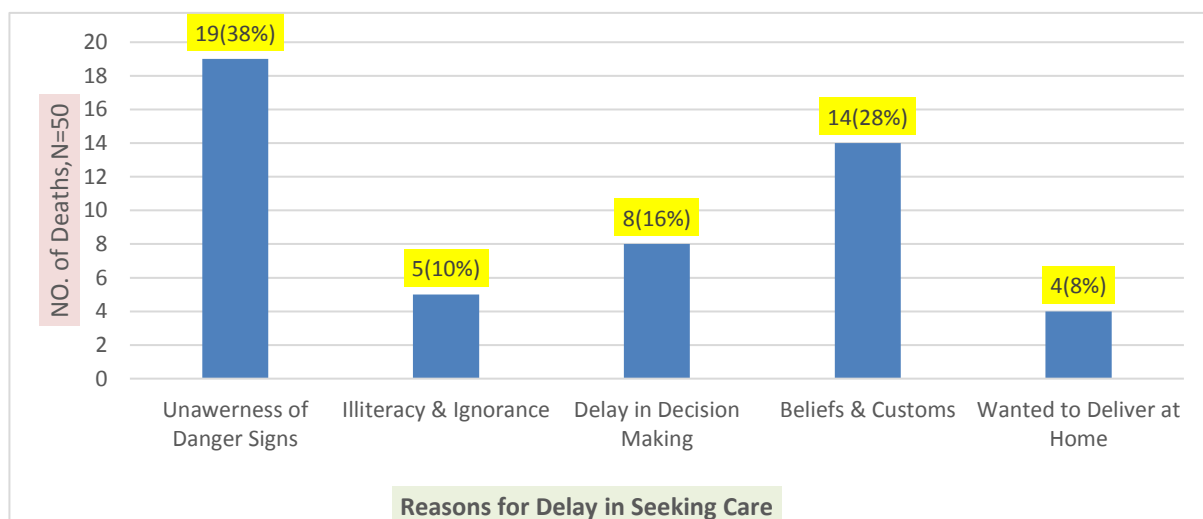


Figure 8 revealed that main cause for first delay was unawareness of danger signs related to pregnancy (38%) and in 28% cases it happened due to Beliefs and Customs for seeking maternal services. Apart from that Delay in Decision Making (16%) at the time of pregnancy were other reasons for first delay.

Figure 9- Reasons for Delay in Reaching first level Health facility (N=50)
(Percentage)

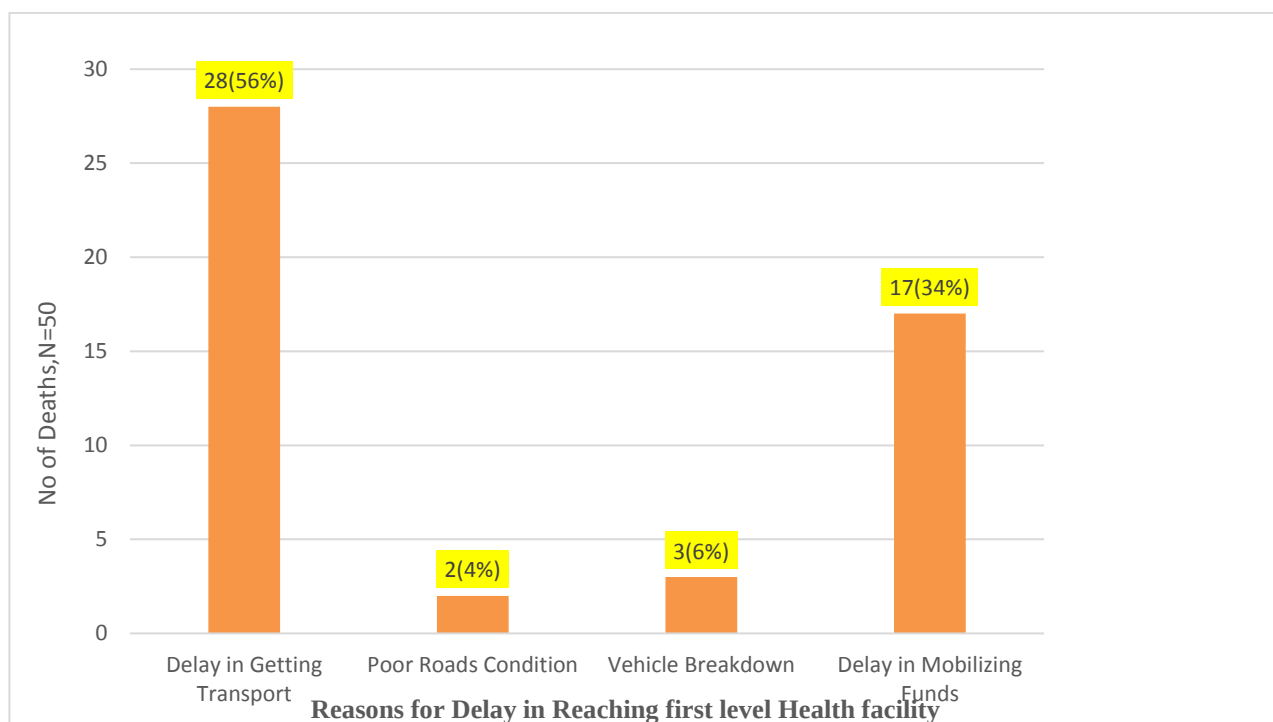


Figure 9 shows that main causes for second delay were, delay in Getting Transport (56%) for treatment and delay in Mobilizing Funds was also main reason for second delay (34%).

Figure 10- Reasons for Delay in Receiving Adequate Care in Health Facility (N=42)

(Percentage)

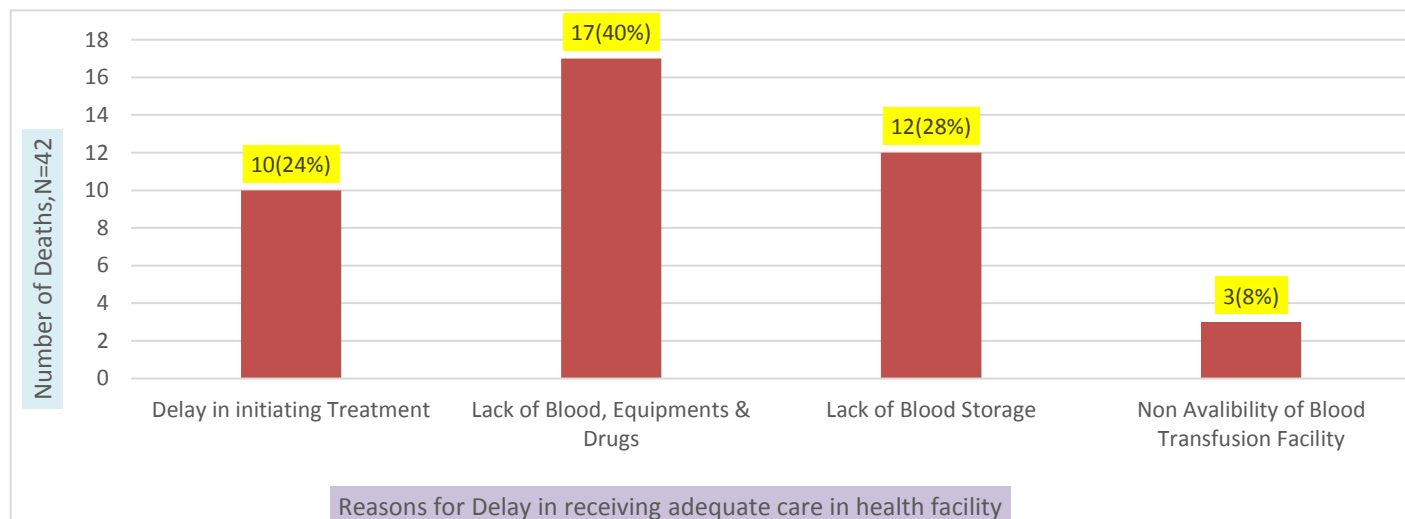


Figure 10 shows that main cause for third delay was lack of blood, equipments and drugs in the health facilities (40%). Bar graph shows that 28% of the health facilities did not have blood storage facilities and 8% of health facilities did not have blood transfusion facilities due to which third delay happened. Not getting treatment from health facilities due to Delay in initiating Treatment was also a reason for third delay in 24% cases.

8.0 CONCLUSION

The '3-Dealys Model' proposes that the pregnancy related mortality is awesomely due to delays in deciding, reaching and receiving adequate care.

- 65% of total death of the women occurred due to delay at the third level.
- Third delay was mainly due to lack equipment's and lack of blood storage facility.
- Main causes responsible for first delay were unawareness of danger signs related to pregnancy, beliefs and customs regarding not delivering at health facility.
- Delay in mobilizing funds for treatment and delay in getting transportation were found as the main causes responsible for second delay.
- Majority of women in the study area were found married before the age of 20 years and sixty percent were illiterate.
- More than half of the mothers died due to some other Medical Complications and Anemia.
- Despite a widespread educational programs and legal pressure, majority of women in the study area were found married before the age of 20 years. Early marriage may be the reason for more than half of maternal deaths had taken place in the age group of 20 to 24 year in that particular area.
- More than half of the mothers were died due to some other Medical Complications and Anemia, and also from the Post-Partum Hemorrhage (PPH) was found a major cause of maternal death.
- As far as the routine laboratory and clinical investigations are concerned their practice were found lacking in the district along with receiving antenatal care was also half of the practice in the Mahisagar District.
- Private/ personal and Ambulance (108) vehicles were major mode of transportation at the time of emergency.
- Average distances to the reach the nearest health facility (/PHCs/CHCs/DH) for maternal services were lies between 11-20 kms from the house of patient.
- Less than half of the ANMs were visiting their correspondence village once in a week.
- Satisfaction levels for the cleanliness of ward, cleanliness of bathroom and the behavior of the staff and timely attention provided in the health facilities were very poor. This is supported by the finding that poor quality of maternal services at health facilities was found as the main reason for not going to health facility for delivery.

9.0 RECOMMENDATIONS

- Strengthening of Health Facilities by providing proper blood storage Facility and Availability of Blood in every Delivery points.
- Education of women about pregnancy related Complications.
- BCC and IEC Activities in high priority areas regarding pregnancy related information.
- Improve transport services.
- Proper Monitoring of Early ANC for avoiding complications

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