In Depth Analysis of Maternal Mortalities at Holy Family Hospital Rawalpindi

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Abstract

Objective: To thoroughly analyze hospital based information pertaining to maternal mortalities, enumerating the causes and identifying the preventable factors.
Study Design: Descriptive observational study.
Setting: Obstetric and Gynaecology Unit-II, Holy Family Hospital (HFH) Rawalpindi.
Duration: 1st January to 31st December 2011
Methodology: A total of 21 mortalities were included in this study and they were critically analyzed by studying various demographic parameters such as age, parity, socio economic status, educational level, distance from the hospital, antenatal care, level of care and cause of death.
Results: The total number of deliveries in the year 2011, in Unit-II of Holy Family Hospital was 9098. Twenty one maternal mortalities were reported in this time period. Haemorrhage (with its resultant sequele) was the commonest cause of mortality followed by sepsis and pregnancy with hypertensive disorders. Major proportion of mortalities comprised of uneducated young woman belonging to low socio economic status and thus deprived of facilities of proper antenatal and intrapartum care.
Conclusion: Obstetric haemorrhage, sepsis and pregnancy induced hypertensive disorders are major causes of death. Data reflect uncoordinated and poor quality health system. Majority of maternal deaths are preventable by improving primary health care system, an organized referral system, easy access and availability of skilled staff and equipment for emergency obstetric care (EmOC).
Keywords: Analysis, maternal mortalities, Holy Family Hospital.

Introduction

According to WHO a maternal death is defined as the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes.[1] Maternal mortality ratio (MMR) is the ratio of number of maternal deaths per hundred thousand live births.[2] It is used as a measure of quality of health care system and is the foundation stone in planning future health policies.

There is paucity of research data on maternity related deaths in Pakistan, as national surveys and studies are complex and costly. According to

available data MMR in Pakistan, is 280/100,000.[3] It is well recognized that maternal mortality numbers are significantly under reported.[4] This figure shows a great disparity between the maternal mortality of developed countries and the developing countries like ours. Lifetime risk of maternal death in developing countries is 1 in 16 as compared to developed nations in which it is 1 in 2800.[5]

Realizing the importance of maternal heath, ambitious and multibillion dollar programs such as global health initiative were launched by president Obama in 2009. Millennium development goals (MDGs) of United Nations are focused to improve maternal and child health even in poorest regions of the world.[6]

This is a purely hospital based study so exact prevalence cannot be calculated. The purpose of this study was to analyze hospital based data in order to identify probable causes of death and to highlight relationship of maternal mortality to selected demographic variables and suggest preventive measures.

Methodology

This was an observational descriptive study conducted at Holy Family Hospital Rawalpindi for one year period from 1st January to 31st December 2011. Data was collected from available records and various demographic factors were analyzed. All direct and indirect maternal mortalities were included.

Results

The total number of deliveries from 1st January, 2011 to 31st December, 2011 in Unit-II of Holy Family Hospital was 9098. A total of 21 maternal mortalities were reported in this one year period. The relations of maternal mortality to various demographic factors are shown in Table I.

Table 1. The relationship of maternal mortality to various demographic factors

Demographic Factor	No of Cases	Percentage
Age		
• <20 years	02	10%
• 20-30 years	15	**72%**
• >30 years	04	19%
Socio Economics Status		
• Higher class	0	0%
• Middle class	05	24%
• Lower class	16	**76%**
Educational Status		
• Matriculate	02	10%
• Middle	03	14%
• Primary	05	24%
• None	11	**52%**
Parity		
• PG / P_1	06	**29%**
• P_2	05	24%
• P_3	04	19%
• P_4 or more	06	**29%**
Antenatal Care		
• None	10	**48%**
• DAI	0	0%
• LHV	05	24%
• Doctors	06	29%
Level of Intrapartum Care		
• DAI	13	**62%**
• LHV	02	10%
• Doctors	06	29%

Travelling Distance to Hospital		
• <1 hr	06	**28%**
• 1-2 hrs	02	09%
• 2-3 hrs	03	14%
• 3-4 hrs	06	**28%**
• > 4 hrs	04	19%

Selected causes of maternal mortality are shown in Table II. Haemorrhage was found to be the leading cause of death.

Table II. Causes of Maternal Mortality (n=21)

Causes	No of cases	Percentage
Haemorrahge	08	**38%**
Sepsis	05	28%
Eclampsia	05	14%
Cardiac disease	01	09%
Embolism	01	4.7%
Inversion of uterus	01	4.7%

The causes of haemorrahge in all cases are shown in Table III. The cause of hemorrhage in two cases was abruption and there were two cases of internal hemorrhage while rupture of uterus and massive PPH were the cause in another 2 cases each.

Table III. Causes of Haemorrhage (n=8)

Causes	No of cases	Percentage
Abruption	02	25%
Internal Hemorrhage	02	25%
Massive PPH	02	25%
Rupture Uterus	02	25%

As shown in the last bar of Figure 1 eighteen cases (86%) were received in critical condition, thus the golden period to help the patients was lost. Thus despite vigorous efforts much could not be done.

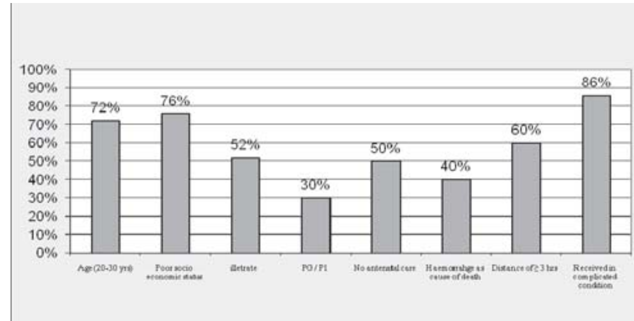

Figure 1. Bar diagram showing percentages of different factors, (n=21).

Discussion

A mother is the centre of a family therefore by saving the life of a mother and improving her health, the health of entire community can be achieved. The realistic picture is very grave and gloomy. About half a million women die each year due to pregnancy related complications.[7] Ninety nine percent of all maternal mortalities occur in developing countries and out of these 86% of maternal deaths occur in Africa and South Asia.[8] Furthermore pregnancy is not a disease and most of the causes of maternal deaths are preventable.[9]

The causes of maternal mortality are multiple, inter-related and complex. The MMR of Pakistan is 273/100,000 (UNICEF) but actual figure is much higher as 85-90% deliveries are conducted by dais, thereby proper registration is not possible.[10] In this study 72% of patients were delivered by unskilled dais and LHVs in domiciliary environments, which is consistent with other local and interna-

tional studies.[10-12] Alarming, majority of the patients were young (<30) and with less parity as shown in Table I. This is in contrast to other studies in which increasing age and multiparty were important risk factors of maternal deaths.[7,13]

Haemorrhage was the foremost cause of death followed by sepsis and PIH which are consistent with various national and international studies.[14-17] The main reason being the strong, persistent tradition of unsafe and unhygienic deliveries at home by untrained personnel.

This study also revealed increased frequency of maternal mortalities in low socioeconomic situation and in the illiterate groups. The literacy rate of females according to Pakistan demographic survey (PDS) (2009-10) is 45% which is one of the lowest in the world. A major proportion of this (75%) comprises of urban female population. Thus majority of badly managed females are from rural areas as they are not aware of their basic rights and because of ignorance, traditional hurdles and poverty they are not properly cared for.

Eighty six percent of patients were received in a complicated condition. Reasons being that health care centers were at long distances and majority of the centers were not adequately equipped and staffed to provide EmoC care.

According to PDS (2006-2007) there are 9846 health care facilities including RHUs, BHUs and MCH centers but still the health care system remains uncoordinated and dysfunctional with poor quality services.

Despite being a very populous country only 1% of GNP is spent on health in Pakistan. We are pitifully lagging behind the millennium goals. Hence examples of countries like Sri Lanka should be followed, where maternal mortality has significantly decreased due to universal access to skilled midwifery care.[18] Standard, simple, practical, epidemiological templates should be made available to facilitate the collection of accurate and relevant data so that properly directed strategies could be endorsed.

Conclusion

There is absolutely no doubt that a healthy mother is the pillar of a healthy and prospering society. Maternal death has crippling, devastating and far reaching impact on a family and the society. Sadly maternal mortality rate remain very high in our country as compared to the developed world. Major causes of maternal deaths being haemorrhage, infection and PIH related complications. Poor socio economic and educational status, lack of easy accessibility to trained health care providers and health centers are other contributing factors. To reduce maternal mortality we have to strengthen the four pillars of safe motherhood including antenatal care, clean safe delivery, easy access to emergency care services and availability of family planning services.

There is an urgent and unarguable need to enhance, empower and upgrade the present health system, assuring availability of trained health care providers at primary care level, a strong organized, functional referral system to centers where equipment and staff well versed in EmOC are available. Emphasis and attention has to be paid

on public awareness and easy availability of family planning services.

Reducing maternal mortality is not a miracle but a serious, conscious, devoted effort. Combined effort has to be made by the politicians, health care providers and the community at large.

References

1. Maternal mortality in 2005: Estimates developed by WHO, UNICEF. UNFPI and The World Bank. Geneva, World Health Organization, 2007.
2. Nour NM. An introduction to maternal mortality. Review in Ob Gyn 2008 ;1:77-81.
3. UNICEF-Pakistan Statistics,2005-2009.
4. Horon IL, Cheng D. Under reporting of pregnancy associated deaths. Am J Public Health 2005;95(11):1879.
5. Potts M. Can family planning reduce maternal mortality? J Obset Gyn East Cent Africa 1986 ;5:29-35.
6. Hogan MC, Hill K, Arifeen S, Koenig M, Al-Sabir A, Raggers H, et al. Maternal Mortality for 181 countries, 1980-2008: a systematic analysis of progress towards Millennium Development Goals .The Lancet 2010;375:1609-1623.
7. Khan KS, Woldyla D, Say L, VanLook P.WHO systematic review of causes of maternal deaths. Lancet 2006;367:1066-1074.
8. Maternal Mortality In Central Asia.Central Asia Health Review (CAHR),June 2008.
9. Campbell OMR ,Graham WJ.Strategies for reducing maternal mortality:getting on with what works.Lancet 2006;368:1284-1299.
10. Jhokio AH,Winter RH,Cheng K.An Intervention Involving Traditonal Birth Attendants and Periantal & Maternal Mortality in Pakistan.NEngl J Med 2005;352:2091-2099.
11. World Health Organization.The world health report 2005:make every mother and child count.Geneva:WHO,2005.
12. Jafary SN .Maternal Mortality in Pakistan:an overview.Maternal and perinatal health 1991.TWEL Publication Karachi:21-31.
13. Iqbal Begum.Analysis of maternal mortality in a tertiary care hospital Abbottabad. Pak J Med Res 2000;39(3):107.
14. Karim T ,Khan NH .Maternal Mortality reasons and remedies .Med Channel1998;4:19-22.
15. Abdul Hakim,Sultan M Fatehuddin.Pakistan reproductive health, family planning survey 2001:a preliminary report Islamabad .Nat Inst Popul Stud 2001.
16. Nikwocha GC, Anya SE, Obstetric mortality in Nigerian general hospital Niger J Med 2006;15:75-76.
17. Khan KS, Wolyla D, Say L, VanLook P.WHO systematic review of causes of maternal deaths.Lancet 2006;367:1066-1074.
18. Rosman C, Graham WJ, on behalf of the Lancet Maternal Survival Series Steering Group. Maternal mortality: who, when, where and why. Lancet 2006; 368:1189-1200.