TRENDS IN THE MATERNAL MORTALITY IN PAKISTAN BETWEEN 1990- 2010

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ABSTRACT

Background: Maternal deaths during pregnancy are one of the major challenges for Pakistan. In order to utilize the available resources effectively, the knowledge about figures and trends of maternal mortality are of paramount importance. It is also essential for monitoring the progress towards the achievement of millennium development goal 5, the target of which is 75% reduction in maternal mortality ratio (MMR) from 1990 – 2015 .This article focuses on the trends in the maternal mortality and associated maternal health indicators in Pakistan from 1990 to 2010.

Material and Methods: Literature review of articles, National Health Surveys and reports from the International Organizations between 1990 and 2010 regarding maternal deaths in Pakistan was done. Information was obtained by searching Pub Med, Science Direct and Medline databases.

Results: Maternal mortality ratio in Pakistan has gradually reduced from 490 in 1990, 340 in 2000 to 260 per 100,000 live births in 2008. There is a slow progress in antenatal care coverage, deliveries performed by skilled attendants, deliveries at health facilities and utilization of caesarean section services. Post partum haemorrhage, puerperal sepsis and eclampsia are the leading causes of maternal deaths in Pakistan. Poor quality and inaccessibility to health care facilities, gender inequality, high fertility rates, poor utilization of contraceptive methods and malnutrition are important determinants responsible for high rate of maternal deaths.

Conclusion: Pakistan has shown slow progress since 1990 towards targeted reduction in maternal mortality. However, it is on the track to achieve 75 percent reduction in MMR by 2015.

Keywords: Trends, Maternal Mortality ,MMR.

INTRODUCTION

Maternal health is an important element of the country's health care system [1]. Reduction in the maternal deaths remain a major aim for the health policy makers and health care providers worldwide [2]. Maternal mortality which is the death of women during pregnancy and within 42 days post partum was globally estimated to be 576300 in 1990 and 535900 in 2005, with an annual decline of only 0.48%. Similarly, yearly reduction of maternal mortality ratio" was recorded to be 0.37%[1]. There is however, a great discrepancy regarding the risk of maternal deaths during pregnancy and after delivery between the developing and developed countries i.e. 1 in 6 and 1 in 30,000 respectively. This tremendous difference poses a great challenge for the achievement of the Millennium Development Gaol(MDG) 5 which aims at reducing country specific and worldwide maternal mortality by a quarter between 1990 and 2015[3].

Pakistan is a developing country situated in South Asia. According to a report published in 2008, Pakistan is amongst the 11 countries responsible for 65% of all maternal deaths[4]. In 2008, Pakistan had an MMR recorded to be 260 per 100,000 live births. In spite of being committed to Safe Motherhood Initiative in 1987 and Millennium Declaration in 2000, Pakistan has shown a slow progress in achieving MDG 5[5]. Each year around five million women in Pakistan get pregnant, out of which 15% face some pregnancy related complication and 20% of adult women die of obstetric causes[2].

Pakistan inherited a rudimentary health care system from the Britain since its independence. In 1955, the developmental plans were made in stages of 5 year and each stage was referred as Five Year Plan. It was in 1970's, that the infrastructure of public health care system was introduced in Pakistan. It then gradually upgraded its health care structure into primary, secondary and tertiary levels of care. It was during the Seventh Five Year Plan in 1988-1993 that great emphasis was put on maternal and child health, family planning and introduction of community health workers. In 1993-1998 the Health Management Information System (HMIS) and Prime Minister Program for "Family Planning and Primary Health Care" was initiated. In recent programs more emphasis is being given to primary and secondary health care services as compared to the tertiary level care in order to provide equal health services to all [6].

This article focuses on the trends and indicators of maternal mortality in Pakistan between 1990 and 2010 by analysing the published research.

MATERIAL AND METHODS

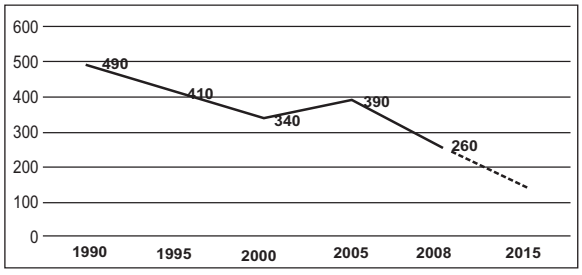
Data was collected and analysed by searching through published research and related National and International articles and reports on maternal health in Pakistan. These were searched on the internet by

using Science direct, Pub Med and Medline data basis. Search was done for the articles between 1990 and 2010 using the terms “trends”, “maternal mortality”, “maternal deaths” and “Pakistan”. 300 articles were collected out of which 90 were found relevant to the topic. The articles were arranged and the most relevant articles were selected by reading the abstracts.

In addition, most of the statistics were collected from the Pakistan Demographic and Health Surveys (PDHS) of 1990-91 and 2006-07 which is one the most reliable source of data available in Pakistan. PDHS is carried out since 1990 by the National Institute of Population Studies. This institute is working in collaboration with the Federal Bureau of Statistics, the Aga Khan University and National Committee for Maternal and Neonatal Health.

RESULTS

Pakistan is among the developing countries in South Asian region with high maternal mortality ratio “number of maternal deaths per 100,000 live births”. It is 8th among the Asian countries with high maternal mortality ratio[2]. According to a report by the World Health Organization (WHO), the MMR in Pakistan was estimated to be 490 per 100,000 live births in 1990 which gradually decreased to 340 per 100,000 live births in the year 2000 and 260 per 100,000 live births in 2008. The number of total maternal deaths was recorded to be 14000 in 2008 and life time risk of maternal deaths being 1 in 93 during the same period. Furthermore, the percentage of total change in



maternal mortality ratio between the year 1990 and 2008 was reported to be -48 while the annual change was recorded to be -3.6. Thus, it has shown more than 40% decline in MMR between 1990 and 2008.

Figure 1: Trends in Maternal Mortality Ratio in Pakistan 1990 - 2015

In addition, there are some globally recognized maternal health indicators which reflect the maternal health status of a country. WHO recommends that a woman, throughout her normal pregnancy should pay at least four visits with a trained health professional [7]. In Pakistan 1990-1991, the percentage of women paying at least one antenatal visit was recorded to be 26%. However, in 2006-2007 approximately 28% of

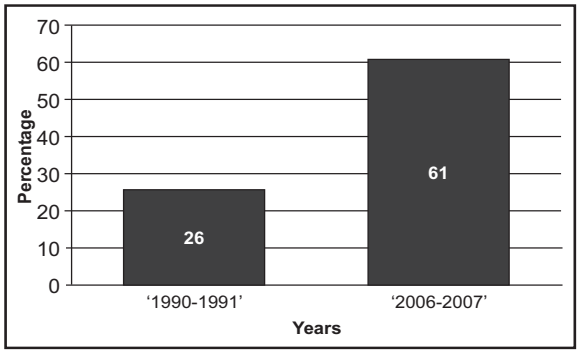
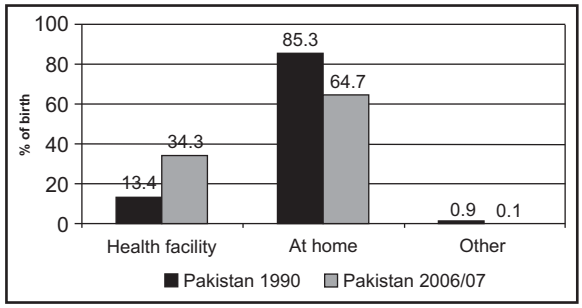


Figure 2: Percentage of women b/w 15-49 years visiting skilled health personnel atleast once during pregnancy

women during pregnancy paid four antenatal visits to the skilled health professional and 61% of the females attended antenatal clinic once only in their entire pregnancy during the same period. This shows an increase of 35 % since 1990-1991 [8].

In the same way, the percentage of live births attended by skilled health personnel rose from 19% in 1990-1991 to 39% in 2006-2007 [8](FIG.2). According to the available data, in 1990-91 only13.4% of the



births were at health facilities and the majority of them i.e. 85.3% were home deliveries. On the other hand, in 2006-2007 the percentage of home deliveries were 64.7% while 34.3% of the births took place in health facilities [9](FIG.3).

Figure 3: Place of delivery

C-section is one of the major emergency obstetrical care services when complication during delivery occurs. The minimum recommended target of c-section by United Nation is 5%[10]. In Pakistan total percentage of newborns delivered by c-section rose from 2.7% in 1990-91 to 7.3% in 2000/2007[9]. However, there was a great discrepancy among the utilization of c-section services between the rural and urban women. In rural areas only 1.3% of the women utilized c-section services in 1990-1991 while 5.7% by urban women. Same difference was observed in 2006-2007, with the rate of c-section utilization being 2.9 %by the rural while 4.9% by urban women [9].

According to the National survey, in 1991 ap-

proximately 30% of pregnant women among received tetanus toxide vaccination whereas, in 2006-2007 the percentage rose to 60% [11, 12].

It has been estimated that the high risk period for the maternal deaths is from the last quarter of the ante natal period to the 1st week post partum[7]. It is however recommended that women should receive at least 2 check-ups within 45 postnatal days. According to a survey 2006-07 only 43% of the females received post natal check up[11].

DISCUSSION

Maternal mortality is an important measure of women's health and is indicative of the performance of health care system. However monitoring progress towards the goal has proved to be problematic because MMR is difficult to measure specially in developing countries like Pakistan with a weak health information and registration systems. This has lead to interest in using alternative indicators. This article shows the trends in the maternal deaths and the major indicators of obstetric care. Although indicators reflecting maternal health didn't show significant positive improvement during the last twenty years yet there has been a gradual but slow progress in the reduction of MMR.

One of the major reasons for this slow progress is minimal allocation of funds for health sector. According to WHO, Pakistan was required to spend US$ 18 per capita on health whereas the total government expenditure on health was only US$ 4 per capita. Furthermore, in Pakistan the expenditure on mother and child health was 0.25% of the total government expenditure on health which was increased to only 0.55% in 2005-2006. Although, it was doubled but is still insufficient to reduce the burden of diseases due to maternal health issues[13].

Evidence suggests that complications during antenatal and post natal period are the main causes of maternal deaths. The most common direct cause being post partum haemorrhage accounting for 27% of all deaths followed by puerperal sepsis and eclampsia responsible for 14% and 10% respectively. Direct causes contribute to over 80% of the maternal deaths whereas 13% are due to indirect causes like hepatitis, anaemia and cancer etc [2].

Major determinants affecting MMR

The slow decline in MMR and minimal improvement in maternal mortality indicators can be attributed to following determinants:

Human resource

Although, a range of institutions are intensively training the health care providers, nevertheless there is a significant discrepancy between the availability of qualified health personnel and their active enrolment in services. The number of female doctors who are trained to provide antenatal care are insufficient [5]. The registered doctors were just over 56,000 in 1991 which increased to 118,166 in 2005. According to International recommendations there should be 1 doctor serving 1000 population but in Pakistan the ratio is 1:1,310 persons. Similarly the ratio of doctor to nurse is 3:1 while the recommendation is 1:3[13]. This shortage of human resource is one of the reasons for slow progress towards improving maternal health.

Inaccessibility to health care services

Inaccessibility to health care services is one of the major issues in Pakistan responsible for maternal deaths. The main reason being poor financial status that resulted in delayed reaching [14].

Poor Nutrition

Most of Pakistan female population reproductive age is suffering from malnutrition especially iron deficiency which is responsible for direct as well as indirect causes of MMR.

Health care services

Inadequate availability of emergency services, ambulances, long distances from the hospital and lack of proper referral system are the main reasons for slow reduction in maternal deaths.

Trained birth attendants

Trained birth attendants (TBAs) are an essential part of Safe Motherhood Initiative. TBAs are socially and culturally acceptable and accessible at the local level, therefore, if they are properly trained, the maternal deaths can be significantly reduced[15, 16].

Education

Pakistan is one of the countries with low female literacy rate. According to a report, women of reproductive age account for around 23% of total population out of which 75% are totally un-educated. 10.5% completed primary education and only 6% have secondary level education [2]. Evidence shows that the level of maternal education is linked to the utilization of antenatal care services and a better understanding of obstetric complications[17].

High fertility rate

Pakistan is one of the most populous countries in the world with a total population of 176952 and it is estimated that if it is not controlled then it will reach to up to 285 million in 2050[18].

Decrease fertility rate has a dramatic effect on reduction of MMR but unfortunately Pakistan's fertility rate has only declined from 6.1 to 4 between 1996 and 2008 (WHO database).

Utilization of contraceptive services

The risk as well as prevention of unplanned pregnancies can be avoided by using contraceptive methods[19]. According to national surveys, in Pakistan the trend of utilization of contraceptive methods has shown to improve over the last twenty years from 9% to 22%. However, there is still a need to emphasize contraceptive utilisation especially by rural population and women in extremes of reproductive age.

Gender inequity and female empowerment

Pakistan is one of the leading five countries worldwide which has high gender inequity leading to poor impact on health status of women. Cultures, traditions and other community barriers like female immobility has a major opposing role in female empowerment[2].

Healthcare programs

Providing a proper direction to government and non-government funded programs and integrating them, can have a major impact in reducing MMR in Pakistan[5].

CONCLUSION

This analysis has shown that maternal mortality ratio in Pakistan has gradually declined over the past twenty years. Although Pakistan is on the track to achieve 75% reduction in MMR by the year 2015 yet there has been a slow progress in antenatal care coverage, deliveries performed by skilled birth attendants, trend of deliveries conducted at health facilities and utilization of caesarean section services. Moreover, data has demonstrated a huge rural and urban difference in the indicators of maternal health. This slow progress can be attributed to inaccessibility to health care facilities, malnutrition, gender inequality, high fertility rates coupled with unmet needs for contraception. Reduction in the maternal deaths can be accelerated by introducing strong health system reforms, integration of community based interventions and improving the number of trained and qualified human resource in the health sector.

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