

## Original Article

## ANALYSIS OF MATERNAL MORTALITY AT DISTRICT HEADQUARTER, SAHIWAL

Safia Perveen and Hina Ilyas

**Objective:** The objective of the study was to find the incidence of maternal mortality, and causes of maternal mortality in females presenting in a tertiary care hospital of Sahiwal.

**Methods:** It is prospective study on 94 females delivered in a tertiary care hospital. All the women admitted in ward and designed proforma filled, which include scrutiny for age, parity, antenatal care, education, residential area and cause of death. Data was entered and analyzed through SPSS version 21.

**Results:** During the study period, there were 94 maternal deaths out of 3223 live births giving an MMR of 1766-4655/100,000 live births as shown in the table. About 78% cases were un-booked, 92% belongs to rural area, 57% illiterate, 77% were multi-gravidae and 30% deaths were in 30-35 year age group. Hemorrhage was major cause of maternal mortality after eclampsia and then sepsis following hemorrhage.

**Conclusion:** There is need to stress the importance of good antenatal care in reducing MMR. Focusing on special groups of women with targeted program, such as training, monitoring and supervision of birth attendants.

**Key words:** Maternal mortality, pregnancy, parity, causes.

### Introduction

World health organization defines maternal death as death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the site of pregnancy, from any cause related to or aggravated by pregnancy or its management. Approximately half million woman die every year due to pregnancy and child birth complications. More than three quarter of these women are from Africa, Asia and other developing countries.<sup>1</sup> Millennium declaration, September 2000, outlined the targets to be achieved by 2015. Major sub goals were: reduction of maternal mortality by three quarter between 1990 and 2015 and provision of universal health for women.<sup>2</sup> Measuring maternal mortality is the only way to ensure that its reduction remains at top priority.<sup>3</sup> A woman die due to complications of pregnancy and child birth in 2 minutes. It put the family in disaster and continual of sufferings. Pregnancy and child birth is a normal physiological process. But physiological process always does not culminate in safe delivery.<sup>4</sup> There may be maternal or fetal morbidity or even mortality. Death of the mother is basically results in a 'motherless, family. All that leads to serious consequences for children. There care, education and grooming effected which results in useless and criminal persons for society.<sup>5</sup> Largely the complication which arise during labour and delivery, which cannot be accurately predicted may lead to

maternal mortality and morbidity. In developing countries the causes of maternal mortality are haemorrhage, sepsis, hypertensive disorders, obstructed labour and induced abortion. Most of these are caused by avoidable factors. It was men duty to protect women during pregnancy and intervention aimed at increasing male involvement.<sup>6</sup> Major limitation to accessing antenatal care and delivery services are lack of knowledge about ANC, long distance and high transport cost.<sup>7</sup> We can reduce maternal mortality through health education, better understanding, diagnosis and management of pregnancy and labor complication.<sup>8</sup>

### Methods

It is prospective analysis of maternal mortality in Obstetrics and Gynaecology department of District headquarter/Teaching hospital from 1st January 2011 to 31st December 2013. All the women admitted in ward and designed proforma filled, which include scrutiny for age, parity, antenatal care, education, residential area and cause of death. Death defined and classified according to WHO international classification of disease, 10th revision (ICD-10). Deaths were classified as direct, indirect or fortuitous. MMR is defined as number of direct and indirect maternal deaths/100,000 live births up to 42days after the termination of pregnancy. Data was entered and analyzed through SPSS version 21. Descriptive statistics was presented for age, mean and SD were calculated and for parity, booking status,

SD were calculated and for parity, booking status, residence education and cause of death were presented as frequency and percentage.

## Results

During the study period, there were 94 maternal deaths out of 3223 live births giving an MMR of 1766-4655/100,000 live births as shown in the table. About 78% cases were un-booked, 92% belongs to rural area, 57% illiterate, 77% were multi -gravidae and 30% deaths were in 30-35 year age group. As seen from table 3 analysis of causes of death revealed that Eclampsia is the leading cause, on 2nd number was haemorrhage and sepsis, obstructed labour, ruptured uterus, ruptured ectopic pregnancy and anemia respectively 83% deaths were due to direct causes and 17% deaths were due to indirect causes which were anemia, cardiovascular disorder, tetanus, renal failure, diabetes mellitus and dengue fever. Majority of above mentioned death were due to preventable causes of death provided the treatment instituted in time. Training of medical, nurses, Lady health visitors, health workers and birth attendants working in rural areas by programme like basic emergency obstetric care and gives ray of hope in reducing maternal mortality.

**Table-1:** Years wise distribution of maternal deaths and live births

| Year | Maternal Deaths | Live Births | MMR     |
|------|-----------------|-------------|---------|
| 2011 | 46              | 988         | 4655.87 |
| 2012 | 25              | 933         | 2679.53 |
| 2013 | 23              | 1302        | 1761.51 |

**Table-2:** Maternal deaths and its Socio-demographic characteristics.

| Variable  | Characteristic | No of Pts. | Percentage |
|-----------|----------------|------------|------------|
| Age       | < 20 Years     | 07         | 7.4        |
|           | 20 - 24 Years  | 23         | 24.5       |
|           | 25 - 29 Years  | 19         | 20.2       |
|           | 30 - 34 Years  | 29         | 30.9       |
|           | 35 of Above    | 16         | 17.0       |
| Parity    | Primigravida   | 21         | 22.3       |
|           | Multigravida   | 73         | 77.7       |
| Antenatal | Booked         | 20         | 21.3       |
|           | Unbooked       | 74         | 78.7       |
| Residence | Urban          | 07         | 7.4        |
|           | Rural          | 87         | 92.6       |
| Education | Literate       | 37         | 39.4       |
|           | Illiterate     | 57         | 60.6       |

**Table-3:** Maternal deaths and its Socio-demographic characteristics.

| Causes   |                        | Deaths | Percentage |
|----------|------------------------|--------|------------|
| Direct   | Eclampsia              | 29     | 30.9       |
|          | Hemorrhage             | 26     | 27.7       |
|          | Sepsis                 | 16     | 17.0       |
|          | Obstructed Labor       | 03     | 3.2        |
|          | Rapture Uterus         | 03     | 3.2        |
|          | Ectopic                | 01     | 1.1        |
|          | Pragnancy              | 03     | 3.2        |
|          | Anemia                 | 03     | 3.2        |
|          | Jaundice               | 02     | 2.1        |
|          | Heart Disease          | 02     | 2.1        |
|          | Tetanus                | 01     | 1.1        |
|          | Renal Failure          | 02     | 2.1        |
| Indirect | CCF                    | 01     | 1.1        |
|          | DM (diabetes mellitus) | 02     | 2.1        |
|          | Drug Reaction          | 01     | 1.1        |
|          | Blood Reaction         | 01     | 1.1        |
|          | Dengue Fever           | 01     | 1.1        |

## Discussion

The MMR in our study is 1766-4655/100,000 live births. It is in accordance with studies from tertiary care hospital, that was 371-4268/100,000 live birth. The reason is large number of referred cases. Same situation in our hospital, single facility for referral of critical obstetrical emergencies from Tehsil headquarter, Rural health centre, Basic health units and private sector. About 83% deaths were due to direct causes and 17% were due to indirect causes. Most deaths were observed in multipara with age of 25-35 years and 21-35 years in other studies. Most maternal deaths reported in women from rural area (92.4%), unbooked cases (78.7%) illiterate (60.6%) women. All our findings similar to study of Jain M that was (87%), (74%) and (57%) respectively.<sup>9</sup> Nisar N showed high ratio of maternal mortality in women of age 29-39 years.<sup>10</sup> The reason was same in both studies that was rural background, illiteracy and lack of slandered health care.<sup>9</sup> Regarding haemorrhage (27.7%), eclampsia (30.9%), and sepsis (17.0%), our findings were consistent with findings of Bhasker K and colleagues, Jain M, Rehman TT.<sup>9,12</sup> Anisa F found eclampsia and its complications as main cause of maternal death that is consistent with our findings.<sup>13</sup> Most maternal deaths reported in women of rural area (92.4%) in our study. The rural societies need

to address: problems of ignorance, traditional myths and family restrictions on seeking better treatment.<sup>14</sup> MMR dropped from 4655 to 1706/100.000 over three years periods, reasons are up-gradation of hospital as teaching, arrival of highly qualified trained doctors and EMOC training by district government to staff at urban and rural area. The analysis of causes of maternal deaths enables us to formulate strategy for reduction of MMR in our area.<sup>15</sup>

## Conclusion

There is need to stress the importance of good

antenatal care in reducing MMR. Focusing on special groups of women with targeted program, such training, monitoring and supervision of birth attendants. Adequate training of obstetrical life-saving skills, rising community awareness along with intervention program for improving timely referral and up-gradation of hospitals are suggested.

*Department of Obst & Gynae*  
*DHQ/Teaching Hospital, Sahiwal*  
[www.esculapio.pk](http://www.esculapio.pk)

## References

1. Registrar General I. Special bulletin on maternal mortality in India 200709. Sample registration system bulletin 2011.(1)
2. Moazzeni MS. Maternal mortality in the Islamic Republic of Iran: on track and in transition. *Maternal and child health journal* 2013;17(4):577-80.
3. Ashraf M, Sheikh N H, Sheikh A H, Yusuf AW. Maternal Mortality: A 10 year study at Lady Wallington Hospital Lahore. *Ann King Edward Med Uni Jan*;7(3):205-7.
4. Rai SK, Anand K, Misra P, Kant S, Upadhyay RP. Public health approach to address maternal mortality. *Indian journal of public health* 2012;56(3):196.
5. Du Q, Nass O, Bergsjo P, Kumar BN. Determinants for high maternal mortality in multiethnic populations in western China. *Health care for women international* 2009;30(11):957-70.
6. Brubaker K, Nelson BD, McPherson H, Ahn R, Oqutta M, Burke TF. Qualitative study of the role of men in maternal health in resource limited communities in western Kenya. *Int J Gynaecol Obstet* 2016 Dec;135(3):245-249.
7. Srfraz M, Tariq S, Hamid S, Iqbal N. Social and societal barriers in utilization of maternal health care services in rural Punjab, Pakistan. *J Ayub Med Coll Abbottabad Oct-Dec* 2015;27(4):843-9.
8. Begum S, Aziz-un-Nisa BI. Analysis of maternal mortality in a tertiary care hospital to determine causes and preventable factors. *J Ayub Med Coll Abbottabad* 2003;15(2):49-52.
9. Jain M, Maharajah S. Maternal Mortality-A retrospective analysis of ten years in a tertiary hospital. *Indian J prev soc med* 2003;34(3&4):104-11.
10. Nisar N, Sohoo NA. Maternal Mortality in rural community: a challenge for achieving millenium development goal. *J Pak Med Assoc Jan* 2010;60(1):20-4.
11. Murthy BK, Murthy MB, Prabhu PM. Maternal mortality in a tertiary care hospital: a 10-year review. *International journal of preventive medicine* 2013;4(1).
12. Rehman TT, Roohi M. Maternal mortality. *Professional Med J* 2009;16(1):135-8.
13. Anisa F, Naz H, Islam A, et al. Maternal Mortality in a tertiary care Hospital J Ayub Med Coll Abbottabad Jan - Mar 2011;23(1):92-5.
14. Biswas A, Dalal K, Abdullah AS, Grifford M, Haleem MA. Maternal complications in geographically challenging and hard to reach districts of Bangladesh: a qualitative study. 2016 sep 28;5:2417.e collection 2016.
15. Guin G, Sahu B, Khare S, Kavishwar A. Trends in maternal mortality and impact of Janani Suraksha Yojana (JSY) on maternal mortality ratio in a tertiary referral hospital. *The Journal of Obstetrics and Gynecology of India* 2012;62(3):307-11.