Maternal Death and its Causes - A Challenge for Achieving Millennium Goals

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Background: Maternal death is not the only death of a leady but it is in fact a death of a family. one of the millennium goal of WHO is to reduce maternal mortality by three quarters up to 2015. In order to achieve the role it is essential to have basic figure from worldwide. District head quarter women & children hospital DHQ (W&C), Dera Ismail Khan situated in southern areas of NWFP is providing as emergency obstetric care to this area and peripheral areas of Punjab & Bulochistan. Maternal mortality ratio & and its causes in Distt Headquarter setting of D.I Khan can serve as a baseline figures for planning the strategies for achieving millennium goals. **Research Methodology:** The study was carried out in District Headquarter for women in Dera Ismail Khan. It was a seven year study starting from 1st January 1999- 31st December 2005. It is a descriptive retrospective hospital based study. The record was collected from admission Register, Labour Register, and maternal mortality register. **Results**: In the seven years period total No of live birth were 11811 and there were 131 maternal deaths. Maternal mortality ratio was 1109/ 100,000 live births. Direct causes of maternal death contributed to 94.5% and indirect causes contributed to 5.35%. Hemorrhage, the leading cause of maternal death was responsible for 57.5% of maternal deaths. Antepartum (APH) and post partum (PPH) contributed equally. Obstructed labour killed 13.9% of the mothers, eclampsia killed 16.74% while infections killed 5.35% of the mothers. Indirect maternal deaths were hepatic coma, sever anaemia and cardiac failure. **Conclusion**: The challenge for achieving millenium goals is very high. The leading cause of death of the mothers is haemorrhage. The three delays i.e delayed decision, delayed transport, and delayed management are the virtual causes. To achieve the millenium goal we need to improve the first level health care facilities. We also need public awareness, rising the self determination and women's right and women empowerment and her role and decision maker.

Keywords: Maternal mortality ratio, obstetric haemorrhage, eclampsia, obstructed labor, infections

Maternal mortality has been placed as a human right and equity issue[1] it is the fundamental right of a women to survive pregnancy and childbirth. Pregnancy is special and we need to make the women safe. Dr. Lee Jong-wook WHO Director-General states, "Mother and children are the foundation of families, communities and societies. When mother or child dies that foundation crumbles. If we want to improve healthy future to the generations we must start with health of the mother and children today". Due to maternal death one million children are left motherless each year. These motherless children are 3 to 10 times more prone to die within two years than children with both parents alive[2]. The millennium declaration in UN millennium summit in September 2000 was to reduce maternal mortality by three quarters by 2015[3].

To reduce maternal mortality we not only need maternal mortality statistics but we also need to know the factors and causes leading to maternal death[4]. For implementation of reproductive health programs it is curtail to have a comprehensive summary of the magnitude and distribution of causes of the maternal death in low income countries where the epidemiological information for maternal death are not available[5]. It is therefore essential to improve data synthesis and reporting the vital statistics about maternal death[6]. Improvement in the quality of recording, reporting and geographical coverage of the burden of the diseases studies increase the function and implementing future estimates[7].

In developing countries the lifetime risk of the maternal death is much greater[8]. To reduce maternal mortality a functional district health system must exist for the availability, accessibility, use and quality of essential obstetric care to the population at risk[9].

The objective of this study is to show the maternal mortality statistics of DHQ hospital D.I.Khan where improvement in the mother and child health are expected to be high in future because the status of the hospital has been converted to a Tertiary Care Teaching Hospital.

This will make a baseline statistics for planning health services and reduction in the maternal motility programme. DHQ hospital D.I.Khan is situated in the southern areas of NWFP. The covering area of this hospital ranges from the peripheral areas of Punjab, Balochistan, North Waziristan and Afghanistan. Dera Ismail Khan is also one of the target district for "Women Health Project" (WHP) and the "Save the Children" programme.

Material and Methods:

The study was conducted at Woman and children (Zanana) hospital D.I.Khan. The study was retrospective and descriptive in type. The data was collected from maternal mortality register. The study period was1.1.1999 to 31.12.2005.

The information recorded in the register were identity, age, area, condition and time of arrival, treatment given, time and causes of death of the mother. Total number of

deliveries and live births were counted from labour and admission registers. Relevant data was recorded on a Proforma. Maternal mortality ratio and causes of death were calculated in percentage according to WHO definitions.

Results

In the seven years period total number of live births in the hospital were 11811. There were 131 maternal deaths. Maternal mortality ratio was calculated to be 1109/100,000.

The causes of death were divided into direct and indirect causes. Seventy-four mothers i.e. 94.5% died due to direct causes while seven i.e., 5.35% of the deaths were due to indirect causes according to WHO definition.

Haemorrhage was the leading cause of death. Seventy-four mothers i.e. 94.5% died due to obstetrical haemorrhage. Antepartum and postpartum haemorrhage contributed equally. Thirty-seven patients presented antepartum haemorrhage. Thirty of them were in shock. Twenty-three of them were preterm and fourteen were at term. Four of them had Caesarean section and six were delivered vaginally. Four had postpartum haemorrhage. Postpartum haemorrhage was responsible for killing thirty-seven i.e. 28.25%. Ten patients had retained placenta and were in shock at arrival. Fifteen other patients had home delivery and presented in shock with postpartum haemorrhage due to birth trauma, relaxed uterus and /or retained products of conception. Twelve mothers had hospital delivery.

Obstructed labour was responsible for killing eighteen mothers making13.9% of total. Out of these eleven had uterine rupture and were in shock while others died of septicemia, haemorrhage during caesarean and other postoperative complications.

Eclampsia killed twenty-two mothers i.e. 16.74%. Seven of them were antenatal, five were intranatal and the rest were postnatal. Chest complications, renal failure and persistent fits were the causes of death. Three patients died of cardiac arrest during anesthesia for elective caesarean section.

Seven women i.e. 5.35% died of infections. Four of them had postnatal sepsis. All of them were delivered by T.B.A at home. Three women died due to unsafe abortion. They presented with septicemia and perforation of uterus and gut. Indirect causes were responsible for seven cases i.e.5.35%. Four mothers died of hepatic comma and two died of cardiac failure due to severe anemia.

Direct						Indirect
Hemorrhage		Obstructed Labour		Eclampsia	Infection	Hepatic Coma , Cardiac Failure, Sever Anemia
74 = 94.5%		18=13.5%		22=16.74%	7=5.35%	6=5.15
APH	PPH	Ut Rupture	Others	Ante a postnatal		
37	37	11	7	17	5	

Discussion

Maternal mortality has been recognized to be a leading development indicator in the new millennium. It has even replaced the gross national product, which was used as financial indicator in 20th century[10]. Maternal mortality ratio has been used as a main verifiable indicator in the health planning and programming[11]. The millennium declaration of W.H.O has heightened the attention of the demand for measure of maternal mortality at national, sub national and regional level[12].

Our objective of measurement of maternal mortality was to provide basic data in a district hospital setting, which is the provider of emergency obstetric care to the community. However it is only the tip of the ice-burg because majority of births and deaths occur at home and are not reported. Only those mothers are referred to the hospitals that develop complications.

In the seven years periods from 1st January 1999 to 31st December 2005 the maternal mortality ratio has been 1181/100,000 live births. This is quite high but comparable to maternal mortality ratio of 1300/100,000 at Lahore[13] and at Abbotabad 1200/100,000[14]. The covering area of the hospital is large. The patients are brought from the hills of Waziristan and Afghanistan, from the sands of Marwat area on the donkeys and camels back and on the boats from across the river Indus. Sometimes even this communication is even lost. All the three delays i.e. delayed decisions, delayed transfer and delay at facility in providing help are responsible.

Causes of maternal mortality are divided into direct and indirect causes. These are calculated individually. The direct causes of maternal deaths were 94.5%. as compared to 88.44% reported from Kohat[15] and 80% reported from others areas of Pakistan and global figures[5/16]. The reason for this is that the study was conducted in woman and children hospital and mothers with non obstetrical causes were referred to the concerned specialty under intensive care units which is situated in the DHQ hospital 1½ kilometer away from (W and C) hospital.

In our study 57.2%of the deaths were attributed to haemorrhage. Antepertum and post partum haemorrhage shared equally i.e. 28.25% of each. In WHO analysis of the causes of maternal deaths Khalid. et.al[(5)] reported obstetric haemorrhage to be the leading cause of maternal death however contribution of antepartum haemorrhage has not been indicated. These women cannot be helped at home or by TBA. Postpartum haemorrhage contributed to 28.5% of maternal deaths. The figure is slightly higher than the figure of 25% quoted globally and in Pakistan[(16)]

Hypertensive disorders and eclampsia were responsible for the deaths of 16.7% mothers. The main causes of death were chest infections / pulmonary oedema, renal failure and status eclampticus. The figure is nearly equal to WHO figure of 20%(). Magnesium sulphate was not available in those years in DIK.

Obstructed labour was 13.9% in our study while WHO figure is 8%. This is because of lack of awareness about antenatal care; improper assessment by the TBA and delayed decision. Out of these 18 cases 11 had uterine rupture and were in shock. Misuse of oxytocine and prostaglandin, and improper handling by skilled birth attendant (GP, nurse, mid wife) were involved.

Infections accounted for 5.2% of the maternal deaths. WHO figure for infections is 15%. In another study reported from Kohat the infections accounted to 8.5%[15]. Out of the seven cases of infections four of them had developed infections after delivery at home. Three deaths were due to unsafe abortion. The reason for the low figures may be due to the fact that study is hospital based and are under reported and because they are usually concealed and hesitant to reach hospital. They were mishandled and had evacuation and curettage by untrained midwives and presented with perforation of uterus. Inspite of these the trained birth attendants are still providing support and opinion for the people living away from health care facility and they should be involved in promoting reproductive health and hygiene, avoid delays in seeking care for complications and perhaps to help with vital surveillance[17].

Caesarean section can save the lives of both mother and foetus even though hypovolemia, anaemia, and sepsis from obstructed labour and uterine rupture are often present[18]. However due to anaesthetic risk three women died due to cardiac arrest. All of them were planned for elective C.S. Paul. M.Fenber et al. emphasized that a wider use of spinal anesthesia, improved surveillance and resuscitations in postoperative period can reduce the maternal mortality from C.S[18].

In direct causes contributed to 5.3% of maternal deaths a figure much lower than the WHO figure of 20% the reason was that those cases ware referred to the concerned speciality, which is situated in DHQ hospital, half a kilometer away from Woman and Children Hospital.

Because of the routine reporting system and for conducting special studies health facilities are the resources of calculating maternal mortality ratio. Data from vital registers in the majority of developing countries are incomplete. However for 1/3rd of the world they are estimated to be adequate[19]. Increase in the tendency for underreporting and misreporting is due to the fact that all the patients do not reach the health facility, relatives are scared either to be blamed for death or do not have time and conveyance for travelling to the place where the deaths are recorded.

Conclusion

This hospital based calculation of maternal mortality and its causes can serve as a basic data upon which to plan actions for reduction in the maternal mortality. Obstetrical haemorrhage are the common causes of death the main causes failure to recognize alarming signs, delayed decision, delayed in transportation and poverty. Delay in the facility was more often due to lack of the essentially life saving medicines, disposable item like cannulae, syringes, endotracheal tubes and catheters. The blood bank could only arrange blood on donor basis and the donors were not available and the mothers brought to the hospital by unconcerned people.

Mishandling and misuse of oxytocin by the birth attendants both skilled and unskilled was responsible for a large number of deaths, resulting in uterine rupture, perforation and septicemea.

Recommendation

The role of skilled birth attendant cannot be denied in improving reproductive health. They should also be involved in calculating maternal mortality and be answerable to a confidential death inquiry committee. The women are quite afraid of the hospital environment and its procedure. All those concerned with providing obstetric care should have very good moral character and should have good communication and counseling skills. There should be a lassian between hospital staff and birth attendant at G.P clinic, B.H.U, R.H.C and M.C.H center with availability of ambulance at each center. Blood bank should have the blood available for emergencies by arranging blood donation campaigns. Like communicable diseases the maternal mortality should be included in the list of reportable cases.

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