SOCIO-DEMOGRAPHIC FACTORS, CAUSES & THREE DELAYS AFFECTING MATERNAL DEATH IN VALSAD, GUJARAT

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INTRODUCTION

- Maternal Death is the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes.

- Maternal mortality ratio is defined as the number of maternal deaths per 100,000 live births, a measure of the risk of death once a woman has become pregnant.

- MMR of India is 130 per 100,000 live births whereas of Gujarat is 91 per 100,000 live births.

- An estimated 830 women die from preventable causes related to pregnancy & childbirth around the world every day.

- Major complications that accounts for approximately 75% of all the maternal deaths are severe bleeding (mostly bleeding after childbirth), sepsis, high blood pressure during pregnancy (pre-eclampsia and eclampsia), complications from delivery & unsafe abortions.

3 Delay Model

- In 1994, Sereen Thaddeus of the United States Agency for International Development (USAID) and Deborah Maine, Professor Emerita at the Columbia University Mailman School of Public Health, linked causes of maternal mortality to three delays:
  - delay in decision making to seek care,
  - delay in reaching appropriate facility,
  - delay in receiving adequate care in facility.

RESEARCH QUESTIONS

1) What are the most common causes & “three delays” of maternal deaths in Valsad, Gujarat?
2) What are the socio-demographic factors that contribute to maternal death in Valsad, Gujarat?

OBJECTIVES

1) To assess causes & 3 delays related to maternal death.
2) To describe the socio-demographic factors contributing to maternal death.

LITERATURE REVIEW

Sr. No.	Title	Author	Year	Study location	Sample Size	Results
1.	Maternal mortality in rural Varanasi: Delays, causes, and contributing factors	Kalpana Kumari Ratan Kumar Srivastava, Manushi Srivastava, Neeti Purwar	2019	Varanasi U.P.	22	The mean age of the women was 23 years (±5.5) with minimum of 16 years and maximum of 35 years. 45.5% of women were illiterate. 1st delay was present in 18 out of 22 cases (81.8%), 2nd delay was present in 12 out of 22 (54.5%) cases, and 3rd delay was present in 10 out of 22 (45.5%).
2.	Global causes of maternal death: a WHO systematic analysis	Lale Say, Doris Chou, Alison Gemmill, Özge Tunçalp, Ann-Beth Moller, Jane Daniels, A Metin Gülmezoglu, Marleen Temmerman, Leontine Alkema	2014	WHO	60799	Hemorrhage, hypertensive disorders, and sepsis were responsible for more than half of maternal deaths worldwide.

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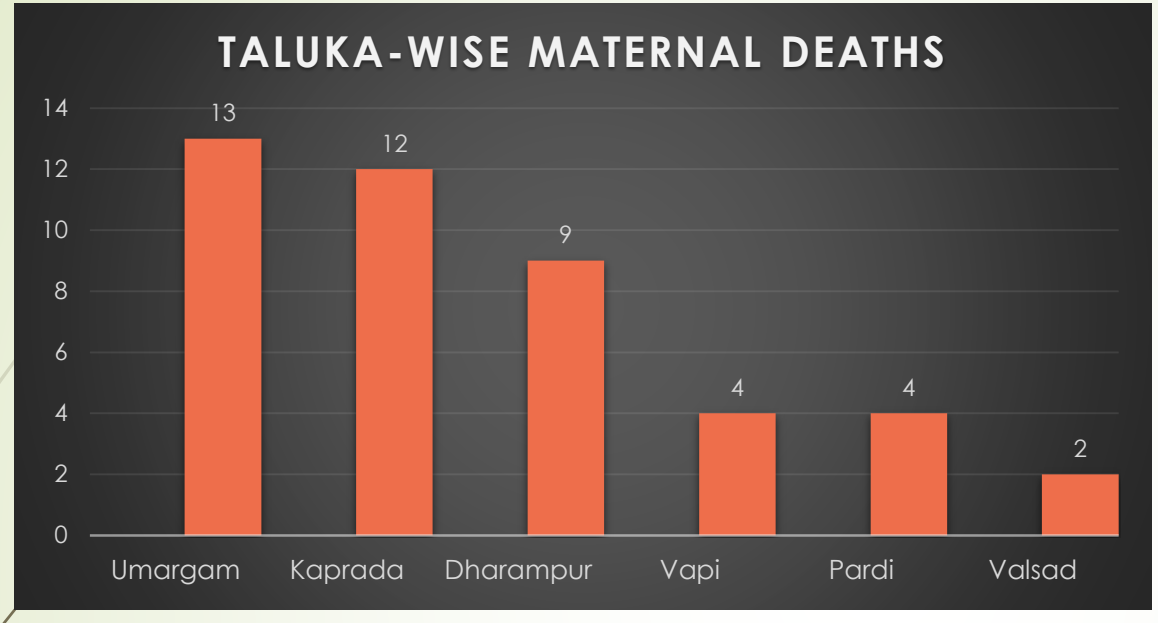
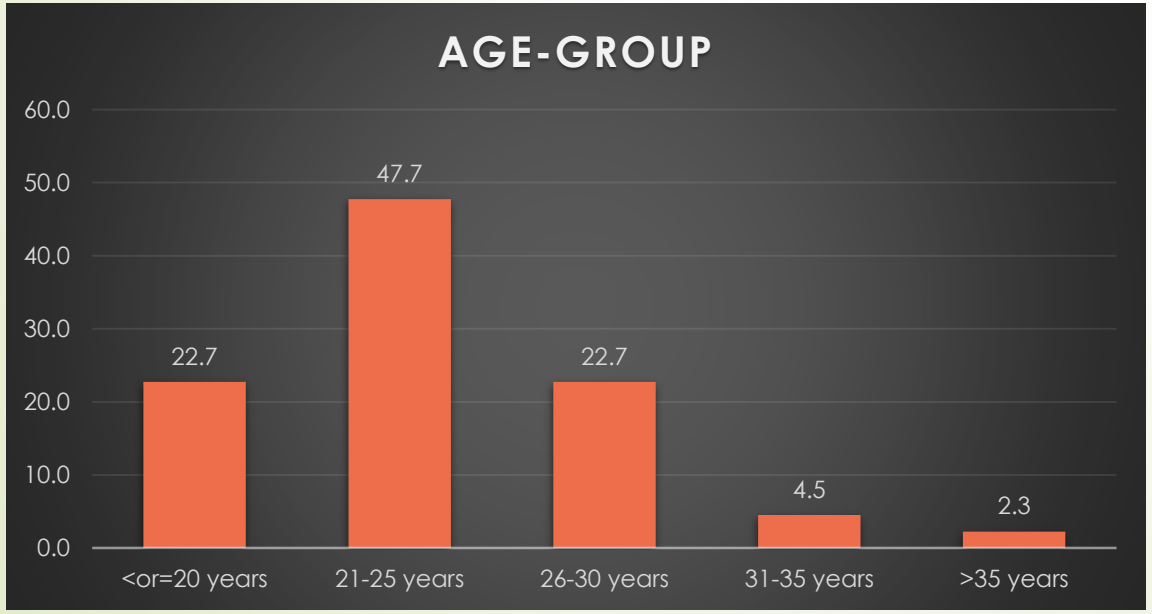
3.	Socio-demographic Characteristics & the Three delays of maternal mortality	Nusrat Shah, Nazli Hossain, Rizwana Shoaib, Ayesha Hussain, Rehma Gillani, Nusrat H. Khan	2009	Karachi	104	Ninety-eight women (94%) had one or more delays, with 70 (71%) having the first delay, 73 (74%) having the second delay and 47 (48%) the third delay.
4.	Cause of and contributing factors to maternal deaths; a cross-sectional study using verbal autopsy in four districts in Bangladesh	A Halim, B Utz, A Biswas, F Rahman, N van den Broekb	2014	Bangladesh	571	47.8% died in a health facility, 17.0% died during transfer (on the way to a health facility) & 35.2% occurred at home. Majority of maternal deaths occurred in women who were multiparous 64.1% The most frequently identified cause of death was hemorrhage (38%) followed by pre-eclampsia/eclampsia (20%) and sepsis (8.1%).

METHODOLOGY

- Study Design : Retrospective Observational Study
- Study Approach : Reference period - April 2017-March2019
  : Quantitative (Semi-structured questionnaire)
- Sample Area : Valsad District, Gujarat
- Sample size : 44 (Reference period - April 2017-March2019)
- Inclusion Criteria : All maternal deaths that occurred due to any obstetric complications
- Exclusion Criteria : Accidental maternal death
  : Mothers dying after 42nd days of deliveries
- Study Tool : Semi-structured questionnaire
- Statistical Method : SPSS Version 22

RESULTS



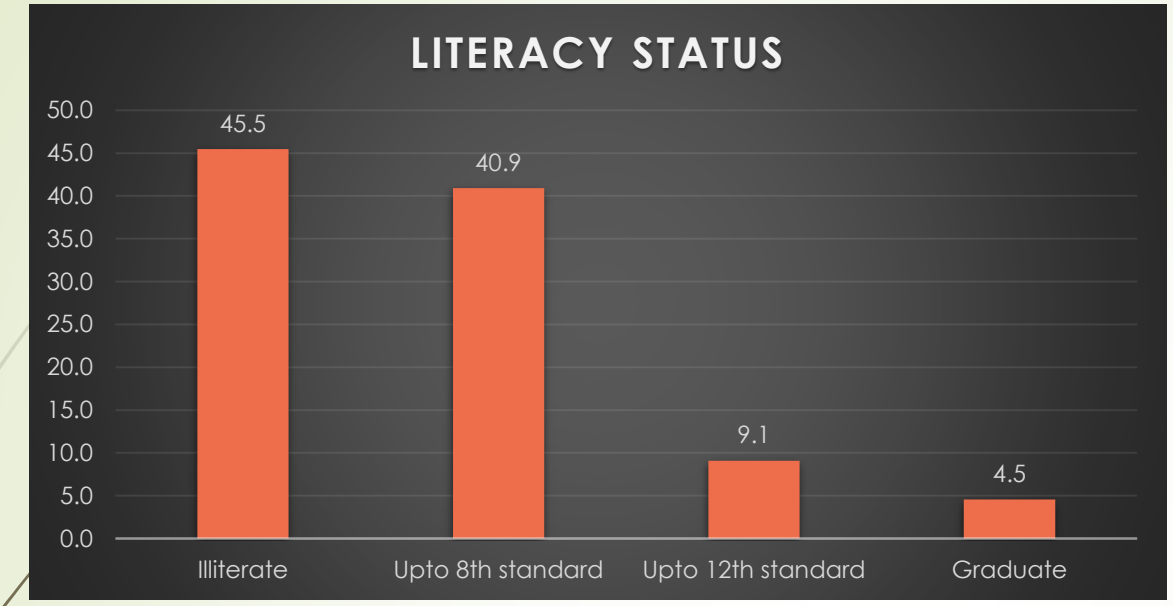


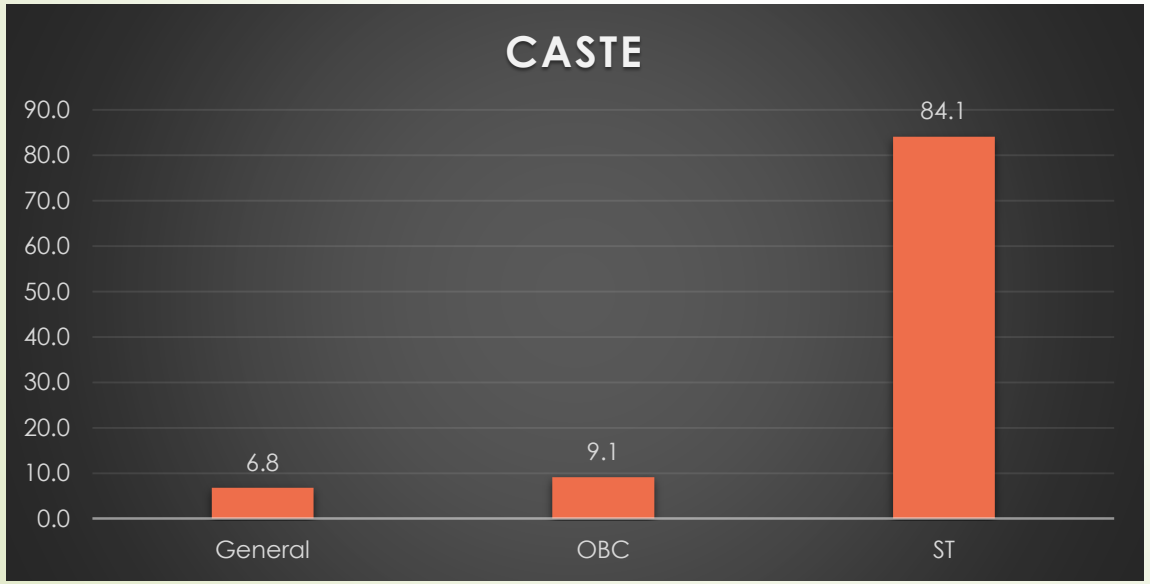
INTERPRETATION:

- Maximum maternal deaths occurred in Umargam taluka (13) followed by Kaprada (12), Dharampur (9), Vapi & Pardi (4 each) & Valsad (2).

- Maximum maternal deaths occurred in the age-group of 21-25 years.
- Mean age of all the maternal deaths was 24.61±4.4 years with minimum age being 18 years & maximum 39 years.

RESULTS





INTERPRETATION:

- Out of all the women, 20 (45%) were illiterate, 18 (41%) studied till 8th standard, 4 (9%) studied till 12th standard & only 2 (4%) were graduate.

- Out of all the maternal deaths, 37 (84%) belonged to ST category.

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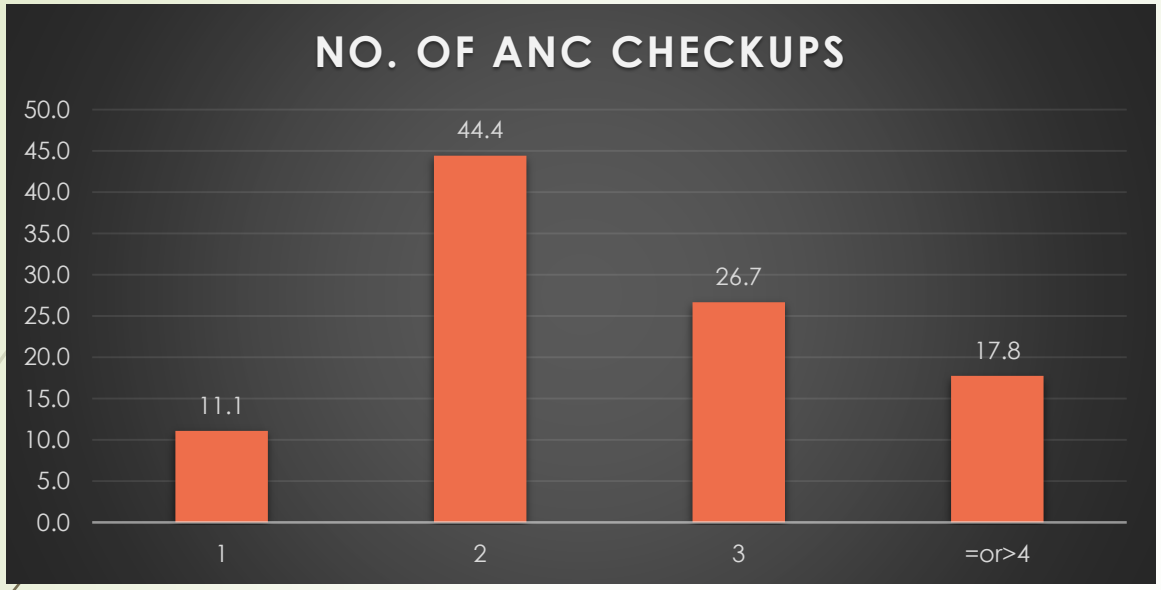
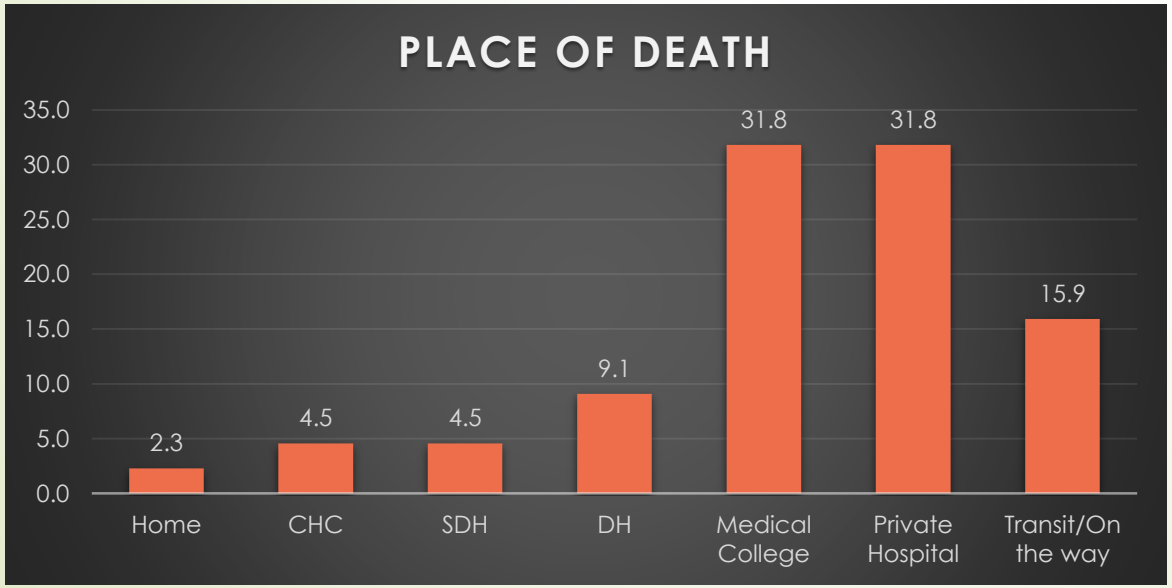
RESULTS



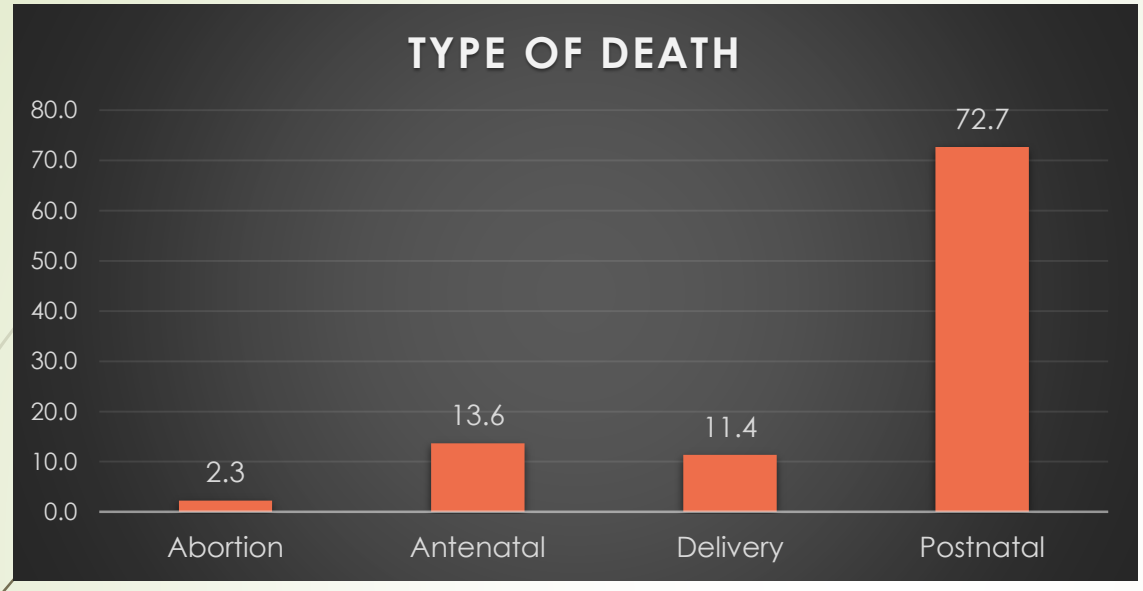


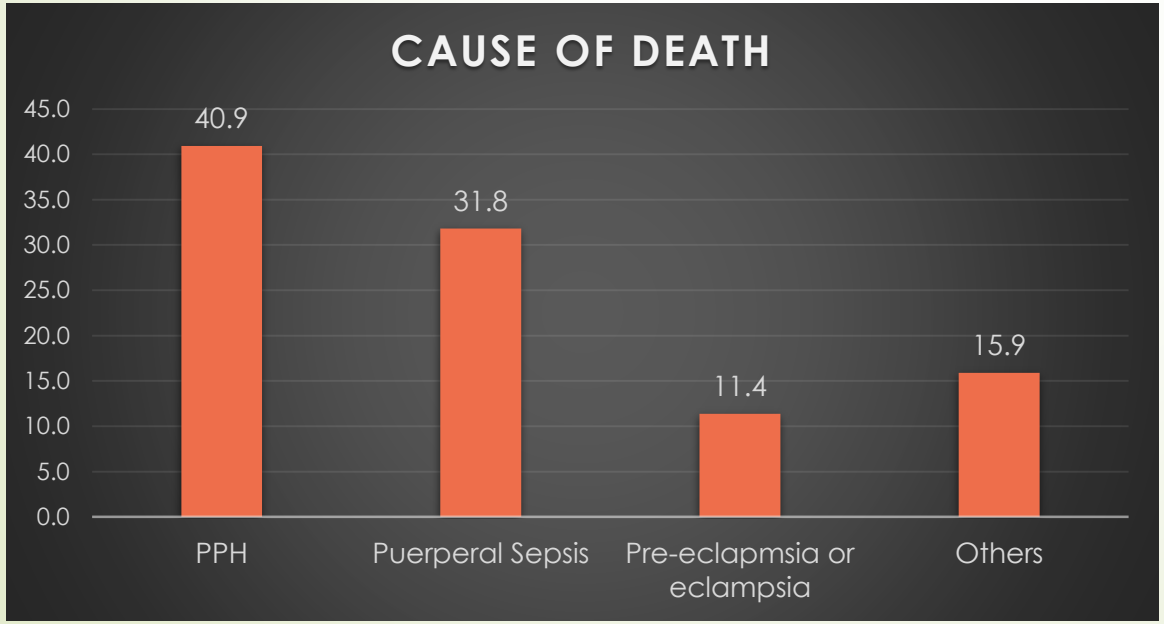
INTERPRETATION:

- This graph shows that 17% (8) women had received ≥4 ANC checkups, 26% (12), 44% (20) & 9% (4) received only 3, 2 & 1 ANC checkups.

- Same number of deaths i.e., 14 (31.8%) occurred in both medical college & private hospitals. 7 deaths (15%) occurred on the way to the facility, 8 (18%) occurred in government facilities like CHC, SDH & DH whereas 1 death occurred at home.

RESULTS



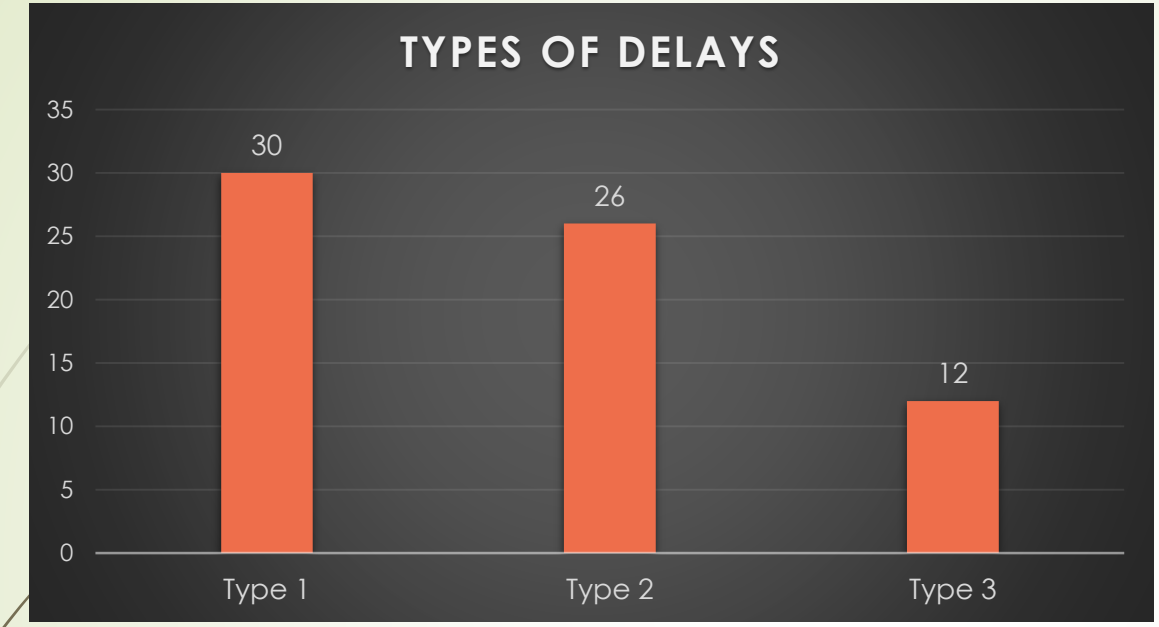


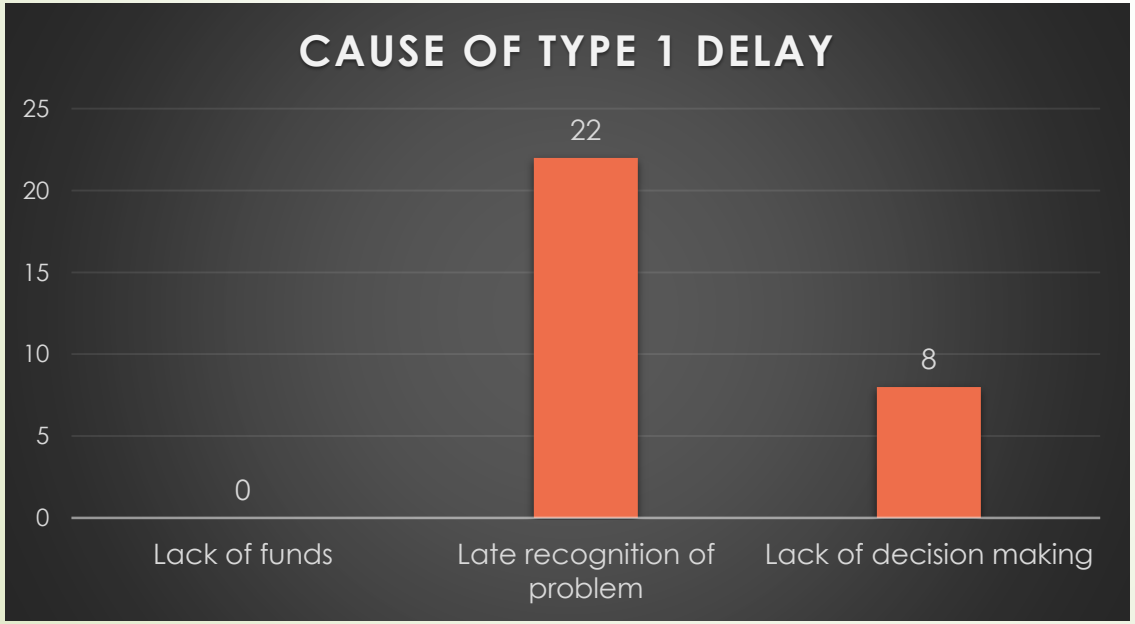
INTERPRETATION:

- Out of all the 44 maternal deaths, 72% (32) were postnatal death.

- Forty-one percent (18) deaths occurred due to PPH/APH followed by 32% (14) deaths due to puerperal sepsis, 11% (5) due to eclampsia.

RESULTS



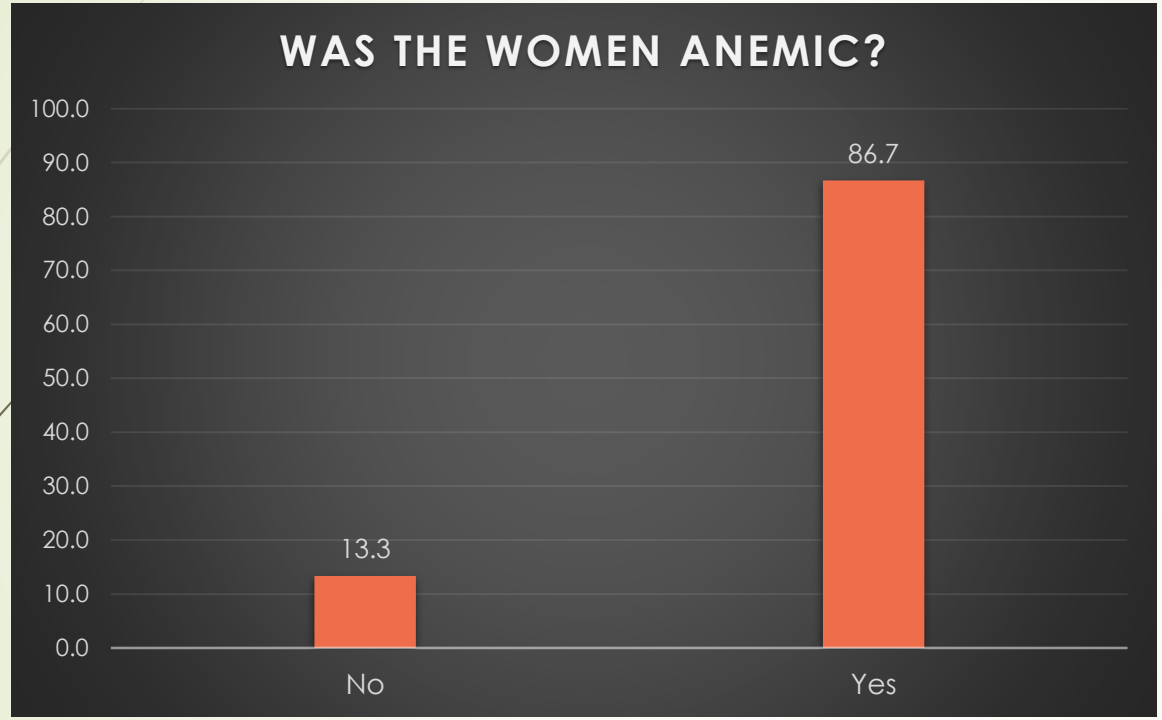


INTERPRETATION:

- 30 deaths were caused due to type 1 delay, 26 were due to type 2 delay & 12 due to type 3 delay. Most of the maternal deaths were caused due to type 1 delay.

- Forty-one percent (18) deaths occurred due to PPH/APH followed by 32% (14) deaths due to puerperal sepsis, 11% (5) due to eclampsia.

RESULTS



INTERPRETATION:

- This graph shows that of all the pregnant women 87% (39) were anemic.

DISCUSSION

- Maternal death is often a consequence of a long and complex chain of delays, and only in few cases death can be attributed to a specific event.

- In this study 87% had multiple delays, with maximum maternal deaths due to first delay followed by second delay & then third delay. This result differs from those in a study of Madhya Pradesh, in which the most common type of delay was 2^{nd} delay followed by 3^{rd} & 1^{st} delay. It seems that local sociocultural practices are playing important role in affecting the different level of delays in different areas. Hence, the steps to reduce these delays should be in such a way that it is socially acceptable, affordable, and accessible.

- In this study main cause of most of the deaths were PPH (40%) followed by puerperal sepsis (31%) & eclampsia (11%). Similar findings have been reported by a systematic review, conducted by WHO, demonstrating hemorrhage and hypertensive disorders as the major contributors to maternal deaths in developing countries

RECOMMENDATION

- Sensitization of the stakeholders regarding significance of maternal death.
- Ensuring timely registration & proper follow-up of all the pregnant women.
- Identification of all the pregnant ladies & their regular home-based care by ASHA worker & ANM is essential.
- Knowledge & awareness about obstetric complications along with early referrals & good transport facilities can reduce maternal mortality.
- Improving the quality of care at health facility level & referral system is paramount and likely to result in further reduction in maternal mortality in Valsad.
- Supervision of all the care-providers is necessary.
- Regular visits & audits should be made to all the health facilities of the district by the concerned district health officials. High Priority Talukas must be paid more attention.

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THANK YOU