



## Maternal health and its affecting factors in Nepal

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### Abstract

Maternal health is still a public health problem in developing countries, especially in low-resource settings rural and poor communities. The main aim of this article is to critically evaluate and explore the situation of maternal health in Nepal based on published or unpublished governmental or nongovernmental organization's scientific reports regarding maternal health. We found that there were several direct or indirect causes and affecting factors of maternal death in Nepal, which are preventable. Women have been facing different consequences during pregnancy and delivery, attributed to lack of proper knowledge or less available and affordable health facilities in rural communities. Therefore, there is needed an essential maternal health knowledge to women and also establish health facilities with a quality health care service on affordable and accessible to prevent maternal death and minimize complications.

**Keywords:** Maternal health; maternal mortality; Nepal

### General information

Maternal health is the health status of women during pregnancy, childbirth, and the postpartum period, which incorporates the health care dimension of family planning, preconception, and prenatal and postnatal care to reduce maternal morbidity and mortality [1]. Correspondingly, maternal death refers to death of a woman while she is pregnant or within 42 days of termination of pregnancy, irrespective of the duration and the site of the pregnancy, from any causes related to or aggravated by the pregnancy or its management but not from accidental or incidental causes according to the World Health Organization [1]. It should not be due to any chronic disease or condition. Mostly maternal death occurs in developing countries rather than developed countries.

Approximately 830 women die per day worldwide of pregnancy-related causes, which can be prevented. Remarkably, 99% of maternal deaths happen in developing countries, mostly in low-resource settings, rural areas, poor communities, etc. The World Health Organization estimated that 303,000 women worldwide will have died by the end of 2015 during and following pregnancy and childbirth. Millennium Development Goal 5 was adopted in 2000 by the international community to improve maternal health and reduce maternal morbidity and mortality. Recently, a report by the World Health Organization [1] revealed that maternal death has dropped by 43% worldwide; however, maternal death is still high in sub-Saharan Africa and South Asia.

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There are two different types of causes of maternal death: direct and indirect. Direct causes of maternal morbidity and death are hemorrhage, infections, high blood pressure, eclampsia, preeclampsia, unsafe abortion, and obstructed labor, whereas previous existing diseases or conditions such as cardiac diseases, renal disease, and hormonal disorders are indirect causes of maternal death [1].

### Maternal mortality ratio in Nepal

Nepal had the highest maternal mortality ratio among South Asian countries in 1990 (850, 539, 415, 281, and 229 per 100,000 live births in 1990, 1996, 2001, 2006, and 2011, respectively [2–4]). It had been estimated that the ratio will be 170 per 100,000 live births by the end of 2015. Nepal received the Millennium Development Award for recognition of its success in reducing maternal mortality in 2010 [5]. However, the ratio is still high in comparison with the ratios in developed countries and other developing countries. Moreover, Dhakal [6] showed that the decline is not evenly spread across the country, maternal health have not improved in poor communities and rural areas.

### Causes of maternal death in Nepal

According to the Nepal Maternal Morbidity and Mortality Study (2008–2009) [7] the leading causes of maternal death in Nepal were hemorrhage, then eclampsia, abortion-related complications, gastroenteritis, and anemia. This study reported that 69% of maternal deaths were due to direct causes and the remaining 31% were due to indirect causes. Almost the same finding was revealed by Bhandari and Dangal [8], who identified postpartum hemorrhage, unsafe abortion, infection, preeclampsia, and long obstructive labor as the major causes of maternal death in Nepal. Postpartum hemorrhage and long obstructive labor were the main causes of maternal death in rural areas, whereas unsafe abortion, infection (particularly hepatitis E), and hypertension with preeclampsia were the main causes of maternal death in urban areas [8]. Septic abortion was the leading cause of maternal death in Kathmandu Valley in the study of Rana et al. [9]. Too young and too old maternal age, high parity, malnutrition, and illness in early midgestation were the underlying causes of maternal death in the countryside in Nepal as found by Christian et al. [10].

### Factors influencing maternal mortality

#### Home delivery

Home delivery is the factor most influencing maternal mortality in Nepal [11]. The Nepal Demographic Health Survey [3, 12] and Sreeramareddy et al. [12] reported that almost 90% of births occurs at home and that a skilled health worker is most important in the community to conduct delivery safely in the home setting, which can help reduce the risk of maternal complications and maternal death. The percentage of home deliveries is still high in Nepal, where 63.1% of deliveries occur at home and only 35.3% of deliveries occur in a health facility [13]. It is most necessary that first-time delivery should be in a health facility or if delivery takes place at home that a skilled health professional should be there or that within 2 hours of delivery the mother visits a health facility or a skilled health professional to reduce the complications of delivery suggested by the World Health Organization [1]. The World Health Organization [1] report on the risk of home delivery has strongly suggested that first-time delivery should be in a hospital otherwise a women will be three times likelier to suffer a complication if she delivers in a home setting.

#### Unsafe abortion

Unsafe abortion is one of the direct causes of maternal death in Nepal. Thapa et al. [14] stated that unsafe, unhygienic, and sometime dangerous practices have been undertaken in rural parts of Nepal and because of the consequences unexpected maternal deaths have been occurring in Nepal [15]. This is due to the lack of proper safe delivery knowledge, lack of awareness about health, and unavailable health services in rural communities [16]. The Family Health Division, Departmental of Health Services, Ministry of Health and Population (MOHP), Nepal, has been providing a safe abortion service to terminate unwanted pregnancies through a safe procedure with effective management at the community level, according to the World Health Organization guidelines [17]. Abortion has been legal in Nepal since 2002, and since then services have been offered in public hospitals or health centers with trained health professionals. However, the impact of the safe abortion service has not been reported extensively to date.



### *Traditional birth attendants*

Traditional birth attendants (TBAs) are also a factor affecting maternal health in Nepal. They are not well trained to conduct delivery safely in the context of a quality health care service. They use traditional methods to conduct the delivery at home, and that practice puts the health of women in danger. However, TBAs have been playing a vital role in the community during antenatal care, delivery, and the postnatal period [16]. Women can benefit easily from them in the community and the cost of their service is also less than the cost of other private or government health workers [18, 19].

TBA can be found everywhere in Nepal [16]. TBAs are a source of maternal care during pregnancy and delivery because of insufficient trained professionals in rural parts of the country. The services are different according to cast and culture among the TBAs. They have been providing traditional and culturally suitable services to women in the community for many years [16]. The Family Health Division has been providing basic delivery skills training to TBAs to reduce the complications experienced by women during pregnancy through the Safe Motherhood and Newborn Health program [17]. In this way, skilled birth attendants (after being trained) have been using a safe delivery technique instead of the traditional method. However, there is still a long way to go to reduce maternal mortality in Nepal because only 36% of pregnant women have been receiving the delivery service from skilled birth attendants during pregnancy [13].

### *Family planning and fertility*

Family planning is one of the factors affecting maternal health in contemporary society in developing countries. Lack of sufficient family planning devices, little knowledge about family planning, and difficulty in getting the devices are the key obstacles to the use of family planning everywhere [16]. Family planning is a way to prevent an unwanted pregnancy. It is also the way to prevent an unsafe abortion and its complications [20]. Therefore, it should be provided free by the state, which should also provide family planning education to all people. The total fertility rate in rural Nepal is 2.8, whereas it is 1.6 in urban Nepal [13]; therefore, more focus should be given to rural Nepal to reduce the fertility rate, which is directly

associated with maternal mortality as reported by Bongaarts and Johansson [21].

### *Health services and affordability*

The lack of health services and the quality of the health care service are the key factors to reduce maternal mortality, as stated by Bolam et al. [22] and Jahn et al. [23]. The patient flow is huge, but health workers are very few. Therefore, patients have no privacy to explain the problems to the health worker in outpatient department (OPD) in the hospital [16]. Health care workers are not well trained or qualified, and due to improper skilled they cannot maintain confidentiality and the privacy of women [24]. Nepal is an underdeveloped country; therefore, people cannot afford the cost of essential health services. In addition, in a study on the use of antenatal care services in Nepal, Sharma [24] stated that the total expenditures for treatment, such as direct checking fee and the cost of transportation, medicines, and other supplies, are the major obstacles to the use of maternal health services [25]. Moreover, low socioeconomic status of women and long distance are obstacles to the use of the existing maternity service according to Wagle et al. [26]. Health facilities with trained health worker along with quality health care services are not available sufficiently in all parts of the country, as revealed by Gehendra et al. [25]. Due to the above consequences, maternal health status is still poor in Nepal, as revealed by many other studies.

### *Communication and transportation*

Women who live in rural communities have to walk a long distance to the health center, health post, or a private clinic to receive the maternal health service. Therefore, they need to go to the health post or hospital by the human porter service in hilly areas in Nepal [27]. That means the distance and availability and the means of transportation are basic and important factors to access health care services. There are few roads and there are not sufficient bridges over rivers in rural parts of Nepal. It is very difficult to travel from one side of the river to the other because of a lack of bridges [28]. This is even more problematic for pregnant women [16]. They may have to walk for more than 1 hour to reach the nearest health center for a checkup because of poor roads



and few public transport facilities. Sometimes it can be impossible, when they have complications. Hence, it is difficult for women of low economic status to take advantage of a good health care service and instead they have been taking services from nonskilled health workers or traditional service providers, who are easily accessible in the community, but this is a real threat to the lives of the mothers and their newborns [4]. Despite this, in recent years the government has been promoting birthing centers with the help and support of some donor agencies and by coordination with local government bodies to achieve Millennium Development Goal 4 and reduce maternal and child mortality and morbidity. It has been rapidly expanding the numbers of primary health centers (PHCs), health posts (HPs), and sub-health posts (SHPs) in the country [17]. However, establishing a new birthing center is a challenging task in the context of infrastructure, essential drugs and medical equipment, and a fully trained health professional team. Therefore, there is need for invention to check whether these requirements are met for the birthing centers.

### *Education and knowledge*

A lack of education and a lack of essential knowledge about maternal health are key factors affecting maternal mortality [1]. Gehendra et al. [29] and Simkhada et al. [16] have also suggested that knowledge and education are key factors affecting maternal health and that these factors also determine the health-care-seeking behavior of women. Different studies have shown that increasing women's education is the best way to encourage antenatal care visits in Nepal [24, 29, 30]. Educated women are more motivated to use health care facilities in comparison with those who are not educated. Education gives women power to use the maternal health care service [30], which can also be helpful to increase their capacity of interacting with other people and personal development, as stated by Gehendra et al. [29]. Education helps to improve the decision-making power and confidence of women and laterally empowers women [24]. However, the literacy rate of women in Nepal was very low (25%) in 1991 [31], although it had increased by 57.9% in 2011 [31]. Because of lack of education, women have not been using health care facilities, which are provided by the government [4, 25].

### **Conclusion**

Maternal mortality is still a public health problem in Nepal, where women have been facing different consequences during pregnancy and delivery due to lack of maternal health knowledge as well as the socioeconomic conditions. Most of the causes are preventable. Therefore, women's level of education needs to be increased and women should be involved in health-related programs in the community, which may in turn help to empower them. Early detection of cases and early starting the treatment can help to prevent death and minimize the complications. Basic health education and a quality health service should be provided to all people to prevent morbidity, mortality, and disabilities of women.

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### **Conflict of interest**

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### Related Information

Hypertension is one of the direct risk factors causing maternal illness and death during pregnancy. For information regarding drugs for pregnant women suffering from hypertension, please read the following article published in *Family Medicine and Community Health*.

- Antihypertensive drugs in pregnancy

<http://www.ingentaconnect.com/content/cscript/fmch/2013/00000001/00000001/art00007>