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**Publication date**

2017

**Document Version**

Final published version

**Published in**

International Journal of Health Sciences and Research

[Link to publication](#)

**Citation for published version (APA):**

Shahi, P., De Kok, B., & Tamang, P. D. (2017). Inequity in the Utilization of Maternal-Health Care Services in South Asia: Nepal, India and Sri Lanka. *International Journal of Health Sciences and Research*, 7(1), 271-281.

[http://www.ijhsr.org/IJHSR\\_Vol.7\\_Issue.1\\_Jan2017/IJHSR\\_Abstract.039.html](http://www.ijhsr.org/IJHSR_Vol.7_Issue.1_Jan2017/IJHSR_Abstract.039.html)

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Review Article

## **Inequity in the Utilization of Maternal-Health Care Services in South Asia: Nepal, India and Sri Lanka**

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Received: 25/10/2016

Revised: 13/12/2016

Accepted: 16/12/2016

### **ABSTRACT**

**Objective:** To review the inequities in utilization of Skilled Birth Attendants (SBA) and institutional delivery services using “Three Delays framework” to categorize and explain socio economic determinants in Nepal, India and Sri Lanka.

**Design:** This is an article review which adopted narrative synthesis (a mixed method approach). Literature search was conducted from a relevant database including: Scopus, ProQuest and PubMed. The search was performed using developed list of search terms to find out published papers from Nepal, India and Sri Lanka. The paper also used data from Nepal Demographic Health Survey (NDHS, 2011), National Family Health Survey, India (NFHS, 2006) and Sri Lanka Demographic Health Survey (DHS, 2007).

**Findings:** From 438 articles, sixteen studies were included, from Nepal, India and Sri Lanka. Findings were organised under three delays themes: (1) deciding to seek health care by women and/or her family, (2) Reaching health care facility and (3) Receiving adequate and appropriate health care at the facility. The evidence from these studies showed wide variation in use of maternal health services exist both between and within respective countries. These differences are affected by education, distance, lack of transportation, cost of transportation and cost of delivery at hospitals.

**Key conclusions:** This study has shown high variations in the use of maternal health care services in South Asian countries. Nepal and India had lower access and higher inequalities in utilization of SBAs at delivery and institutional delivery by socio-economic determinants compared with Sri Lanka.

**Keywords:** Maternal health services, inequities, disparities, skilled birth attendants, institutional delivery.

### **INTRODUCTION**

Improving maternal health was one of the eight Millennium Development Goals (MDGs) adopted by the international community in 2000. MDG 5 was focused on reducing maternal mortality by 75% and achieving universal access to reproductive health care between 1990 and 2015 (UN, 2014). Globally wide efforts have been made to succeed MDG 5 and in some regions much progress has been achieved. However, progress has been uneven and

inequitable. Many women still lack access to maternal and reproductive health care. According to MDG report 2013, about 46 million of the 135 million live births were delivered by women alone or with inadequate care. Globally, studies have identified disparities ranging from nearly universal in Eastern Asia and Central Asia (100 percent and 97 percent respectively) to a low of about 50 per cent in Southern Asia and sub-Saharan Africa.

Inequities in access to maternal health services exist everywhere, both between and within countries (Graham et al. 2004). Though there are wide disparities in maternal health services, this study was focused on the two key maternal health indicators (1) Skilled Birth Attendants (SBA) during delivery and (2) Place of delivery. “Three delays framework” is used to categorize and explain socio economic determinants of inequity in South Asian countries; Nepal, India and Sri Lanka.

### 1. SBAs during delivery

Skilled attendant during delivery is an important component in the reproductive health care services which can reduce the risk of obstructed labor during delivery (Bernis et al. 2003). Although assistance at delivery is associated with place of delivery, this study has treated separate variable because health professional can also attend home deliveries and all health professional at delivery would not be skilled attendants.

### 2. Place of delivery

The place of delivery is an important for reducing deaths arising from complication of pregnancy. Increasing the percentage of births delivered in health facilities is important determinant to show the level of utilization of maternal health services. The expectation is that if complications arise during delivery in a health facility, a skilled attendant can manage the complication or refer the mother early to the next level of care.

## METHODS AND MATERIALS

This study has used second generation approaches: narrative synthesis (A mixed method approach) design using thematic analysis informed by the “three delays framework” with comparative analysis between and within selected South Asian countries, Nepal, India and Sri Lanka

### Conceptual framework

When dealing with inequalities in the utilization of maternal health services, factors relating to it have to be taken into account. The “Three Delays Model” identifies the points at which delays can

occur in the utilization of maternal health services at the community and facility level. The three delays model and the factors affecting them are categorized in following ways:

**The First Delay** (deciding to seek appropriate medical help for an obstetric emergency) may relate to a number of factors, including the lack of knowledge about obstetric danger signs, community perception of poor quality facility care, or the lack of health services availability which increases the opportunity costs and therefore reduces the likelihood of care seeking.

**The Second Delay** (reaching an appropriate obstetric facility) relates to the geographical proximity and access of maternal health services, and includes factors such as the distance and availability of transportation.

**The Third Delay** (receiving adequate care when a facility is reached) is related to factors in the health facility, including the availability of staff, equipment, and resources as well as the quality and (in some cases) the cost of services.

Since the ‘Three Delays’ model offer a valuable framework for analysing the factors affecting in inequities in utilization of maternal health services, this study has used “Three Delays framework”.

### Search strategy and selection process

The literature search was adopted from the criteria of Dixon-Woods et al. 2006, for evaluations as a guide in helping to select the most appropriate papers for the review, in particular those that had:

- Clearly stated aims and objectives of the research.
- Research design clearly specified and appropriate for the aims and objective of the research.
- Researcher displays enough data to support their interpretations and conclusions.
- Method of analysis appropriate and adequately explicated.

## Findings

### Overview of study contexts

A total of 438 records were identified for screening. This study included

16 articles in this review (See fig. 1 for a flow diagram of the search and inclusion process).

**Quality assessment and data extraction**

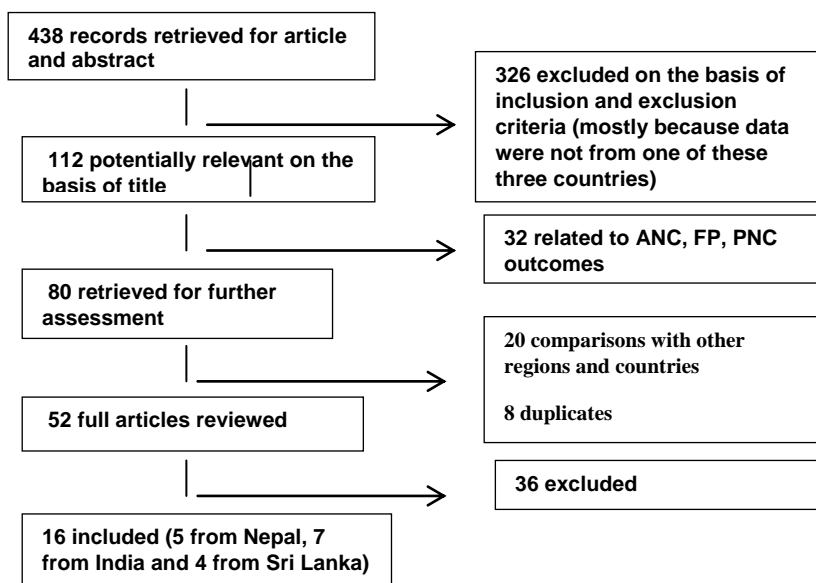
In assessing the quality of the searched studies, the literature search was adopted from the criteria of Dixon-Woods et al. 2006, for evaluations as a guide in helping to select the most appropriate papers for the review, in particular those that had:

- Clearly stated aims and objectives of the research.
- Clearly specified research design and appropriate for the aims and objective of the research.

- Researcher displays enough data to support their interpretations and conclusions.
- Method of analysis appropriate and adequately explicated.

Three delays framework is used to examine the use of SBAs and institutional delivery in relation to different independent variables including literacy rate, economic status and place of residence. Presentation of the results has therefore followed this sequence.

1. Deciding to seek health care by women and/or her family
2. Reaching health care facility
3. Receiving adequate and appropriate health care at the facility.



**Fig 1: Description of studies identifies**

**Disparities in the use of maternal health service due to factors associated with first delay**

First delay is usually caused by constraints on uptake of health care services, including delay in seeking care accounts for the greater proportion of women reaching facilities in poor clinical condition (Pacagnell et al. 2012; Okong et al. 2006; Killewo et al. 2006 and Souza et al. 2009). The factors that affect the decision to seek care are often those discussed as barriers or constraints to the

utilization of services. According to Thaddeus and Maine increasing the availability of services does not always increase the use of services. Economic and education factors were chosen for this study that might account the disparities in the use of maternal health services.

**Economic Status and Disparities**

Many researchers described associations between economic status and the utilization of maternal health services (Dhakal et al. 2011; Pathak et al. 2011; Nawal and Goli 2013; Bhandari et al. 2014;

Sanneving et al 2012). The literature review by Thaddeus and Maine in 1994 from developing countries found that the maternal morbidity and mortality rates are higher among groups of low economic status and utilization of maternal health care services increases as economic status increases. According to NFHS-3 in India, utilization of skilled attendance at birth has increased among general population by 13 percentage points from 36.2% in 1992 to 49.5% in 2006. However, this change in

India has been largely uptake by non-poor mothers, 11 percentage points- from 46.4% to 57.8% during 1992-2006 than poor counterparts, 2 percentage points-from 17.1 to 18.9% during 1992-2006. Similarly, the review of the three rounds of NFHS conducted during 1992/93, 1998/99 and 2005/2006 by Pathak et al. 2010 found the inequalities in utilization of SBA remained large in poor-rich in India. Poverty often restricts the uptake of skilled delivery care in Nepal (Shakya and McMurray 2001).

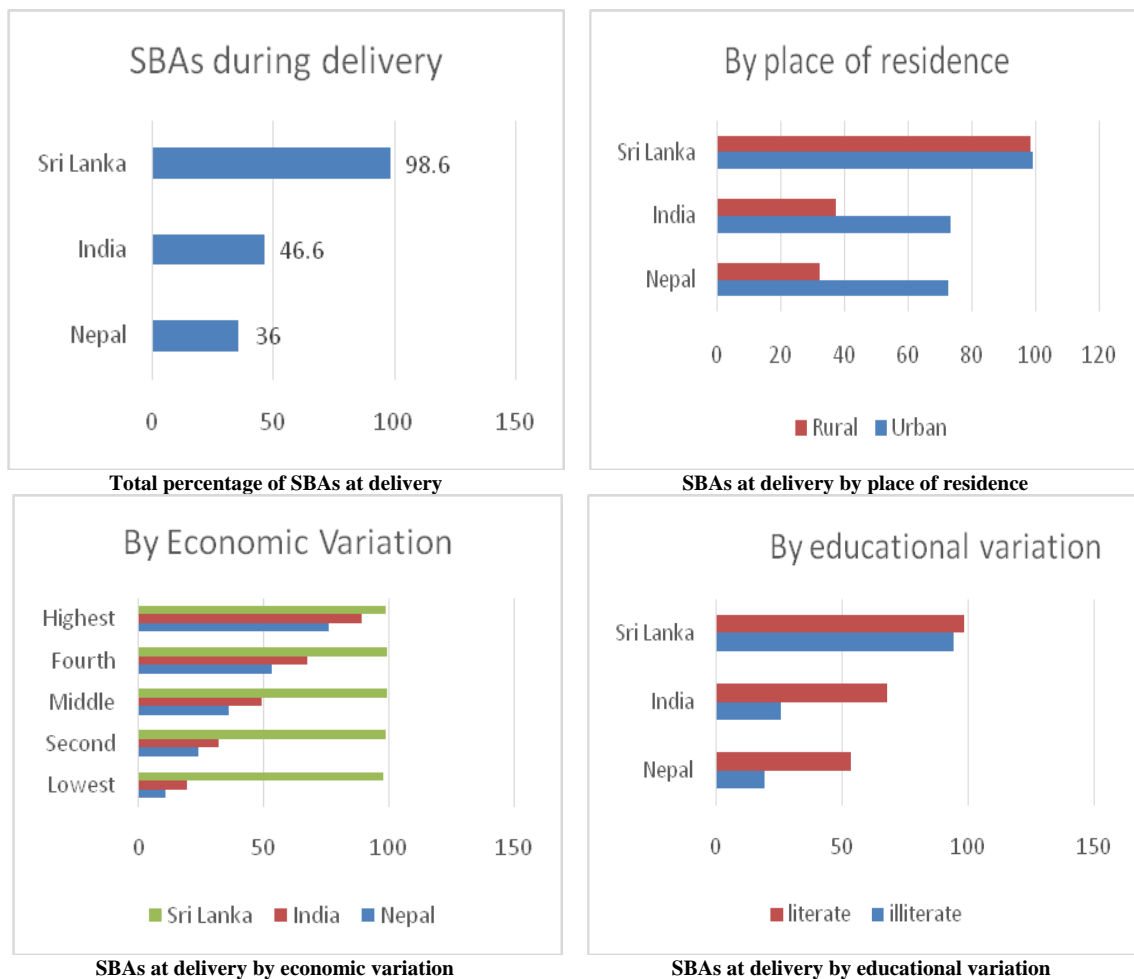


Figure 2: Differences in Deliveries by SBAs

Delivery at health institution found corresponded closely with the use of SBAs. Among three countries, Nepal and India has more than half of the births occurred outside health facilities, and most of these were home deliveries. Descriptive and cross sectional study conducted by Dhakal et al. 2011, in Nepal found skilled delivery care at

birth in Nepal is very poor. Deliveries at home by unskilled birth attendants are still common, even in a rural area relatively close to the capital city of Nepal. It is because the cost of delivery at hospital was significantly higher (NRs 2,100) than the cost of delivery at home (NRs. 82.50).

A case study from Maharashtra India found the cost involved in MH services utilization was also important in the decision regarding the place used for childbirth. The costs associated with use of MH services were reported as a barrier to use in both urban and rural areas. This cost determinant affect less in Sri Lanka because of free health services. SLDHS 2007 revealed skilled providers assisted almost all birth (99%) and 98 percent of births take place at a health facility and only one percent at home or some other place. A free health service has been one of the strongest factors behind this improvement in use of maternal health services in Sri Lanka (Fernande et al. 2003). Other reason; the health service delivery system in Sri Lanka has developed over time that offers a graded system of care, ranging from basic care to highly specialized services (Vidyasagara 2003).

#### **Education Status and Disparities**

In this study, I have used mother's education to measure its impact on utilization of maternal health care services. As education empowers women, they will have greater confidence and capabilities to make decision to use modern health care services for them (Raghu, 1996; Naveentham and Dharmalingam 2002). For analytical purposes, I have operationalized education in two categories: Illiterate (who have never been to school) and literate (who have been to school or primary to higher level study).

Other study reviewed for this study also shows that there is wide differences between utilization of maternal health services with maternal education (Griffiths and Stephenson 2001; Naveentham and Dharmalingam 2002; Dhakal et al. 2011; Sanneving et al. 2012; Hotchkiss, 2001). Maternal education has positive effect on use of SBAs (Nawal and Goli 2013; navaneetham and Dharmalingam, 2002; Cunningham, 2006; Griffiths and Stephenson 2001). A descriptive and cross-sectional study conducted by Dhakal S et al. in 2011 among 150 women in Nepal found

women who had no education were less likely to seek delivery in a health facility. Though, the maternal education status effect on the use of skilled attendant and institutional delivery, it was no high differences in Sri Lanka. SBAs at delivery in Sri Lanka, Illiterate vs. literate were 94.4 vs. 98.5 percent and 92.7 vs. 98.2 for institutional delivery in 2007 (SLDHS 2007).

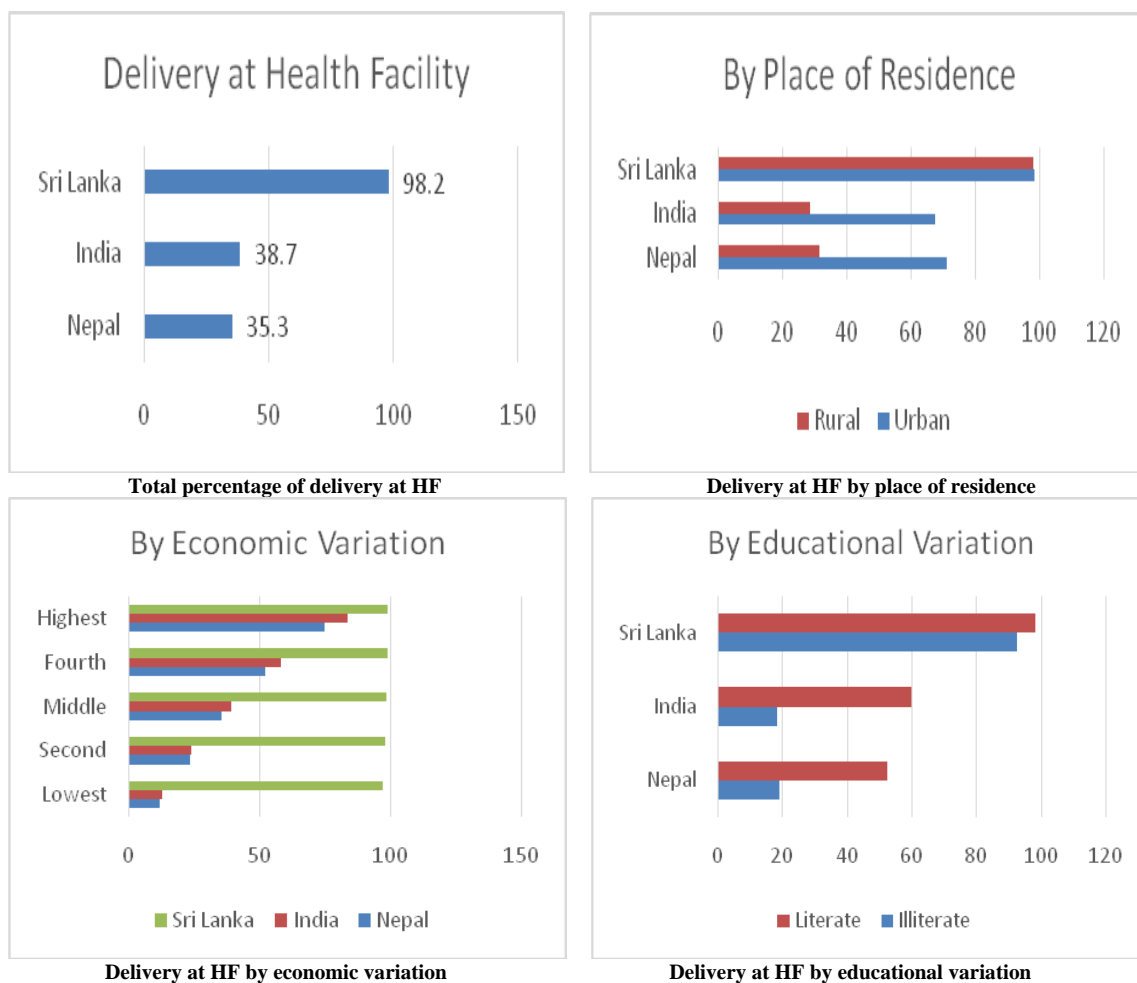
#### **Disparities in the Use of Maternal Health Services due to Factors Associated With Second Delay**

Second Delay dealt with the location of health facilities, the travel distances that result from this distribution and the transportation that is necessary to cover the distance. According to Thaddeus and Maine, 2014 Second delay are very common, particularly in rural areas and the variables included for this delay are place of residence (Urban or Rural), distance and transport to examine whether women living in the rural areas have less likely to use maternal health care services.

Rural-urban disparities in the utilization of SBAs in Nepal and India is very high and there was significant difference in the place of delivery between rural and urban areas (Navaneetham and Dharmalingam 2001; Hotchkiss, 2000; Dhakal et al. 2011). Distance to health services uses dual influences on use, as a disincentive to seeking care in the first place and as an actual obstacle to reaching care after a decision has been made to seek it. A cross-sectional study conducted in mid and far western part of Nepal among 2481 mothers by Choulagai et al. 2013, found that many pregnant women in Nepal do not even attempt to access maternal health services at health institution. Since, walking many kilometres is difficult in labour and impossible if labour starts at night and the transportation means are unavailable. Choulagai et al. 2013 found that the main reasons for women do not seek SBA services and institutional delivery includes distance to a health facility (45%) and inadequate transportation (21%). Study by

Griffiths and Stephenson in India has found that the locations of health facility and transportation problems are barrier to use maternal health services. Also, distance was

highlighted as an influential factor in the decision on the type of place utilized for childbirth in both urban and rural areas.



Source: NDHS, 2011; NFHS-3, 2006 and Sri Lanka DHS, 2007.

Figure 3: Differences in Delivery at Health Facility (HF)

The use of SBA remained significantly lower in Nepal and India than in Sri Lanka. It is because of shortage of SBAs, particularly in most rural areas. Evidence from India and Nepal brings out stark rural-urban disparities in the utilization of SBAs and institutional deliveries. A review article on economic inequalities in maternal health care in India by Pathak et al. 2010 shows the use of SBA among urban mothers was 78% which was 40% among rural mothers. Furthermore, the inequalities in the institutional delivery remained substantially larger among rural mother than among their urban counterparts (Choulagai et al. 2013; Dhakal et al. 2011; Cunningham 2006; Griffiths and Stephenson 2001;

Sennevingl et al. 2013; Desai et al. 2006; Navaneetham and Dharmalingam 2002).

The distance between health facility and place of residence created low use of maternal health services in Nepal and India. However, in Sri Lanka access to maternal health service has been a very positive. According to Vidyasagara (2003) maternal health services are well utilized as government has identified “expanding access to maternal health care services making them more accessible to the poor in rural areas” as priority area.

**Disparities in the Use of Maternal Health Services by Factors Associated With Third Delay**

This delay is result from shortages of staff, essential equipment, supplies, drugs and blood as well as inadequate management (Thaddeus and Maine 1994) or in the other word this delay typically refer to the quality of care received at health facility. In this study, quality of care was reviewed through delivery by SBAs and other than SBAs at health facility.

Two of 16 studies are related to quality of care. It is found that in South Asian countries there are still delivery attended by other than SBAs at health facilities (table 1). According to WHO technical working group in Thaddeus and Maine 1994, these deficiencies represent a failure on the part of the health services to seize the last chance to save a woman.

**Table 1: Delivery at Health Facility by other than SBAs**

Country	Percentage of Delivery at Health Facility by other than SBAs (TBAs, MCHW, VHW, AHW, HA and Friends/Relatives)	Number of births at health facility by other than SBAs
Nepal	3	1,905
India	2.5	21,822
Sri Lanka	1	6,866

Source: Nepal DHS 2011; India NFHS-3 2006 and Sri Lanka 2007

From table 1, it is clear that women who delivered in health facility still had no appropriate maternal health services. A study by Dhakal et al. 2011 among 150 women in Nepal found nine percent of women did not get help from anyone at birth and no single delivery in the home was attended by skilled attendant. In Nepal, additional reason for low use of SBAs at services included poor quality service, unavailability and inaccessibility of services, minimal staff support, lack of medicine and equipment and deficient referral system (Baral et al. 2008).

## DISCUSSION

This study is an attempt at an inequality analysis for utilization of maternal health care services in Nepal, India and Sri Lanka. Overall, the evidences showed that the wide variation in use of maternal health services between these three countries but it is found low difference in use of maternal health services within Sri Lanka compare to Nepal and India; the countries with large socio-economic difference in use of SBAs and institutional delivery. For example, within countries, urban or wealthier women were usually more likely to deliver with the help of SBAs than the rural or poor women. Urban women were more likely to use health facility for delivery than rural women. Between countries almost all women in Sri-Lanka

delivered with the help of SBAs and goes to health facilities for delivery.

This study found that delivery at home without the help of SBA was still a common practice in Nepal and India. The use of skilled attendants at delivery is the key indicator to reflect the improvement of maternal health (Dhakal et al. 2011). The shortage of skilled health persons, especially in rural areas of Nepal and India is a major problem (Dhakal et al. 2011; Barker et al. 2007; Griffiths and Stephenson 2014; Kesterton at al. 2010).

A noteworthy finding in this study is that there was no high difference in the use of SBAs at delivery and delivery at health facility by place of residence (urban vs. rural) and between poor and non-poor in Sri Lanka. This is more likely to be due to organized community-based and institutional health care services-expanded to cover the whole country and provided free of charge (Hathrhotuwa et al. 2012) and health care programs have been well accepted and utilized by the people as the literacy rate is more than 90 percent for both men and women (SLDHS 2007).

On the basis of the findings, the use of SBAs and delivery at health facility has improved overall in the South Asia, but this improvement has been unevenly distributed among different socio-economic status: wealth quintiles, place of residence and educational status. With women belonging



to poor, rural and illiterate falling behind than women belonging to rich, urban and literate. For e.g. the richest households are four to five times more likely to use skilled worker at delivery than poor household in Nepal and India. Poor women were less likely to deliver at health facility than non-poor women. Though there were no significant differences by these determinants in Sri Lanka.

Various studies have showed that greater availability of services alone will not solve the problem of utilization of maternal health care services and economic status is more common crucial determinant (Kesterton et al. 2010; Barker et al. 2007). Socioeconomic factors are undoubtedly associated with the use of maternal health services. Poverty is clearly risk factors, as is the level of education and access to health care. Basic education and health services are widely available and well utilized in Sri Lanka, as evidenced women's access to education and health care services in particular, has been a very positive factor. So, financial barrier should be addressed for those who cannot afford to pay. For e.g. free health services and maternity incentives schemes.

## CONCLUSION

South Asian countries are making progress towards access of maternal health services. However, this study has shown variations in the use of maternal health care services in Nepal, India and Sri Lanka. Evidence shows that wide disparities in access to maternal services exist both between and within countries (Anwar et al. 2008). From the findings, it is clear that inequalities are large across three selected South Asian countries. With regards to delivery at health facility and SBA at delivery, Nepal and India has comparatively lower coverage than Sri Lanka. Sri Lanka have been able to provide maternal health service to almost all mothers over recent years (SLDHS, 2007), Nepal and India has limited maternal health service utilization where 64 and 53 per cent of birth take place

without the help of skilled birth attendant respectively (NDHS, 2011 and INFHS-3, 2006). Reasons for the disparities across countries were distance to health facilities, lack of awareness on maternal health care, lack of transportation, cost and health system. Though, these reasons were weakest in Sri Lanka.

Three delays model provides a clear framework for the study of factors affecting inequity in the use of maternal health care services. From the findings, three delays are main problems in Nepal and India compared to Sri Lanka. The first and second delays: delay in seeking care and reaching care were affected by mother's educational status, availability of health facility, distance to health facility, transport and cost which resulted in disparities in use of maternal health services among and within these three countries.

This study suggests that there is need to focus on the factors contributing to inequalities in maternal health care utilization by policy makers especially in Nepal and India. Findings from Sri Lanka we can say, in order to improve maternal health care services, literacy rate should be increased for women, health services should be provided for free of cost, provision of maternity homes. Education should be free, improved health facilities at the institution and availability of SBAs throughout the country. Hence, policies and programs targeting maternal health interventions need to consider equity with efficiency in utilization of maternal health services and appropriate strategies need to be implemented between and within respective countries to reduce the inequalities in the use of maternal health services.

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How to cite this article: Shahi P, De Kok B, Tamang PD. Inequity in the utilization of maternal-health care services in South Asia: Nepal, India and Sri Lanka. *Int J Health Sci Res*. 2017; 7(1):271-281.

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