

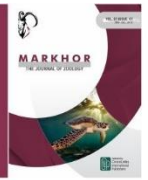


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Review Article

Magnitude Of Sudden Infants Deaths, Maternal Mortality And Still Births In Pakistan

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ABSTRACT

SIDS, SIUD, stillbirths and maternal mortality is an alarming condition in low income countries like Pakistan as Pakistan is a country with highest morbidity in such cases all over the world. Although research is ongoing across the globe to reduce the burden of such devastating situation but it continues to rise in Pakistan due to some known and unknown reasons. It is recommended that the pathophysiological basis of the SIDS should be investigated by continued research. To decrease the magnitude of SIDS, SIUD, stillbirths and maternal mortality in Pakistan numerous precautionary measures are required to be taken by NGOs, Government and policy makers. Trained healthcare professionals, midwives, traditional birth attendants should be sent to rural areas to help and increase awareness. A national center should be made on urgent basis to monitor and register such cases, provide health care facilities and guidance, make laws of compulsory investigation and autopsy of sudden death of fetus or infants and implement and enforce these laws. A databank should be made with preserved tissues of such victims for further diagnosis and research. Preventable stillbirths must be avoided by taking necessary measures.

INTRODUCTION

The unexpected death of a fetus or newborn is one of the maximum devastating occasions which could manifest to parents and the pain persists for several years later in life. By 2013, the annual rate of stillbirths was 2.7 million and 2.8 million for Sudden Infant death syndrome (SIDS) worldwide (Yoshida, Martines et al. 2016) and 2.6 million stillbirths by 2015 (de Bernis, Kinney et al. 2016). Cases of stillbirths (approx. 98%) have been reported in the countries with low income (Goldenberg, Saleem et al. 2016). Among the reported global rates of stillbirths, 55% are occurring only in rural areas of Pakistan. It is a matter of great concern that Pakistan is a country with highest stillbirth burden in the world (Mustufa, Kulsoom et al. 2016) and its ranking is third in this issue. Although a lot of efforts were done worldwide to improve maternal and neonatal health, but these mortality rates in Pakistan remained unchanged (Pasha, Saleem et al. 2015). Despite of these alarming facts, this area remained neglected in Pakistan (Hamid, Malik et al. 2014).

In a recent study involving pregnant women from six low-income countries (Kenya, Zambia, India, Pakistan, Guatemala and Argentina) during a period of 2010-2013, maximum stillbirths (56.5/1000 births) were observed in Pakistan as compared to overall rate of 28.9/1000 births. Although stagnant in other countries, there was rising trend of stillbirths in Pakistan (McClure, Saleem et al. 2015). Global Network's Maternal Newborn Health Registry (MNHR) reported still birth rate (56.5 vs 22.9/1000 births), SIDS (50 vs 20.7/1000 live births) and perinatal mortality (95.2 vs 39/1000 births) to be 2 fold on rise when compared to India, Zambia, Kenya, Guatemala and Argentina (Pasha, Saleem et al. 2015).

Terms stillbirth, sudden fetal death, abortion and sudden infant death remains unclear to most of the health professional all over the world. Stillbirth may be defined as death of a fetus after 20th week of gestation, having birth weight of 350-1000g (Nguyen and Wilcox 2005) or newborn at the time of delivery or just before delivery at full term with or without a known



reason (Robinson 2014). Frequency of stillbirths is more in poor families and unfortunately it is not considered as a loss comparable to a neonatal death (Hamid, Malik et al. 2014).

So far, SIDS and sudden intrauterine unexplained/unexpected death syndrome (SIUDS) are considered as diagnosis of exclusion. Despite of recent advancements in medical and technology and a lot of efforts, SIUDS has a 6-8 times higher incidence as compared to SIDS. Based on these facts, a new definition of SIDS-SIUDS has been proposed recently by Ottaviani G, "The sudden death of the fetus in less than the year after 25th gestational week is an unexpected event in the history with no explanation even after extensive investigation including examining the death scene, performing a general autopsy and even examining the fetal adnexa" (Ottaviani 2016).

SIDS is described as loss of life of a healthy newborn before the first birthday due to an unknown cause that remains unclear after complete examination and entire autopsy. Diagnostic investigations present Mortem research in the effects of the sudden infant dying syndrome and shocking fetal loss of life, established an agreement. The law indicates that all infants rapidly expired in the first year of life, suspected of SIDS, and all fetuses died subsequently in the twenty fifth week of gestation lacking no any perceptible cause, need to go through an anatomopathological exam. SIDS is widely thought to include immature cardiorespiratory control in response to sleep arousal. Aid for this speculation comes from several physiological studies displaying that the essential chance elements for SIDS (inclined napping, maternal smoking, prematurity, head, masking) have vast consequences on blood strain and heart fee and their manipulate and impair arousal from sleep. Infants who died from SIDS displayed deficits in areas of the brainstem involved in cardiorespiratory control and alertness, particularly within the serotonergic system (Lavezzi, Corna et al. 2010; Lavezzi, Mehboob et al. 2011). Persistent research into the pathophysiology (Lavezzi, Corna et al. 2010) and genetics of SIDS (Casale, Oneda et al. 2010) must thus be encouraged in order to include large sample numbers of each affected and alter newborns from the best groups at risk. Moreover, systematic investigations of stillbirths and unexpected unexplained deaths in the ones over 1 year of age are similarly crucial and might offer extra perception into the pathogenesis of SIDS.

Risk Factors

In high income countries, stillbirths occur in uterus due to some unknown cause but in low income countries, it occurs mostly at full term or during the delivery. Maternal causes of still births may include trauma, gestational diabetes, infection, hypertension, hemorrhage, preeclampsia and preterm labor etc. and fetal origin may involve cord prolapsed, birth defects, fetal growth restriction etc. (Goldenberg, Saleem et al. 2016). Modifiable risk factors include smoking (active or passive), obesity, low age of mother, depression (Ali, Azam et al. 2012), healthcare facilities, low education level and untrained birth attendants (McClure, Saleem et al. 2015) while non modifiable risk factors may include primiparity (Mustufa, Kulsoom et al. 2016) and genetic predisposition. Obesity may increase the chances of cesarean section, miscarriages, genetic disorders, SIDS and stillbirth (Aamir 2016). Reports reveal that out of 2/3rd of total childbirth cases being practiced at home, 62 % are carried out by untrained attendants in Pakistan (Avachat, Phalke et al. 2015). Physical or emotional violence by intimate partner during pregnancy was found to be associated with unintended pregnancy, miscarriages, abortions and stillbirths (Zakar, Nasrullah et al. 2016). Anxiety and depression of mother during pregnancy is another factor involved in increased incidence of such phenomenon's in Pakistan women are not given opportunities to relax themselves by indulging in healthy activities, sometimes domestic violence, stress to take care of everyone in case of joint family set up (Ali, Azam et al. 2012). It was observed in a study on surveillance of stillbirths in Pakistani population, that most of the stillbirths were non-macerated, full term and had no birth anomalies, indicating preventable cases that could have been avoided if provided proper antenatal and obstetric care (Jehan, McClure et al. 2007). This is also a modifiable risk factor.

Exposure to organochlorine pesticides throughout life time is another important etiological factor for such adverse pregnancy outcomes in agricultural countries like Pakistan where banned pesticides like DDT are still in use. In a study conducted in 2014 on brain and liver tissues of Italian victims of SIDS and SIUDS showed increased quantities of endocrine disrupting compounds. This proves the bio-persistence of pesticides and indicates that placental barrier is only effective against low doses of water-soluble substances. (Cappiello, Famigliani et al. 2014). Such studies should also be performed in Pakistan as there is more use of such compounds here and rate of stillbirths is also highest.

When compared to households that used clean fuels (electricity, liquefied petroleum gas (LPG), natural gas, and biogas) for cooking, families who used polluting fuels (kerosene, charcoal, coal, wood, straw, agricultural waste, and dung) had an elevated risk of perinatal death. (Patel, Meleth et al. 2015). Consanguineous marriages are another main cause for the increased morbidity and mortality due to such cases in Pakistan. It leads to genetic predisposition and make such fetuses and infant more vulnerable to any environmental stressor leading to death.

Risk of stillbirth and SIDS among neonates born to Pakistani born mothers, Pakistani decent but Norwegian born mothers and in Norwegian mothers of Norwegian descent was assessed in a study for Medical Birth Registry of Norway during a period of 1995-2010. The risk of stillbirth and SIDS was highest in neonates born to Pakistani born mothers (7.4/1000 births; 6.9/1000) as compared to Pakistani mothers born in Norway (5/1000 births; 5.6/1000) and (3.5/1000 births; 2.9/1000) in mothers of Norwegian decent (Sorbye, Stoltenberg et al. 2014). Although the mothers of Pakistani origin born in Norway had the same facilities of health as provided to mothers of Norwegian descent, but the risk is more in Pakistani women either they are born in Pakistan or Norway. This fact point towards the involvement of genetic factors associated with Asian ethnicity and need to be explored.

Maternal and neonatal Morbidity in Pakistan

In one study conducted in United Kingdom in 1985, SIDS was highest in Pakistani families (6.4/1000 live births) when compared to families of other ethnic backgrounds such as India (3.9/1000 live births) and Bangladesh (2.8/1000 live births) among others. All the study groups showed a decline in the incidence of SIDS from 1975-1985 except for Pakistan (Balarajan, Soni Raleigh et al. 1989). As reported in a study of Maternal Newborn Health Registry (MNHR) of the Global Network, maternal mortality was observed to be 3 folds higher (3.13/1000 deliveries) in Pakistan as compared to other 5 countries (India, Zambia, Kenya, Guatemala and Argentina) where this rate was 1.6/1000 deliveries on average during 2010-2013. These rates of maternal mortality had an increasing trends only in Pakistan, while SIDS and SIUDS remained the same (Pasha, Saleem et al. 2015).

Another study from Karachi, Pakistan reported that mothers with poor pregnancy outcomes had previous history of exposure to smoking and adverse birth outcomes (Rozi, Butt et al. 2016). In another study, prevalence of stillbirths was studied in a tertiary care hospital in Karachi Pakistan from 2012-2013, it was found that out of 7708 deliveries, 1.77% were stillbirths and 12% of mothers were less than 20 years and 1.08% mothers were primiparous, 55% happened between 33-37 weeks, while 20% occurred between 28-32 weeks. The majority of stillbirths (80%) had low birth weights. (Mustufa, Kulsoom et al. 2016).

According to the findings of a research done at a teaching hospital in Karachi, unsafe abortion is the leading cause of maternal fatalities due to facilities supplied by untrained health care providers in unsanitary settings (Marufu, Ahankari et al. 2015). Another research from Pakistan's KPK area found that the leading causes of maternal death were haemorrhage, sepsis, eclampsia, and hepatic encephalopathy. Traditional birth attendants visited 40% of the cases, woman health visitors attended 33%, no treatment was provided in 17% of the cases, and doctors attended 10% of the cases (Begum and Aziz-Nisa 2003). The key causal variables in a ten-year research done at Nishtar Hospital in Multan from January 1995 to December 2004 were haemorrhage, eclampsia, sepsis, anaemia, and abortion. The study also indicated that an increase in maternal age is associated with an increase in maternal fatalities. (Lamont, Scott et al. 2015). The majority of the studies indicated that bleeding was the top cause of mortality, with sepsis or eclampsia coming in second. Anemia and hepatitis were the leading causes of mortality from indirect causes (Jafarey 2002).

Maternal mortality is regarded as a very terrible occurrence, and it can be avoided if the mother receives enough medical care and facilities. It is regarded as an indication of a country's medical care quality. (Wilmoth, Mizoguchi et al. 2012). Around 830 women dies daily in the world because of pregnancy or childbirth related complications. Most of these deaths occur in under developed country as compared to developed country which is 19% higher in developing countries (Organization 2015; Alkema, Chou et al. 2016). WHO defines a maternal death as:

"Pregnancy-related death is defined as "the death of a woman during her pregnancy or within 42 days following the termination of her pregnancy, regardless of the cause of death" (Organization 2004). The Maternal Mortality Rate (MMR) is calculated by dividing the number of maternal deaths by the number of live births within a certain time period (Wilmoth, Mizoguchi et al. 2012). The MMR of a nation reveals its development, health, and medical condition (Jafarey 2002). Maternal mortality is split into direct and indirect fatalities: direct deaths are caused by birth and complications within 42 days of postpartum, while indirect deaths are caused by any disease that is influenced or exacerbated by pregnancy's physiological effects. Maternal mortality does not include accidental fatalities in which pregnancy had no part. (Jafarey 2002; Wilmoth, Mizoguchi et al. 2012; Kassebaum, Bertozzi-Villa et al. 2014).

Pakistan has a very low maternal mortality rate, and the country is known for having a high maternal mortality rate. Every year, it is estimated that roughly 30,000 women die as a result of pregnancy-related problems (Jafarey 1991) Measuring maternal death rates is especially difficult due to a poor record-keeping and maintenance system, as well as a lack of certification of the cause of causation (Jafarey and Rabbani 2000). MMR decreased by 3.5 percent between 1990 and 2015, from 431 fatalities per 100,000 live births in 1990 to 178 deaths in 2015. 89 percent of births take place at home, accounting

for 80 percent of maternal mortality. Traditional birth attendants deliver 80 percent of the time, and just one out of every twenty expectant women visits a hospital or dispensary in an emergency (Gardosi, Madurasinghe et al. 2013).

The national MMR was 276 in 2006-07, according to the Pakistan Demographic and Health Survey (PDHS). There are also variances in MMR amongst provinces, with Baluchistan having an MMR of 785, Sindh having an MMR of 314, Khyber Pakhtunkhwa having an MMR of 275, and Punjab having an MMR of 227. Aside from regional variances, rural MMR (319) is twice that of urban MMR (175) (Jafarey and Rabbani 2000; Altpeter, Springer et al. 2016). According to the PDHS data for 2012-13, the perinatal death rate was 75/1000 pregnancies. Pakistan's progress toward achieving the MDGs has been severely hampered by a lack of funding, infrastructure and a failure to provide proper health care to pregnant women (Altpeter, Springer et al. 2016).

Various research has been undertaken in regions and hospitals to determine the primary causes of maternal mortality and to avoid it. In 2005, Jokhio et al. conducted a cluster randomised controlled trial in seven (talukas) of a rural district Larkana, Sindh, Pakistan by training traditional birth attendants in three talukas known as the intervention group and traditional birth attendants in the remaining four talukas known as the control group. For births, the trained attendants were provided sterile delivery kits. When compared to the control group, the intervention group showed a 30% reduction. This method can be used to enhance maternal health in low-income nations (Gardosi, Madurasinghe et al. 2013).

Ali et al. devised research in Punjab and Khyber Pakhtunkhwa to collect information regarding health care and emergency obstetric care facilities and utilising raw indicators (KPK). It was discovered that just 16 health care services in Punjab and 6 in the NWFP provide this essential service. His research revealed that basic obstetric facilities in Pakistan are deplorable, and it is critical to improve access and improve the quality of these treatments. Another critical factor is transportation, since most of the facilities in the research lack a functioning ambulance that can transfer patients instantly to a neighbouring hospital or health care facility. Only 5.7 percent of births take place in government health care facilities that offer emergency obstetric treatment. This demonstrates that women in need of basic therapy are unable to access government facilities and must instead seek care from a private hospital or go untreated (Gardosi, Madurasinghe et al. 2013). Midhat et al. studied the causes of maternal mortality in 16 rural areas of Pakistan's Balochistan and Khyber Pakhtunkhwa (KPK) provinces. The study revealed that women under the age of 19 or beyond the age of 39, as well as those giving birth for the first time and those with a history of foetal loss, were at a significant risk of maternal death. Maternal mortality has been linked to essential obstetric care (EOC). The findings revealed that the staffing of peripheral health facilities, as well as the function of health care facilities, are related to maternal mortality and should be addressed (Gardosi, Madurasinghe et al. 2013).

Inadequate training of midwives (Shah, Van den Bergh et al. 2016). and traditional birth attendants is a modifiable factor in reducing the maternal and child mortality and risk of stillbirths and fetal deaths (Shaikh, Khan et al. 2014). In a Pakistani retrospective study, women who were given labor inducing medications by traditional birth attendants and lady health workers and were diagnosed with prolonged labor were at risk for uterine rupture and asphyxia, while those who had hemorrhage at the time of delivery were at risk for stillbirth (Shah, Van den Bergh et al. 2016).

There exists a program of trained lady health workers (LHWs) in Pakistan but it's effectiveness to achieve goals of reduction in maternal and neonatal mortality is not studied. This program should be made more effective by providing them better training and their proper monitoring as they can reach to grass root levels and reach affected families to educate and help them in the hour of need (Bhutta, Soofi et al. 2011).

Millennium Development Goals and Maternal mortality

Since the 1980s, all organizations have concentrated on minimizing maternal fatalities by launching a variety of initiatives (Kassebaum, Bertozzi-Villa et al. 2014). In September 2000, the United Nations (UN) established eight Millennium Development Goals (MDGs), one of which was to reduce maternal mortality. All of the goals must be met by the member nations by the end of 2015. MDG asks for a 75% decrease in maternal mortality by the end of 2015, and all nations and international organizations have been required to track progress toward the goal's accomplishment (from 1990 to 2015). (Alkema, Chou et al. 2016). It indicates that the aim would be met by a 5.5 percent decrease in maternal mortality each year over a 25-year timeframe (Organization 2015).

The findings revealed that, despite improvements in health-care services, the targeted objectives were not met by the end of 2015. In 1990, the MMR was 385 per 100,000 live births, but by 2015, it had reduced to 216 per 100,000 live births. Following the completion of the MDGs in 2015, the Sustainable Development Goals (SDGs) were established, with the goal of reducing MMR to 70 maternal mortalities per 100,000 live births by the end of 2030. (Organization 2015; Alkema, Chou et al. 2016). Between 1990 and 2015, global maternal mortality fell by 44 percent. Although it did not fulfil the requisite aim set by MDG5, it still has a long way to go to meet the target set by SDG.

Economic Burden

As no statistics are available in Pakistan regarding SIDS, SIUDS at national level as all of the cases do not get register and there is no common body to monitor it, so we cant make an estimate of the exact economic burden. Most of these affected families are poor with low socio-economic background and such a situation brings not only psychological and health trauma but also a huge financial stress. It is obvious, that a stillbirth required more expenses as compared to a live birth. Only the affected families have to bear all the costs and no compensation is provided from government. This situation is very harmful for such parents and can affect their future pregnancies and also health plus care of their other surviving children (Heazell, Siassakos et al. 2016).

Prevention of maternal mortalityThe maternal mortality rate is difficult to calculate. It is critical to understand the reasons of maternal death and how it might be avoided. According to PDHS data, maternal mortality accounted for 20% of fatalities among females aged 15 to 49. (Jafarey and Rabbani 2000). Most maternal fatalities can be avoided if professional and trained workers provide care. All of the above-mentioned reasons may be avoided by providing effective diagnosis, care, and awareness of delivery issues (Begum and Aziz-un-Nisa 2003). Labour issues should be handled by trained health providers. An injection of oxytocin can halt severe bleeding. Childbirth should also take place in a clean setting. Pre-eclampsia can be avoided by using medications such as magnesium sulphate (Altpeter, Springer et al. 2016). The main difficulty is to deliver quality Emergency Obstetric Care (EmOC) around the clock. Staff training may boost employee confidence and skills. It is critical to take steps to enhance the use of EmOC for women experiencing obstetric problems. It is critical to build and improve basic and comprehensive EmOC services, as well as redesign all current basic EmOC facilities, because many obstetric problems may be treated at this level (Gardosi, Madurasinghe et al. 2013).

Future prospects

Political collaboration and finance at the international and national levels might promote education, socioeconomic circumstances, gender equality, and the environment. Following the end of the MDG era, a new agenda of 17 SDGs was unveiled in 2015. (Organization 2015). According to the SDGs, the goal is to reduce maternal fatalities to 70 deaths per 1,000 live births by 2030, with no nation exceeding 140 deaths per 1,000 live births (Organization 2015; Alkema, Chou et al. 2016). Banki-Moon, Secretary-General of the United Nations (UN), has launched a worldwide plan for women's, children's, and adolescent health from 2016 to 2030. (WHO 2007). This Strategy will serve as a road map, attempting to eliminate all probable causes of maternal death (Alkema, Chou et al. 2016).

Problem areas need to be addressed

- Pakistan's current prenatal and neonatal care plans are insufficient.
- Obstetric and neonatal care in Pakistan is of poor quality.
- Although delivery care in Pakistan appears to be comparable to that in Africa, it is less successful in saving the lives of mothers and their babies (Pasha, Saleem et al. 2015).
- Non-macerated stillbirths are considered as preventable and approximately 2/3 of all stillbirths as suggested by a study are such cases which can be avoided by proper care (McClure, Saleem et al. 2015).
- Poor health, nutrition and education in females
- No monitoring body at government level to address these issue
- No proper diagnostic and research center at national level to gather all statistics, make a data bank of information (medical and personal) and tissues of victims.
- No law for compulsory postmortem investigation for such cases of sudden demise without any known reason.

Recommendations:

- Stillbirths should be recognized as a serious issue along with maternal and neonatal mortality and highlighted at global level to end all preventable stillbirths. It must be included in worldwide goals to reduce such mortalities (de Bernis, Kinney et al. 2016).
- Tighter regulatory control of labour-inducing drugs is required.
- Health care workers and traditional birth attendants should be given incentives and training (Shah 2016). Lady health workers (LHWs) programme already present should be made more effective. Traditional birth attendants

should be provided with financial benefits in recognition of referrals to community midwives (Shaikh, Khan et al. 2014).

- Continued efforts to improve the availability and quality of Emergency Obstetric and Newborn Care are required, including focused skill-based training and the supply of necessary medications and equipment. (Utz, Zafar et al. 2015).
- Education of girl must be improved. They should be given equal rights of health, education and nutrition. They must be treated equal traditionally and culturally.
- Use of contraceptives among younger women less than 20 years should be encouraged.
- Transportation for pregnant women should be enhanced, as proposed by the UN Millennium Development Goal 5 (Budhwani, Hearld et al. 2015).
- It is necessary to understand the perspectives of communities and healthcare providers in order to establish preventative and management methods, as well as to give assistance for coping with the consequences of stillbirths.
- As it is obvious from many studies that obesity of women before and during pregnancy is also a cause of poor pregnancy outcomes, it is a modifiable risk factor also which can be avoided. But the problem is lack of healthy activities as it is not a common practice for females in Pakistan to carry out exercise, walk, jogging etc. there are no proper gyms, swimming pools and sports for females. These activities are not considered good for females due to social and cultural practices. Special parks, pools should be made by government for females only, they should be encouraged in schools and colleges also to participate in sports and maintain their fitness.
- Future government policy on stillbirths must include the impact of culture on community attitudes, beliefs, and behaviors, as well as the actions of healthcare practitioners. (Hamid, Malik et al. 2014).
- The rate of caesarean births in Pakistan is dangerously high. The majority of patients are referred to private institutions where caesarean births are performed only for profit. The government should take tough efforts to reverse this downward trend. This unethical procedure is hazardous not only to the mother's health, but also to future pregnancies and their results.
- In the case of a first pregnancy, both parents should be required to attend awareness workshops, as the majority of observed pregnancies were in primiparous moms.
- Strategies for reducing domestic violence should be developed.
- Pakistan is an agricultural country and a lot of pesticides are being used here which are otherwise banned in rest of the world. Laws should be made and enforced to stop the use of banned pesticides. Secondly, more efforts should be done to do the quantification and estimation of pesticides in the products of conceptions and tissues of victims after death.
- Laws should be devised to make it obligatory for every such case of SIDS and SIUDS to undergo autopsy and determine the cause of death.
- Laws governing intimate partner violence (IPV) during pregnancy should be strictly enforced.
- Steps should be taken to recognize and improve the problem of anxiety and depression as this situation which is never considered a problem.
- A research and diagnostic center should be established for the study of SIDS, SIUDS, stillbirths and maternal mortality in Pakistan as it is need of the hour.
- A national database should be made for the registry of these cases and these families should be properly monitored and helped for the next pregnancies. Surveillance of such cases should be done at national level so that exact magnitude of the dilemma should be known and necessary steps can be taken to improve the situation in Pakistan.
- A very important factor that needs to be addressed is cousin marriages. Rate of cousin marriages is highest in Pakistan if we compare with rest of the world. Despite this fact no screening is ever done before and after marriage and during pregnancy to know the genetic anomalies in the developing fetus.
- Appropriate tests should be conducted to determine at risk pregnancies and prone cases. Genetic counseling and amniocentesis should be made compulsory for couples with consanguineous marriages.
- The government should develop rules and recommendations to improve maternal, child, and prenatal care.
- Premature marriages should be forbidden, and regulations should be strictly enforced.
- The government should provide some financial assistance to low-income families to cover the costs of childbirth, prenatal and postnatal care, and mother care.

- Abortion and fetal death should be considered as a big loss and these cases should be properly registered and mother should be given proper medical and psychological care.

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