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Root causes of maternal mortality: Infancy to Motherhood

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Every minute of every day a woman dies as a result of pregnancy or childbirth. The loss per annum of 500,000 women is mind boggling. A maternal death is the outcome of a chain of events and disadvantages throughout a woman's life. Every time a woman in the third world becomes pregnant, her risk of dying is 200 times higher than the risk run by a woman in the developed world.

Ten years ago in 1987, the Safe Motherhood Conference was held in Nairobi. It brought into focus the enormous inequities in the health of women. In Europe and North America, maternal mortality has reached the irreducible minimum while 99 percent of the maternal deaths occur in the developing world. The Safe Motherhood Initiative was launched, which hoped to reduce maternal mortality to half the current rate by the year 2000 AD

It is difficult to know precisely how many women die annually as a result of pregnancy and childbirth. Though registration of births and deaths is compulsory; many a time a maternal death is unreported or wrongly classified.

The maternal mortality collaborative study was initiated in 1983. A national voluntary surveillance of maternal deaths from 1980-85 was conducted, and 37 percent more maternal deaths were reported than by the National Center for Health Statistics.[1]

Many countries maintain poor records and do not supply the necessary information to the UN. The three countries - India, Pakistan and Bangladesh account for 28 percent of the world's births and 46 percent of its maternal deaths. Africa comes next where 150,000 women die annually followed by Latin America with 34,000 maternal deaths. Rates tend to be lower in urban areas than in rural in most parts of the world as the city dweller has easier access to medical services.

In a UNICEF publication [2]., titled 'The lesser child', the disadvantages of being born a female are highlighted. Girls are likely to be less breasted and for a shorter period than boys with the result that they are malnourished from the beginning of there lives. They are subjected to heavy work both within and outside the house at an early age. When ill, they are less likely to receive medical help. What is more shocking is that by the age of five years, female mortality exceeds that of males by 20 percent in Bihar, Haryana, Madhya Pradesh, Manipur, Punjab, Rajasthan, Tamil Nadu and Uttar Pradesh.

In schools, the situation is similar: fewer girls attend both primary and secondary schools than boys. The report stresses the urgent need to address the problems facing India's 200 million women under the age of 20.

Grant in 'The State of the World's Children' [3]. has shown the relationship between female literacy rate, contraceptive prevalence, the crude birth rate (CBR) and the maternal mortality rate. In Bangladesh, the female literacy rate is 19 percent, contraceptive prevalence is 25 percent, the CBR 41, and maternal mortality is 600 per 100,000 births. In India, the female literacy rate is 29 percent, contraceptive prevalence 34 percent, the CBR is 31 and maternal mortality stands at 340. In Malaysia, the female literacy rate is 65 percent, contraceptive prevalence 54 percent, the CBR is 32, and the maternal mortality rate is 59/100,000. Singapore at the other end of the scale has a literacy rate greater than 80 percent, a contraceptive prevalence of 74 percent, the CBR is 18 percent, and the maternal mortality rate is as low as five percent.

Sex determination by chorion villus sampling (CVS) though illegal continues to be surreptitiously practiced as the desire to procreate a male child is deep-seated. This entire subject is related to several closely knit die-hard practices including reluctance to educate and difficulties in education a female child. The anxiety of saving hard earned money for 'a dowry' and even, after marriage, the constant and repeated demands from the family of the groom are hard to meet. 'Dowry deaths' still continue and prior to such extreme steps, the physical and mental torture of young girls is shocking.

Another old practices that of female infanticide, continues, and has been well written about by Venkatramani.[4]

Though violence against women is outside the subject of maternal mortality and safe motherhood, mention must be made of the number of deaths that occur in young women-suicidal or homicidal-and the unwritten morbidity, both physical and mental, preceding such deaths.

The education of women should receive top priority in a welfare state. Though primary education for women is compulsory and free, the situation is appalling. There is very little supervision with reference to their attendance and by the age of six or seven they are either at home cooking or looking after their younger siblings or working.

Child labor though banned continues to flourish often with the connivance of the lawmakers. Women's groups and citizens with a conscience for social reform and radio and television programs are in a very small way educating and enlightening women.

A study conducted by the Indian Institute of Management found that the ratio of men to women seeking medical attention at a primary health center was 5 to 1. Because of ignorance and household responsibility women tend to neglect themselves.

Maternal deaths due to hemorrhage, infection, toxemia and cardiac disease are declining in the West due to improved medical practice. Cardiac disease in pregnancy is associated with a high mortality. Heart disease can be congenital but more often it is acquired. It is the aftermath of inadequate treatment of rheumatic fever in childhood. Valvular disease of the heart follows, which jeopardizes the life of the young girl when she is pregnant. Similarly, acute nephritis following a sore throat can lead to nephropathy and chronic hypertension.

When patients with chronic hypertension are pregnant, they are prone to super added toxemia with all its serious consequences.

In India, hemorrhage (25.6 percent) ranks first as the cause of maternal death, followed by sepsis (13 percent), toxemia of pregnancy (11.9 percent), abortions (8 percent) and obstructed labor (6.2 percent) while other causes together total 35.3 percent.

The incidence of ectopic pregnancy is reported to be as high as 1 in 30 to as low as 1 in 300. Most workers feel that the incidence is increasing due to the rise in pelvic inflammatory disease (PID), the greater use of the IUD and the incidence of tubal surgery. In India, five million sterilizations are performed annually and when the operation fails there is an increased risk of an ectopic gestation. The new high technology of Assisted Reproduction is not available to most women in the world, but it is worth remembering that the world's first test tube baby was an ectopic pregnancy (Steptoe and Edwards) and there is a high incidence of such pregnancies (5-10 percent) associated with this technique.

With improved diagnostic methods, such as the early detection of serum ***B***-hCG, good resolution ultrasound machines particularly the use of the endovaginal probe and laparascopy, more and more ectopic pregnancies are diagnosed before rupture, but again such a facility is available to only a few women in the world. Even in the USA, ectopic gestation is still one of the leading causes of maternal death.

In most Indian data, ectopic gestation is classified under 'death from hemorrhage'. High risk factors associated with pregnancy should be recognized. They are:

- Maternal age less than 17 or over 35 years
- Maternal height less than 145 cm.
- Maternal weight less than 40 kg. or greater than 70 kg.
- Last delivery within two years
- History of a previous instrumental delivery particularly a Caesarian section
- History of antepartum or postpartum hemorrhage
- History of repeated abortions, stillbirths or neonatal deaths
- History of a twin delivery
- History of a pre-term delivery or of a small or large baby, and
- History of medical diseases such as hypertension, heart disease, diabetes, renal disease, tuberculosis and anemia.

With reference to abortion, 150,000 - 200,000 deaths occur from abortion annually.[5] Of the maternal deaths, in South America, close to 50 percent are due to an abortion.

Tetanus toxoid is freely available yet according to a study conducted by the London School of Hygiene and Tropical Medicine, 15,000-30,000 cases of maternal tetanus occur annually - a neglected cause of maternal mortality.

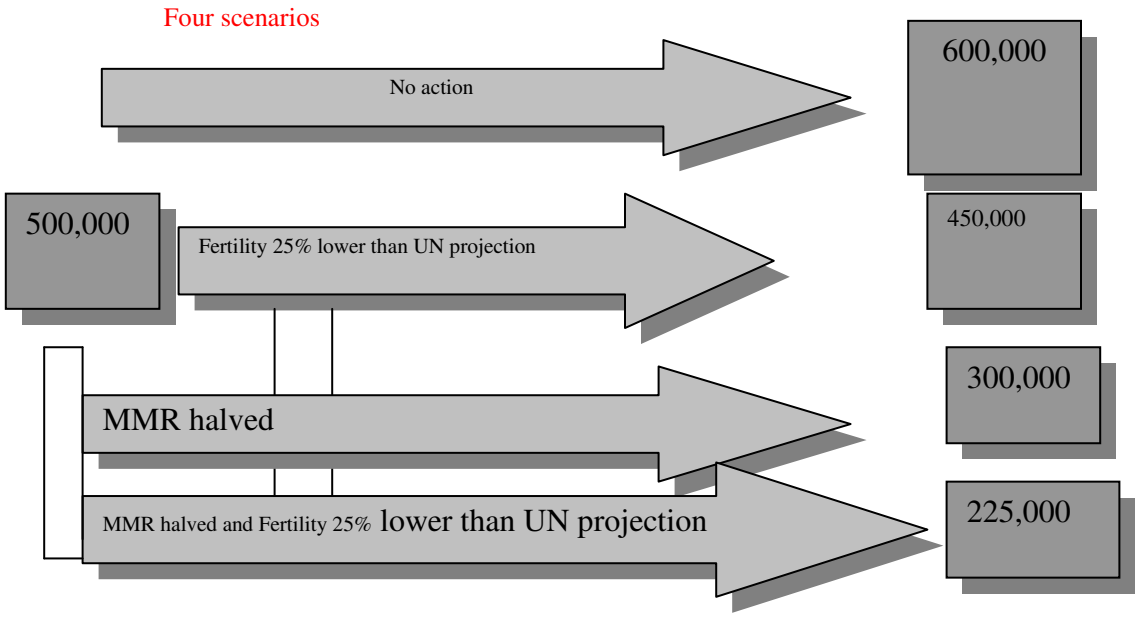
AIDS is almost an epidemic in certain parts of the world. The ideal would be routine HIV testing of and counseling to all women. The health attendant must prevent HIV infection in women of childbearing age, prevent pregnancy in HIV infected women and interrupt the vertical transmission of infection from an infected mother to her child.

Important contributing causes of maternal mortality in developing countries are anemia, poverty, ignorance and malnutrition, repeated pregnancies, inter current infections, parasitic and helminthic infestations and haemoglobinopathies. The percentage distribution of deaths from puerperal sepsis was 13.1 in 1986. It has been reduced to 8.1 in 1990 [6] - a small but significant step in reducing maternal mortality.

A recent World Bank study [7]states that India cannot fully achieve its population and health objectives until the full range of contraceptive choices is made available to Indian women and they are permitted to control the spacing and timing of pregnancies.

Sundari [8] summarized the factors contributing to the high levels of maternal mortality in developing countries. They are an inadequate health care system, misplaced priorities, inaccessibility of essential health information, lack of minimal life saving equipment, and faulty patient management.

Figure1: Shows an estimated maternal deaths in a year



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