Chapter 6
Summary and Conclusion

Pregnancy-related complications are the leading cause of death and disability among women of reproductive ages in developing countries. Pregnant women face high risk of death in developing countries than in developed countries (UNICEF 2009). Rates of maternal mortality show a greater disparity between rich and poor nations than any other health indicator. Therefore, interventions are needed to improve the survival chances of the mother and her children. The utilization of maternal health services is widely recognized as an effective means to curb poor maternal health outcomes and mortality among women of reproductive age. Still, women in developing countries don’t utilize maternal healthcare services. In order to address this issue, a better understanding of the determinants of maternal health care services is necessary.

One of the eight Millennium Development Goals (MDGs) set by United Nations in 2000 is to improve the maternal health targeting at reducing the maternal mortality ratio by three quarters between 1990 and 2015 and to achieve universal access to reproductive health by 2015. Maternal mortality is unacceptably high about 800 women die per lakh live births from pregnancy or child birth related complications around the world every day. In 2013, 2, 89,000 women died during and after pregnancy and childbirth. Ninety nine percent of these deaths occur in developing countries (WHO, 2014).

This study examines the theoretical framework for studying predictors of maternal health care usage. The framework was originally developed by Anderson to evaluate equity in health care use in the United States (Anderson, 1968). The model was later expanded from a framework of access to a behavioral model of health services use (Anderson, 1995; Anderson & Newman, 1973). Anderson’s behavioral model postulates that the use of health care services is determined by a range of societal, health services system and individual variables (Anderson & Newman, 1973).
Societal factors in this model refer to things such as the environment of the community, the current state of knowledge in an era and people’s attitude and beliefs about the health and illness. Community-level variables include characteristics of the community where an individual lives that may enable them to obtain services. Specifically, societal factors reflect the economic climate, relative wealth and prevailing norms of the society (i.e. women’s education, the level of economic development and level of women’s status in the community).

The individual factors described in this model can be categorized into predisposing, enabling and need factors. Predisposing factors are often measured in terms of socio demographic characteristics such as age and parity of the mother, women’s education, husband’s education, mass media exposure and women’s autonomy. Enabling factors are socio economic in nature such as wealth index, place of residence, availability of health facility and distance from health facility.

Andersen’s Behavioral theory provides a comprehensive conceptual framework on how individual-level and community level factors impacts the utilization of health care services. Using this theoretical perspective, the study will explain the utilization pattern of maternal health care services in Haryana.

Haryana has carved its place in the recent decades and has performed well in all the sectors of its economy, whether it is agriculture or industry, canal irrigation or rural electrification. Haryana is among the most prosperous states in India, having one of the highest per-capita incomes (Haryana.gov.in, 2014).

The economic growth of Haryana has served as a desired model for other states since its creation in1966. The State economy grew at an excellent average annual growth rate of 8.8 percent during the period of last 8 years (2005-06 to 2012-13), higher than the 8.0 percent growth rate of the Indian economy. Though, Haryana is geographically a small state accounting for only 1.3 percent of the total area of the country, the contribution of the state in the National GDP at constant (2004-05) prices has been recorded as 3.4 percent as per the Quick Estimates (QE) of 2012-13 (Economic Survey of Haryana, 2014). With only a year left until the millennium development goal’s 2015 deadline for reducing maternal mortality, the
study of maternal health care use in Haryana is timely because maternal mortality and morbidity still remain high in this state in spite of all the efforts made to address the healthcare needs of women of reproductive age.

The study was conducted with the following research objectives:

1. To examine the pattern of maternal healthcare utilization in Haryana.
2. To identify factors associated with utilization of maternal healthcare services in Haryana.
3. To examine the utilization of maternal healthcare services in Haryana.
4. To examine whether utilization of maternal healthcare can be better addressed through decentralization.
5. To suggest the recommendations for improving utilization of maternal healthcare services.

Based on our theoretical framework and literature review, the study has answered the following research questions:

**Objective 1:** To examine the pattern of maternal healthcare utilization in Haryana.

Q1 Is there availability of infrastructure such as healthcare centers and staff for utilization?

Q2 Is there any pattern of utilization of antenatal care, delivery care and postnatal care services among women based on their socio economic and demographic indicators?

Q3 Why some women are not utilizing these services?

Q4 Is there any improvement in utilization of these services over the years?

Q5 Is there any variation in district wise utilization of antenatal services and institutional delivery.
Q6 Has Government of Haryana implemented any schemes/programmes for improving utilization of maternal healthcare services?

**Objective 2:** To identify factors associated with utilization of maternal healthcare services in Haryana.

Q1 Are mother’s age at birth, Number of children, education of woman and her husband, woman’s autonomy, household’s wealth index, place of residence, religion, caste, woman’s employment status, mass media exposure, and visit of health provider associated with antenatal care adequacy?

Q2 Are mother’s age at birth, Number of children, education of both woman and her husband, woman’s autonomy, household’s wealth index, place of residence, religion, caste, woman’s employment status, mass media exposure, visit of health, antenatal care provider associated with delivery care use?

Q3 Are mother’s age at birth, Number of children, education of woman and her husband, woman’s autonomy, household’s wealth index, place of residence, religion, caste, woman’s employment status, mass media exposure, antenatal care, place of delivery, visit of health provider associated with postnatal care?

**Objective 3:** To examine the utilization of maternal healthcare services in Haryana.

Q1 Do mother’s age at birth, Number of children, education of woman and her husband, woman’s autonomy, household’s wealth index, place of residence, religion, caste, woman’s employment status, mass media exposure, visit of health provider have differential effects on the maternal healthcare usage?

**Objective 4:** To examine whether utilization of maternal healthcare can be better addressed through decentralization.

Q1 Does the reservation of women for the post of Sarpanch can ensure better utilization of maternal health indicators such as antenatal care, delivery care and post natal care in comparison to male Sarpanch?

The study is based on both primary and secondary data.
This study is divided into 6 chapters. Chapter one is the introductory chapter. It includes the basic introduction to maternal health, history of healthcare in India starting from pre-independence till date, significance of the study, nature and scope of study, theoretical explanations for the individual and structural determinants of maternal healthcare usage. Anderson’s behavioral model is used to guide variable selection.

Chapter two presents the review of literature for the study covering equity in health, accessibility in health based on Anderson’s model focusing on structural and individual determinants and decentralization in maternal health care.

Chapter three aims to present the information related to the state under study. This chapter gives the overview of maternal healthcare situation in Haryana. The data is collected from Secondary sources such as published reports of government and non-government agencies, National Family Health Surveys (NFHSs) and District Level Household Survey (DLHS). Information related to Health infrastructure and human resources is collected from DLHS and facility surveys and state government website.

The background of Haryana is presented to give an overview of the context of the study. The main objective of this chapter is to examine the pattern of maternal healthcare utilization in Haryana. Information related to health indicators, health infrastructure and pattern of healthcare use in Haryana is described. Haryana is one of the smallest states in India with a relatively high per capita Gross State Domestic Product (GSDP). Economic infrastructure is also reasonably developed and it ranks fourth in the country Social indicators show a different story. Status of women is low, looking at the statistics. This chapter shows that despite the provision of proper healthcare delivery system, there are problems related to infrastructure and availability of human resources. Provision of adequate infrastructure and logistics at the sub-centre level can lead to quality health services and at the same time enhance community participation.

The pattern of utilization of antenatal care suggests that socio-economic differences lead to inequitable utilization pattern of maternal health care services. Two variables have stood out in assessing the pattern of delivery care only 7.3 % Muslim women
deliver at health facility and 16.5% Muslim women take assistance during delivery which is very less in comparison to Hindu women. Also, only 7% women who did not take any antenatal care did not deliver at health facility and 17.2% with zero antenatal care did not take any assistance of health professional at the time of delivery. The utilization pattern of post natal care is similar to antenatal care and delivery care. There were no significant differences in utilization pattern among women who took post natal check up within 42 days and who took post natal check up within 2 days. This implies that women are aware of this service and utilize this service will definitely utilize it within the time frame i.e. 42 days. The utilization of antenatal care services is below 10 percent in Fatehabad, Jind, Panipat, Bhiwani, Mahindargarh, Mewat and Faridabad. The highest rate of utilization i.e. more than 20 percent is observed in Yamunanagar, Kaithal, Rohtak, Rewari and Gurgaon.

Chapter 4 shows the differentials in utilization of maternal healthcare services in Haryana. This chapter uses the third round of the National Family Health Survey (NFHS) data which is similar to the Demographic and Health Surveys (DHS). DHS collects, disseminates national data on health and population in developing countries. The sampling plan and design explained in this study is done by International Institute of Population Sciences (IIPS), Mumbai who conducted NFHS –III survey.

In Haryana, NFHS-III is based on a sample of 2,302 households that is representative at the state level and within state at the urban and rural levels. The study interviewed 2,790 women age 15-49 years from all sample households and 1,083 men age 15-54 from a sub sample of households for obtaining information related to population, health and nutrition in the state. The household response rate in the state as a whole was 99 percent and the individual response rates were 96 percent for eligible women and 85 percent for eligible men.

In this study data related to currently married women (15-49) years of age is examined and a total of 2134 currently married women from both rural and urban areas are included. This chapter examined the extent to which predisposing and enabling factors influence the use antenatal, delivery and post natal care in Haryana. It describes the data source, the measurement of variables selected and the methodology
for the analysis. Descriptive statistics are used to characterize the distribution of the sample of women. Chi-square tests are used to test the differences in antenatal, delivery care and postnatal care based on the individual characteristics of the women aged 15-49 years. Logistic regression was conducted for each of the outcome variable to examine the association of individual characteristics on adequate utilization of antenatal, delivery care and postnatal care services in Haryana.

The study measures three outcome variables namely Antenatal care, Place of Delivery and Postnatal care to explore inequities in utilization pattern of maternal healthcare services in Haryana. The selected indicators of maternal healthcare utilization and their components are examined on the basis of guidelines laid by the Ministry of Health and Family Welfare (MOHFW), Government of India and World Health Organization (WHO). The independent variables used in this study are socio-economic and socio-demographic. The predisposing factors used in the analysis are mainly socio demographic variables such as woman’s age at child birth, woman’s education level, Husband’s education level, Religion, Social group, Autonomy, Mass media exposure. The Enabling factors used in this study are Place of residence, Wealth index, Visit of health provider, Work status.

Univariate analytic techniques were used to provide a description of all variables used in the analysis. The NFHS -3 dataset was used to extract information and STATA 10 was used to correctly estimate population means, proportions and standard deviations. Bi-variate analyses were performed to examine the nature of association between utilization of maternal healthcare services by selected socioeconomic and demographic background characteristics.

Multivariate analyses were performed to examine the nature of predictor variables and their relative contribution in explaining the dependent variables. Since both outcomes in this analysis are dichotomous in nature, logistic regression was used to predict the association between the dependent variables and the independent variables.

This chapter examined differentials in the use of maternal health care services namely antenatal care, delivery care and post natal care in Haryana on the basis of various socio – economic factors such as woman’s age at child birth, woman’s education
level, her husband’s education level, mass media exposure, autonomy, wealth, place of residence, meeting with a health worker, work status, religion and caste. The relationship between outcome variables and predisposing and enabling factors is based on Anderson’s model. Women who are not adolescents i.e. above 18 years of age tend to utilize antenatal care services two times more than adolescent women i.e. below 18 years of age. The odds of receiving antenatal care were high for women whose husband’s had secondary or higher level of education in comparison to women whose husband had no formal education. The odds of receiving antenatal care were highest for women belonging to other backward classes in comparison to women belonging to scheduled castes or scheduled tribes. The low utilization of maternal health care among certain groups shows the lack of access to health care services among socially backward communities. Women from richer and richest index are nearly two and four times more likely to utilize these services respectively compared to women belonging to poorer and middle wealth quintile. Household economic status has a positive impact on use of ANC.

The most eloquent factor which has shown positive association with increase in delivery care services is antenatal care. Women who have taken antenatal care utilize these services much more than women who have not taken antenatal care services. Any type of mass media exposure was two times more effective in the utilization of post natal care services. Women who have delivered at a health institution are likely to utilize post natal care services three times more than women who have delivered at home.

Chapter 5 explores the differential in utilization of antenatal, delivery care and post natal care in district Rohtak. The data used in this chapter is collected with the help of a structured questionnaire. The data was collected in the form of structured questionnaire by interviewing women aged between 15-49 years who have delivered during the year 2012-13. Twenty five women from each village were interviewed making it a total of 150 women with 0.10 margin of error to be tolerated at 95% level of confidence interval.
A cross sectional study was carried out in the district Rohtak. Rohtak has 2 tehsils namely Meham and Rohtak. We are considering Rohtak Tehsil for this study. It has 3 blocks namely Rohtak, Kalanaur and Sampla. Two villages from each block were selected randomly. Villages from Rohtak, Kalanaur and Sampla included in the study are Brahmanwas, Chamariya, Lahli, Aawal, Kharawar and Ismaila respectively. The basis of selecting the village was one male Sarpanch village and one female Sarpanch village. The villages from same block were in close proximity to each other. This chapter gives the overview of the Rohtak District, pattern of utilization of maternal health care services. Information related to health indicators, health infrastructure in Rohtak is also described. Descriptive statistics are used to characterize the distribution of the sample of women. Chi-square tests are used to test the differences in antenatal, delivery care and postnatal care based on the individual characteristics of the women aged 15-49 years. Logistic regression was conducted for each of the outcome variable to examine the association of individual characteristics with a focus on gender of Sarpanch to interpret the impact of decentralization on adequate utilization of antenatal, delivery care and postnatal care in Haryana. The dependent variables used for this study are antenatal care, delivery care and postnatal care the main explanatory variable is gender of Sarpanch and control variables are caste, woman’s education, husband’s education, income, media exposure, autonomy and role of ASHA (Accredited Social Health Activist).

The main purpose of this chapter was to examine whether reservation of women for the post of Sarpanch would lead to better utilization of maternal healthcare services with the help of primary data collected from five community blocks of District Rohtak. The health indicators suggest that utilization of antenatal care services has gone down in the year 2012-13 in comparison to 2007-08. Women who have received any antenatal checkup have declined from 96.8 % to 76.8 %. Only 6.1 % women have received full antenatal care as per DLHS-4 in comparison to 27.6% as per DLHS-3.

Looking at the statistics of delivery care and post natal care, both the indicators have shown significant improvement. Institutional delivery has improved from 52.85 in DLHS-3 to 84.7 % in DLHS-4. A conditional cash transfer scheme was introduced
under NRHM named Janani Suraksha Yojana to encourage women from rural areas to deliver at health institutions. DLHS data also suggests improvement in the utilization from the time this scheme was launched. Delivery at government and private health institutions has improved from 26% to 51.5% in DLHS-3 to 26.8% to 33.2% in DLHS-4 respectively. Delivery at home has shown significant improvement from 46.4% in DLHS-3 to 15.3% in DLHS-4. Delivery performed by skilled health personnel has improved from 58.9% to 95.6%.

Mothers who have received post natal care within 48 hours of institutional delivery has improved from 41.2% to 50.9%. Mothers who have received post natal care within 2 weeks of institutional delivery has also improved from 42.3% to 54.6%.

The significant determinants for maternal health care used in the analysis of primary data are woman’s age at child birth, caste, media exposure, women autonomy, women education, husband’s education, gender of Sarpanch, role of ASHA worker and income. Gender of Sarpanch is the main variable under consideration. Villages where the Sarpanch is female utilize antenatal services 5 times in comparison to a male Sarpanch village. But gender of Sarpanch doesn’t impact utilization of delivery care and post natal care services. Women and their husband’s education lead to improvement in utilization of these services. The odds of receiving antenatal care are highest if the women have completed 10 or more years of education. Husband’s having more than 10 years of education makes a huge difference and contributes in utilization of these services. Women with any kind of media exposure utilize delivery care services four times more. Women with above average income level utilize these services more. ASHA worker also plays a very important in utilization of maternal health care services. ASHA workers act an interface between the community and the public health system. These village level community health workers became part of the system under the NRHM which aims to provide accessible, accountable, affordable, effective and reliable primary health care to the vulnerable sections of society (NRHM, 2005).

Chapter six is the conclusion, where in findings of the present study have been summed up.
Despite various efforts though National Health Policy 1983, National Health Policy 2002, National Rural Health Mission 2005, India’s Maternal Mortality is high. This is a cause of concern for both national and global policy. India offers a complex picture of multiple inequalities. There are regional, sub regional, social and economic dimensions of inequality along multiple axes of class, caste, gender and religion.

To conclude, the present study has documented that the utilization of maternal health care services can be determined with various socio-economic indicators. There are three kinds of public health services namely disease oriented, service oriented and community oriented. Each complements the other like the legs of a three legged stool (Wyon, J 1990). This can be observed from the results of the study that just recognizing the disease is not enough, supply of services should be there taking into account the target audience.

Few factors such as Household wealth status, Husband’s education, Caste and Media exposure have the maximum effect on utilization of maternal health indicators in Haryana. Household wealth status has the biggest impact on utilization pattern in Haryana. Though women literacy in Haryana is above the national average but still it doesn’t affect the utilization pattern. As per the study results, in Haryana Husband’s education play a significant role in improvement of utilization of maternal health care services. Women belonging to scheduled castes and scheduled tribe also utilize these services less. Despite several schemes by government specially made for certain social group still it persists as a significant determinant of maternal healthcare services. Media exposure also has positive impact on utilization. As per the DLHS-4, in Haryana the rate of utilization of antenatal care services has gone down significantly and Women who have taken antenatal care utilize delivery and post natal services much more than women who have not taken antenatal care services. Gender of Sarpanch plays an important role in utilization of antenatal care services.
Implications

Results from this study have several implications. First, findings demonstrate the importance of individual characteristics of women in the use of maternal health services. Results emphasize the fact that efforts to improve use of maternal health would require interventions focused on making women aware about the importance of utilization of maternal health services. Since, it is well recognized that education improves health care access and health outcomes through different mechanisms. Results also demonstrate the need for interventions geared towards empowering women economically and socially, which may ultimately improve their use of maternal health services.

Another important positive relationship is found between husband’s education and utilization of services. Husbands should be made aware about the importance of use of maternal health services so that they can motivate their wives to utilize these services.

There is a strong positive relationship between household’s economic status and use of maternal health services, which calls for further actions to reduce financial barriers while increasing awareness of the importance of maternal health services, particularly among socioeconomically disadvantaged and vulnerable women.

Future Directions

Future studies should investigate the capacity of health facilities relative their use by women, particularly in the case of delivery care. Limited number of beds or limited quantity of medical supplies could divert some women to other health facilities that quite often are not in close proximity from their place of residence. This may lead to the limited use of maternal health care because of increased associated cost of transportation. Further analyses should explore travel time of women related to the use of maternal health services.

Also, contextual factors such as economic activity or population density should be considered for inclusion in future research given that the economic development of a
community, or the distribution of the population across space may exert an influence on maternal health use.

**Recommendations**

Efforts need to be made at community as well as household level to improve maternal health care services.

At community level, there should be call for action to reduce financial barriers while increasing awareness about the maternal healthcare services, particularly among women belonging to low wealth quintile. Efforts should be put to educate the men about the importance of maternal health care services. There should be more schemes for scheduled castes, scheduled tribes and other backward classes. Not just the literacy, there should be overall development of women. They should be exposed to newspapers, radio, television etc. the most important indicator of maternal health care is antenatal care as delivery care and post natal care are linked to this indicator. So, more emphasis should be laid on improvement of antenatal care services. Along with the reservation for Female as Sarpanch, their tenure should also be increased so that they can work more effectively.

At Household level, Husband and mother in law should be used as targets for messages. There should be pregnant women groups and some incentive based competition among mothers to be model mother who can set an example for other mothers.

From the policy perspective, the following steps are highly desirable:

1. Improvement in Health Infrastructure and availability of Health staff
2. Public Private Partnerships should be encouraged
3. Specific and evidence based strategies should be adopted to reduce maternal mortality rate
4. Vital registration system should be strengthened

Standards of health infrastructure, equipment, logistical and administrative support differ as per the level of health facility. The facilities at the higher level such as
medical colleges and district hospital are more equipped in terms of infrastructure, availability of equipments and trained staff in comparison to community health centres, primary health centres and sub centres. The quality of services depends on the upholding of the facilities. Emergency obstetric medical care is very important especially for maternal health care. It is necessary to have availability of staff and infrastructure. The availability of trained personnel and skilled birth attendants plays a very critical role. There should be proper monitoring of providers of maternal health care services like ANM is the first point of contact for the community in the primary health care system at the village level. She is the main provider of antenatal, delivery and post natal care services in rural areas. Efforts should be done to fill the vacancies and more focused programmes with respect to maternal health care. The staff nurses and health assistants at the PHC’s and CHC’s are not adequately staffed and are not available 24 hours for delivery care.

Government needs to establish a reliable vital registration system, especially for maternal and neonatal mortality and there should be proper monitoring of outcomes to know the actual position of maternal health situation. This will help in making further interventions for improving the maternal health. Public private partnership scheme like Chiranjeevi Yojana which aims at encouraging institutional deliveries to reduce maternal mortality should be introduced.

Health is a social phenomenon whose determinants cannot be separated from other social and economic determinants. Haryana has progressed at some fronts but still large gaps persist between the need and provision of services. It will require monitoring and evaluation of ongoing programs and effective implementation.

Health services no matter how efficient cannot change the condition of the marginalized people unless they are helped to become self-reliant and the root problems are addressed. People who are poor and illiterate are like uncut gems hidden under the dirt and stone. Given the opportunity, they can reach their full potential and live as responsible, sensitive human beings, possessing self – reliance and the liberty to shed those old customs and traditions that impede health and development (Arole and Arole, 1994)