

## **Health Assessment Performance and Maternal Mortality in Nepal**

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### **Acronyms**

ANC	Anti Natal Care
CBHI	Community Based Health Insurance
FCHV	Female Community Health Volunteer
GDP	Gross Domestic Product
MDG	Millennium Development Goal
MMR	Maternal Mortality Rate
MOHP	Ministry of Health and Population
NFH	Nepal Family Health
OOP	Out of Pocket
SBA	Skilled Birth Attendance
SDG	Sustainable Development Goal
WB	World bank
WHO	World Health Organization

## **1 Introduction**

### **1.1 Background**

Improving maternal mortality is the fifth Millennium Development Goal (MDG) of the United Nations. The third Sustainable Development Goal (SDG) focuses on the healthy lives of all at all ages. Maternal mortality and healthy lives are interrelated. Maternal mortality obviously contributes to health status of a nation and hence it is relevant for this paper.

### **1.2 Country Context**

Nepal is a mountainous, developing and multi-cultural country with a population 28.17 million, 82% of them live in the rural where female literacy rate for the age 15-24 years is 80% (WB, 2015). Over 60% of mothers still give birth at home in rural (Engel et al., 2013). Health expenditure as a percentage of Gross Domestic Product (GDP) remains at most 6%. Life expectancy is 68 years (census 2011) in Nepal. Maternal Mortality Ratio (MMR) is 197 per 100,000 (WHO, 2014). Out of Pocket (OOP) expenditure as percentage of Total Health Expenditure (THE) is 46 % in 2013 (WHO, 2014).

### **1.3 Major Health Issues**

Maternal mortality, child and infant mortality, accessibility to health service, poor management are major issues of health care services in Nepal (Engel et al., 2013). Very few physicians prefer to work in the rural than urban area. Some acute respiratory infection and some vector borne diseases are also major issues (Kuruville et al., 2014). Major public and private hospitals including university hospitals are centralized in the urban areas (MOHP, 2014) and maternal health care services are very poor and not reachable. The political instability and corruption is considered another factors pushing behind the health system.

### **1.4 Scope of the Study**

Average number of years that a person can expect to live is said to be life expectancy at birth (WHO). Longer life expectancy can only be achieved when people are at good health. Higher GDP is only possible if people are at good healthy who contribute national economy, education, health and so on. Material mortality is defined as the number of maternal deaths due to birth, pregnancy related complications per 100,000 registered live births (WHO). Maternal mortality is also a good indicator of measuring the health status of a country as whole and hence it is related to life expectancy. The better the health care accessibility, strong and sustainable health financing lower maternal mortality but push up life expectancy. Therefore, study of maternal mortality is very important for health assessment in Nepal. Another reason for the study of maternal mortality in Nepal there is close relation in with maternal mortality and the OOP. Higher government financing for the maternal care decreases the OOP as well as maternal mortality. From this the study is relevant for health system policy and decision maker in Nepal.

### **1.5 Health System and Control Knob**

The control knob component of health system consists of: financing, payment, regulation, organization and behavior. Health financing is the system of fund generation, expenditures and flow of funds used to support the health services delivery system (WHO). Sources of financing

can be revenue, tax and insurance etc. Major allocation of financing goes to health workers, buying drugs and other health care services. The higher is health financing, more health workers can be trained to increase accessibility. Innovative financing measures in health workers has reduced maternal mortality much faster in some countries (Mbizvo & Say, 2012). Because of higher financing, Nepal had received the MDG award in 2005 for reducing maternal mortality sharply since 1990 (Kuruvilla et al., 2014). There is significant increase in financing from both government and donor agencies during 2006 and 2011 (Table 5). Substantial amount of the money was allocated for increasing skills of health workers, their capacity building, raising awareness on family health and maternal care through the Female Community Health Volunteers (FCHV) program. The financing increased accessibility to health care services by increasing health workers and their skills. Therefore, financing is closely linked with intermediate indicator (access) of health system and hence very important for maternal mortality.

I want compare the health status of Nepal with its neighboring countries in respect of life expectancy, maternal mortality and Out of Pocket payment (OOP) as percentage of the THE. The reason behind the higher THE can be either higher maternal mortality or lower life expectancy and the government want to improve them. The lower THE can be because of the finance or funding problem even if there is higher maternal mortality and lower life expectancy. I want to find the rationale behind maternal mortality in Nepal.

Life expectancy, maternal mortality and OOP as percentage of the THE as a measure of health outcomes in Nepal are compared with India, Bangladesh and China from 1990 to 2013. Maternal mortality is found the highest in Nepal but in decreasing faster than the other countries. The faster decline in the maternal mortality is found higher financing. There are some similar studies in relation to maternal mortality in the Nepal but non of them are found to have completely interrelated from health outcomes to control knob. This paper studies complete health assessment from control knob through health outcomes and hence a better than any published paper on maternal mortality in Nepal.

## **1.6 Purposes of the Study**

A good health system is to deliver quality services whenever it is required (WHO). Accessibility to services are significant contributing factors in improving maternal mortality in Nepal that reduces maternal mortality from 13 % to 33 % (Carlough & McCall, 2005) (Baral YR et al, 2010). Increase in finance and access decreases the MMR (Kuruvilla et al., 2014) (Shrestha SK et al, 2012). The specific purpose of the study is how financing to the FCHV program helped in increasing accessibility to maternal health care services and contribute to improve maternal mortality in Nepal. This paper is a step forward in capturing role of financing to the FCHV program which contributed most in reducing maternal mortality in Nepal from 1990 to 2013.

## **2 Methodology**

I divided the methodology into three parts. First it assessed the health status in Nepal with its three other neighboring countries. Maternal mortality in Nepal was analyzed then with its accessibility as an intermediate indicator and finally how financing component of the control

knob had helped to increase maternity skills of health workers and the FCHV who played key role increasing access to health care services in rural area of Nepal. The Table 1 below shows the components of health system that I had used in the course of this paper. I had linked maternal mortality with control knob through intermediates indicator access for which I used various data sources as mentioned in the table.

Table 1: Summary of Data for Health System assessment

Variable	Definition (how it is measured)	Source	Years
<b>1. Performance Assessment (PB1)</b>			
<b>Health outcome indicator(s)</b>			
Maternal Mortality	It is number of registered maternal deaths due to birth pregnancy related complications per 100,000 registered live births.	WHO	1990 - 2013
Life Expectancy	Average number of years that a person can expect to live in	WHO	1990 - 2013
<b>Financial Risk Protection</b>			
OOP as % of total health Expenditure (OOP/THE)	Ratio of direct outlay by households for health care to the total expenditure on health (THE) (sum of government and private health expenditure in a given year).	WB	WB 2011
<b>2. Intermediate Indicator assessment (PB2)</b>			
<b>Intermediate indicator Analyzed</b>			
Access	access is defined through availability, accessibility, acceptability and quality (more of a human rights approach)	Lecture Class 4 slide	1990 - 2013
<b>Measure(s) used to assess Intermediate Indicator</b>			
Skilled Birth Attendance under safe delivery program	Delivery attained by health workers who have taken 2 months skilled training on maternal delivery case.	MOHP , Nepal	2001- 2011
<b>Health system solution linked to intermediate indicator</b>			
Humane resources through (FCHV) program	The female volunteers initially undergo two nine-day training sessions, with a five-day refresher course every year on maternal health and health awareness.	MOHP	2001 - 2013
<b>3. Control Knob Analysis (PB3)</b>			
<b>Control knob linked to Intermediate Indicator</b>			

Financing through NFH program	Program designed for maternal and Child health care	MOHP	2006 - 2011
<b>Intervention that addresses control knob</b>			
Nepal Family Health Program.	Program designed for maternal and Child health care	MOHP	2006 - 2011

I chose three neighboring countries so that it was easy to compare the regional relevancy, cultural similarity that affected health care access though implemented program. It helped to run health care program that was already implemented in the neighboring countries. Next it also helped to share and exchange technical skills and knowledge to train health workers. I extracted data from the WHO web site, World Bank Data Observatory, Central Bureau of statistics in Nepal, Ministry of Health and Population (MOHP) in Nepal web page. I visited published and unpublished articles on Pubmed, google scholar and Brandeis’ Library search page for literature review. I also reviewed FCHV, NFH program and safe motherhood program as part of the methodology. For life expectancy, I used data from 1990 to 2013 with five-year time lag and ten years for mortality of the same period. For the financial protection, data from 2000, 2012 and 2013 were used and analyzed them.

I selected three indicators: life expectancy, maternal mortality and OOP expenditure as percentage of the THE and analyzed them in country context. The OOP expenditure as percentage of the THE was assessed in order to find the level of financial protection among the countries. The maternal mortality and life expectancy were analyzed to assess the health status of comparative countries and main causes associated to the existing maternal mortality in Nepal was further studied. The higher is life expectancy at birth, better is considered health status. Low maternal mortality indicates better health care or health system in a country. Therefore, I took it as one of the measure to assess the health status in Nepal and compared to the other three countries. Lower the OOP, better is considered health system in a country. I wanted to compare the health performance of Nepal and comparator countries in terms of OOP as financial risk protection.

Health financing is raising money and mobilizing: where does money come from, who control and where does it go (WHO). Most health financing are revenue based. Some are based on insurance premium, capitation fees and donation. Higher the health financing, more health workers can be hired and trained that increases access to health care, can increase maternal care program. Higher or lower payment to health workers also affects the access. Infrastructure, equipment, logistic and human resources constitute organization that also helps to increases access. Change in consumers’ behavior is necessary to measure the impact of the control knob. Therefore, each components of control knobs are equally important to increase access and better health care system.

In order to assess the impact of control knob framework into access, I analyzed the impact of health worker on access by skilled birth attended rate behind the reason to decline maternal

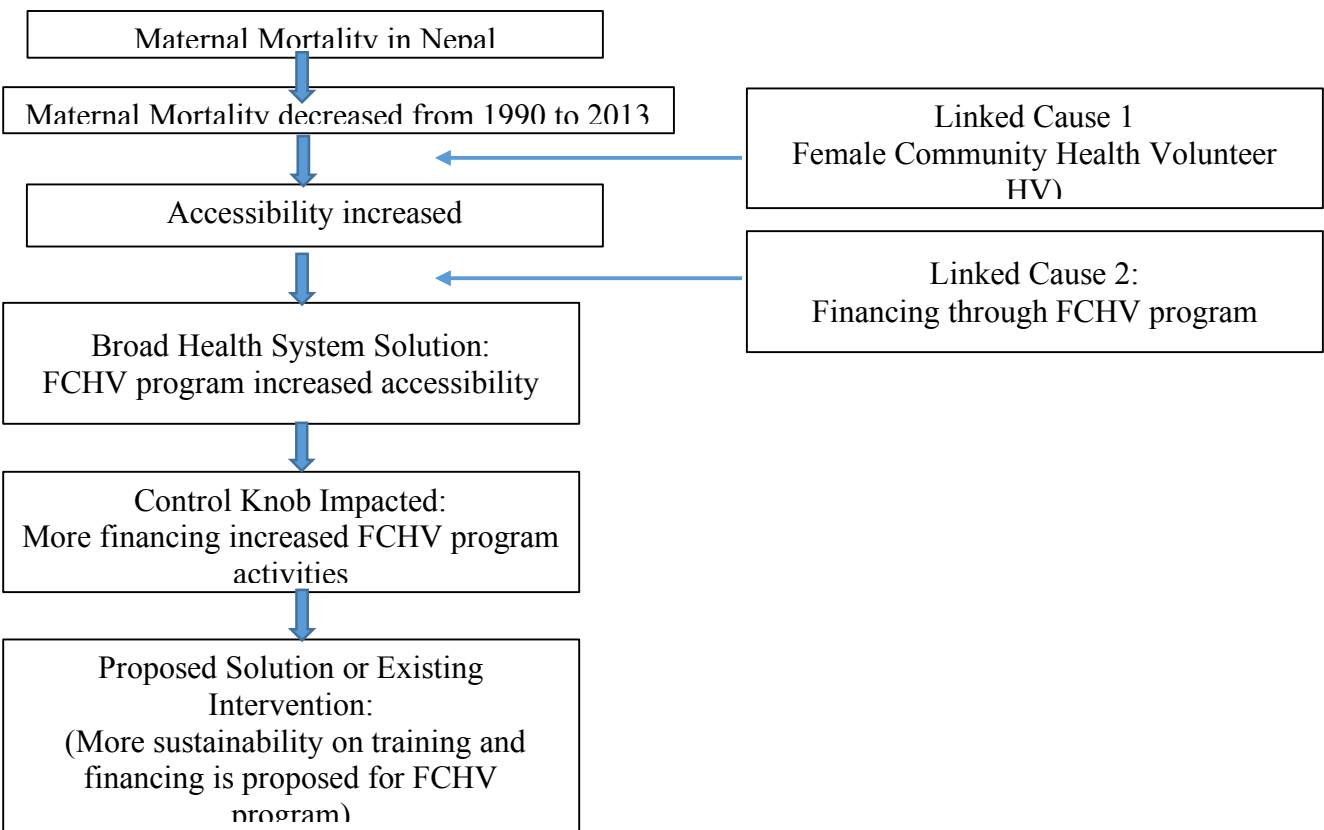
mortality in Nepal. Also, I reviewed: FCHV, NFH and safe motherhood program as part of methodology. The literature has shown that increase in finance and the Skilled Birth Attendance (SBA) can decrease the MMR (Kuruvilla et al., 2014)(Shrestha SK et al, 2012). Increase in the health workers, increases accessibility. Increase in the accessibility increases the SBA. Therefore, this methodology looked for how financing had been spent in health workers in order to increase the access that decrease maternal mortality.

I assessed data on the healthcare financing both from the government and donor agencies from 2006 to 2011 and their allocation on health workers and their services through the NFH and FCHV program. Again within the maternal health I further looked into their focus areas of financing where more money was spent for FCHV program who could help to increase birth attendance, distribute free drugs such as iron tablet, service delivery in the rural area, training to the FCHVs, distributing leaflets on maternity care, raising awareness in order to increase the access to health care services that further helped in decline in maternal mortality. I analyzed the outcomes of the financing on health workers that increased access to health care services resulting in higher the SBA. I also analyzed the impact of financing on maternal mortality and came to a conclusion of the study that intermediate indicator (access) is closely linked to both financing component of control knob and health outcomes.

3 Results

The Figure 1 below shows health system performance assessment in term of maternal mortality in Nepal. There is complete link from health outcomes to control knobs, including intermediate indicator (access) supported by financing through FCHV program and two link causes associated. The program helped to increase skill and capacity building of FCHV by training on maternal health care, awareness on services available and material to be distributed to rural women. The figure also shows role of financing and further continuation and sustainability of the program.

Figure 1: Nepal Health System Performance Analysis



The maternal mortality is considered to be good measures of the population health outcome. The better health system in any country results better health outcomes. I have taken these two indicators to compare health status in Nepal and its 3 neighboring countries. The fifth MDG targets - reduce maternal mortality by three quarters by 2015 (WHO, 2015). Accessibility plays important role in reducing maternal mortality. Utilizing health services remain 2 times higher if there is health post near by (Acharya et al, 2000). It is also researched that physical accessibility has significant role in utilization of health service (Hotchkiss D, 2001). This shows that there is close relation in between accessibility of health care services and maternal mortality as a health outcome indicator.

The literature shows innovative financing measures in health workers has remarkably decreased maternal mortality. Financing through FCHV program as link cause 2 (fig 1) is closely related to financing component of the control knobs. Because of more financing, skills and capacity building of the FCHV were also increased. The more financing helped FCHV program to educate, train and develop their skills and knowledge. This further helped to FCHVs increase health awareness, accessibility and availability of their services in a reliable and consistent way in their community, mainly in the rural areas. Increase in the service level of the FCHV and access to their services was not possible without financing. This delineates that there is close link in financing and role of the FCHV program. Availability of health workers in the community encouraged women to take benefits of the service at any time, even in the remote area. The FCHVs increased awareness on health education and also prevented more women from becoming mother at a high risk age. In this way financing through FCHV program helped to improve maternal mortality in Nepal from 1990 to 2013.

The table 2 below shows maternal mortality and life expectancy in Nepal and its neighboring countries from 1990 to 2013. During the period, Nepal has higher maternal mortality rate than any other countries, except in 2010 where India lead the highest 220 women per 100,000 live birth. Nepal recorded the highest maternal mortality of 790 per 100,000 lives birth in 1990 while china recorded the lowest as 32 lives per 100,000 lives in 2013. China's maternal mortality in 1990 is less than that of other countries in 2013 which shows that China has a better maternal status even in 1990 compared to other countries. This may be the result of better health system in China even before 1990. India has lower maternal mortality than Nepal and Bangladesh follows the lowest among the three. Though the maternal mortality is decreasing in all the countries, still it is found very high compared to developed countries or even China. The lowest maternal mortality in Nepal, Bangladesh and India is 197, 170 and 190 per 100,000 lives birth respectively in 2013.

In Nepal, life expectancy is increased from 54 years in 1990 and to 68 years in 2013. Bangladesh has its life expectancy of 60 years in 1990 and increased to 71 years in 2013. Indian life expectancy is 58 years in 1990 and increased to 66 years in 2013. The life expectancy among the countries is pretty much similar. It is found lowest (54 years) in Nepal in 1990 and the highest in China (75 years) in 2013. Chinese life expectancy in 1990 is higher than that of all the

comparator countries during 1990 to 2013, except Bangladesh in 2013, where it is higher than China. In conclusion, both of the indicators are in improving order. The mortality is in decreasing order while life expectancy is increasing order. These are positive outcomes of the health system performance in Nepal and other three selected countries.

**Table 2: Two measures of health outcome in Nepal and its neighboring countries**

<b>a) Maternal Mortality (per 100,000 live birth) in Nepal and Neighboring Countries</b>				
Year	Nepal	India	Bangladesh	China
1990	790	560	550	97
1995	580	460	440	76
2000	430	370	340	63
2005	310	280	260	50
2010	210	220	200	36
2013	197	190	170	32
<b>b) Life Expectancy (years) in Nepal and Neighboring Countries</b>				
1990	54	58	60	69
2000	62	62	65	71
2013	68	66	71	75

**Sources:** WHO- [apps.who.int/gho/data/node](http://apps.who.int/gho/data/node)

Table 3 below shows the THE as percentage of the GD is found in increasing order in each country, except in India, where it is found decreasing as well as increasing. There is no substantial difference in the THE as percentage of the GDP among the countries, however Bangladesh has the lowest percentage of THE as percentage of the GDP. Nepal has the highest percentage (6% in 2013) of the THE as percentage of the GDP among the countries since 1990 to 2013. Bangladesh has the lowest THE (2.6 in 1990) as percentage of the GDP. I have compared OOP as percentage of THE as financial protection. It is found in decreasing trend in each country except Bangladesh. The OOP as percentage of THE is decreased from 69% in 2000 to 46.2 % in 2013 in Nepal, a decline of 33 % during the same period. The greatest decline 42% was in China among the comparator countries.

**Table 3: Measure of Financial Protection**

<b>a) THE as a percentage of of GDP</b>				
Year	Nepal	India	Bangladesh	China
2000	5.4	4.3	2.6	4.6
2012	5.5	3.8	3.5	5.4
2013	6	4	3.7	5.6
<b>b) Government expenditure on Health as % of Total government expenditure</b>				
2000	7.6	4.6	7.4	10.9
2012	9.8	4.3	6.8	12.5
2013	11.9	4.5	7.8	12.6
<b>c) Out Of Pocket expenditure as % of Total Expenditure on Health)</b>				
2000	68.8	67.1	57.8	59
2012	49.2	60.6	63.3	34.3
2013	46.2	58.2	60.2	33.9

Source: <http://apps.who.int/gho/data/node.main.75>



Table 4 below explains increasing trend in *the skilled birth attendance rates* in Nepal from 2001 to 2011 by place, level of education and economic status. Of the total deliveries in rural in 2011, only 37% female attended skilled birth an increase from 11.6 % in 2001, while almost 79% female attended skilled birth in urban an increase from 53.7% in 2001. This shows the increase in the accessibility. In 2006, 47% females who attended skilled birth were found to have at least secondary level school compared to 21% who attended the skilled birth has only primary level of education. Females who do not have any education and attended skilled birth were merely 9% in the same year. Only 13% poorest females attended skilled birth in 2011 compared to 89% in the richest families. Second quintiles families who attended skilled birth was 28% in 2011.

**Table 4: Skilled Birth Attendance in Nepal, 2001 to 2011**

Skilled Birth Attendance (in two or three years preceding the survey) (%)										
a) <u>Place of Birth</u>			b) <u>Level of education</u>			c) <u>Economic Status</u>				
Year	Rural	Urban	None	Primary	Secondary or higher	Q1	Q2	Q3	Q4	Q5
2011	36.7	78.5				12.4	27.7	42.6	57.6	86.6
2010	26.1	53.2				7.7	20	25.8	42.5	65.7
2006	15.8	53.2	8.5	21	47	5.2	11	13.4	25.6	60.5
2001	11.6	53.7	7.5	17.7	47.4	4.2	5.3	10.5	16.2	48.8

Source: WHO([http://www.who.int/nha/en/\(world](http://www.who.int/nha/en/(world) health organization’s national health account In order to backup the health workers and the SBA, consistence funding support from the government and donor agencies had played crucial role. Substantial increase in the funding for maternal health in the remote made improvement in the access to the health services such as SBA. The progress was supported by behavioral change as women’s health awareness level was increased thorough the FCHV program.

Apart from this free health care services for the poor and cash in hand for the SBA further accelerated improvement in the mortality(Engel et al., 2013). Besides, it has been found that increase in the financial support from donors, consistent policy focus and resources from the government made maternal mortality improvement (Shrestha S et el, 2014). The table 5 below shows health financing in maternal health by government and donor agencies from 2006 to 2011. The government financing was increased to Rs13930 in 2011, compared Rs4516 in 2006. The financing from the donor agencies increased from Rs4714 in 2006 to Rs9884 in 2011.

**Table 5: Health care financing in Nepal, from 2006 to 2011(Rs. million)**

<u>Year</u>	<u>Government Financing</u>	<u>Donors’ Financing</u>	<u>Total Amount</u>
2006	4516	4714	9230
2008	7499	7448	14947
2011	13930	9884	23814

Source: Budget Analysis 2010/11 (MOHP), Nepal Government, Kathmandu

The allocation of the fund for maternity was increased to 12% in 2011 from 6.2% in 2006 (MOHP, Budget Analysis, 2011). Most of the financing were allocated for skills and capacity building of

FCHV by offering them refresher and advance training on delivery, and raising awareness on health care education during pregnancy (MOHP, 2011), mainly focused in rural part of Nepal. Allocation for family health and FCHV program has been increased by 3.34% in 2011 to Rs809.4 Million (MOHP, 2012). Besides the above, the fund was allocated to set of the SBA training centers where such training sites were increase to 18 in 2011 from 15 in 2008 (USAID, 2011) from where FCHVs got training. From the above, it delineates a success story for improved maternal mortality in Nepal due to financing to FCHV program under the NFH Program.

#### **4 Discussion**

These results are comparatively very important for the health performance research study purposes. The results has analyzed encompassed the health system from control knobs through health outcomes which was rare of its kind in the health assessment in Nepal. The results are also in logical order and indicators further show how health system components are interconnected. There are some similar studies in relation to maternal mortality in the Nepal but non of them are found to have completely interrelated study from health outcomes to control knob which is a unique feature of this report. Result section shows the improvement in the health indicators despites the political instability, lack of infrastructure and preference of health workers to work in the urban area.

The results provided in the tables are very crucial to a researcher or the government of Nepal for a health system assessment there. It will further help to a researcher to find out what is lagging behind this. For instance, we will have chance to see whether the higher maternal mortality is because of lack technology or education or income level or whether it is because of health system or intermediate indicators and so on. Therefore, these results are very important. From the Table 3 it clear that the government expenditure on health as percentage of the total expenditure is less than 8 percent for India and Bangladesh. Nepal increased it from 10 percent in 2012 to 12 percent 2013. But China has allocated more than 11 percent since 2000. Therefore, these results are very important to find out the reason behind the high life expectancy in China compared to lower in Nepal and very low maternal mortality in China compared to very high in Nepal. These figures will also help to detect the weakness of the health system or health framework or intermediate indicators. The study may come to conclude to implement Abuja Declaration 2001, which mentions a threshold for government in certain countries in Africa to spend 15 percent of their government budget into health sectors. These results are equally important for policy maker in Nepal.

Nepal has the highest maternal mortality among the three other countries. However, it is found decreasing fast. The maternal mortality of 790 in 1990 was reduced to just 197 in 2013, a reduction of 75 percent compared to India (66%) Bangladesh as 69% and China 67% in the same period. The average maternal mortality rate in China is 59 lives birth per 100,000 compared to Nepal as 420, 347 in India and 327 in Bangladesh. The variability is (231) in the mean is again highest in Nepal compared to that of India and Bangladesh, where it is found very close in

between them (144 and 146). The average life expectancy is the lowest (61 years) in Nepal among the countries and highest is achieved by China (72 years).

In case of total expenditure on health, on an average Nepal had spent 1.6 percent higher than India, 2.4 percent higher from Bangladesh and only 0.433 percent higher than China. The government health expenditure as percentage of total expenditure, on average, is 5.3, 2.4 and - 2.2 percent higher than India, Bangladesh and China respectively. Similarly, on an average, out of pocket payment is found; 7, 6 and 12 percent higher than India, Bangladesh and China. There is cross over in expenditure on health and the OOP data. Nepal is spending more on health than India and Bangladesh but less than China. The result is quite reverse for the OOP among the same countries. While Nepal spends less in health than in China but the OOP is higher for Nepalese than Chinese people they are paying. The measure of financial protection shows that there is correlation between the percentage of health expenditure and the out of pocket expenditure. The higher the expenditure on health as percentage of GDP or of total government expenditure, the lower is found the out of pocket expenditure. We can conclude from the Table 3 that: a) the increase in the health expenditure lower the OOP and maternal mortality, b) it increases life expectancy. There is positive effect of health expenditure on the life expectancy and maternal mortality.

Maternal mortality is highly related with the intermediate indicator access. From the Table 2 & 4 we found that maternal mortality decreasing but the access is increasing. Higher the accessibility to health care services, the lower is mortality. Accessibility can contribute up to 33% reduction the maternal mortality (Carlough & McCall, 2005). Comparing the data (Table 4), the SBA rate is more than double (78.5%) in urban area than rural for the year 2011. But the SBA is much higher in rural (4 times) than urban (1.5 times) from 2001 to 2011. The reason behind this is the FCHV program increases accessibility to health care services by raising health awareness mainly to rural area. Families or mothers whose education is at least secondary level are five times (47%) more likely to have the SBA than mothers who do not have any education (8.5%). The FCHVs remain always available in the community and who worked not only as health workers but also as mentors. Numbers of other maternal health services were also made available through the FCHV program that contributed to decline in the MMR. They had quite close relation with health post or sub health post that further increase access to health care. Substantial numbers of the FCHVs in the rural area made health services more accessible and pushed mortality down. Providing the above facts, it was not possible without consistent financing from government and donors into the FCHV program.

The money was mainly used for, training to FCHV, their skills development and increasing awareness in health education, available services and drugs distribution through FCHVs in the rural area ("Analysis," 2013). Fresher, refresher, and advance level of training were offered to the FCHVs. This increases FCHVs' reliability, quality, accessibility and efficiency. Because of this more women visited them for any sort of health care advice or counselling and propelled to further accessibility which improved maternal mortality. Financing also made health workers and

their service available 24/7. Some drugs such as the iron tablet, were also made freely available thorough FCHV. Financing made more FCHV available in the rural who played a key role in disseminating knowledge, awareness and maternal health care service available in the community. More money helped printing more leaflets on service need and their availability in the local area. Health workers were main sources of distribution the leaflets. Further the money was spent on the training centers to produce more skilled health workers where. In this way financing, a part of the control knobs played a key role in improving maternal mortality in Nepal and hence it is very important. This proves that there is interconnection in between financing, access and health outcomes. Increase in financing helps to increase activities of FCHV program that increased the access & services to improve maternal mortality. This is a proof to focus on financing component of control knob in order to increase access to health care service and improve maternal mortality.

There are significant changes in health seeking behaviors due to economic and educational development in the nation which is outside of the scope this study. There is rapid infrastructural and organizational development that has may have improved accessibility to the health care service, quality and equity and might have contributed further reduction to maternal mortality which is again beyond the scope of the study. Decentralization of the services and regulation imposed on physicians to serve the rural area immediately after graduation are also beyond of the scope of the study.

## **5 Conclusion**

Nepal has reduced maternal mortality by three quarter by 2015. One reason behind this is sharp increase in the intermediate access followed by health financing through the FCHV program. Again this was impossible without good health system in the country. From this we can conclude that health system in Nepal is taking its shape in order to further improve maternal mortality and achieve SDG3 by 2030, regardless of the political instability. Since there is a big gap in the accessibility in between rural and urban area, Nepal should focus more on health awareness, accessibility and availability of health care services in days to come. Higher amount of financing in the FCHV program developed the skills and knowledge of the FCHVs who in return became focal person in disseminating health care knowledge, information, services availability and accessibility in a community level. Consistent information from the FCHVs insisted community people to utilize maternal health care services available, resulting improve in maternal mortality. From the above it shows that if the sustainability in the financing and health workers is provided, definitely health system in Nepal will take remarkable progress in further improving maternal mortality in near future.

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