ANTENATAL CARE AND INSTITUTIONAL DELIVERIES IN JAMMU AND KASHMIR: TRENDS AND DETERMINANTS

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DEDICATED

TO

MY PARENTS

&

SAMRIDH

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LIST OF ABBREVIATIONS

ANC	Antenatal care
MCH	Maternal Health Care
NHP	National Population Policy
WHO	World Health Organization
TT	Tetanus Toxoid
TBA	Traditional Birth Attendant
NFHS	National Family Health Survey
MOHFH	Ministry of Health and Family Welfare
WHO	World Health Organization
IFA	Iron and Folic acid
TBA	Traditional Birth Attendant
ANM	Auxiliary Nurse Midwife
LHV	Lady Health Visitor
NRHM	National Rural Health Mission
ICPD	International Conference on Population and Development

CHAPTER-I

INTRODUCTION

INTRODUCTION

Pregnancy is special!

Pregnancy is the culmination of a desire for motherhood and is the beginning of a women becoming creative in the ultimate sense of the term as she is in the process of begetting another human being. It is because of this reason that a mother is accorded the highest importance in Indian society. Mother, as the greatest poet of the modern India Rabindra Nath Tagore says, is the "living God on the earth" (Jain et al, 2004).

But there is no denying the fact pregnancy is the most grueling test for a woman. It is an ordeal that a woman has to undergo, a very tiring situation disturbing not only her body chemistry but also her very psyche. Pregnancy can be a risk event for a woman in a developing country. The most recent figures from the World Health Organization, which releases revised global maternal mortality estimates about every five years, estimates that 515000 women die annually from maternal causes. Ninety-nine percent of these occur in the less developed world. In India more than 100,000 women die every year from the causes related to pregnancy and child birth.

Antenatal care (ANC) refers to pregnancy-related health care provided by a doctor or by a health worker with in a medical facility or at home. The Safe Motherhood Initiative proclaims that all pregnant women must receive basic, professional antenatal care (Harrison, 1990). Ideally, antenatal care should monitor a pregnancy for signs of complications, detect and treat pre-existing and concurrent problems of pregnancy, and provide advice and counseling on preventive care, diet during pregnancy, delivery care, postnatal care, and related issues. The Reproductive and Child Health Programme recommends that as part of antenatal care, pregnant women receive two doses of tetanus toxoid vaccine, adequate amounts of iron and folic acid tablets or syrup to prevent and treat anemia, and at least three antenatal check-ups that include blood pressure checks and other procedures to detect pregnancy complications (Ministry of Health and Family Welfare, 1997; 1998b).

The real test for inclusive economic growth and development lies in the gains in human well-being and happiness, especially for vulnerable social groups and women. Women play a central role in terms of health as future generation (bearing and raising children) depends on them especially in developing countries; they are the most vulnerable section of the society regarding morbidity, mortality during child birth. Maternal health is influenced by a multitude of socio-economic factors, which again reflected in overall status of health. The Alma Ata World conference on primary health care in 1978 declared that "maternal and child health including family planning" is one of seven component of primary health care (WHO and UNICEF, 1978). India's maternal mortality rates are among the highest in the world. The country is seriously off-track in meeting this MDG. The maternal mortality rate (MMR) remains high at 540 per 100,000 live births (1998/99) .Reductions in MMR could be achieved by improving the quality of health service facilities and encouraging their greater utilization. Only 42.3% of deliveries are attended by a health professional, and two-thirds of all deliveries (66.4%) occur at home. The proportion of home deliveries is particularly high in rural areas (75.3%) where over three-quarters of the population live. Interventions to tackle maternal mortality should focus on the capacity of health facilities to respond to obstetric emergencies as well as on reducing the time it takes to get the appropriate level of care. Increasing the number and proximity of adequately equipped facilities is critical. Reducing high levels of severe anemia in women will also contribute significantly. Maternal health should be given major weight in health care system in order to have healthy women for nourished children. Maternal health programmes are important part of any country's overall health care system. Ensuring access to quality maternal health services throughout pregnancy to child birth is the key element in every successful maternal health programme.

1.1: Maternal and Child Health Programmes in India

Maternal health programmes has gone a long way in its transformation since the idea was first adopted by the Government of India 1951, as a part of the family Planning Programmes. This was the first of its kind in the world. Even during British period, a Maternity and Child Welfare Bureau was established under the Indian Red Cross Society

in 1931. During the 1950s commissions were set up for looking into agendas of health in India, like that of Bhore Committee in1946, underline enormous dimension of health problems of mother and children in India.

India has built up a vast health infrastructure and manpower at primary, secondary and tertiary care in Government, voluntary and private sectors. India's 10th five year plan goes beyond the MDGs in terms of target health outcomes for India. In order to achieve these targets, India needs to scale-up, reorient and reform its public health system, especially in the provision of primary health care services, with particular focus on women's and children's health. If India is serious about poverty reduction and economic growth, then it needs to invest substantially more in its people's health now (10th Five Year Plan, 2002-2007).

1.2: National Population policy (2000)

The National Population Policy adopted by government of India in 2002 (MOHFW, 2000) enlightens the government commitments to safe motherhood programmes within the wider context of Reproductive Health. Among the National socio-economic goals for 2010 specified by the policy, several goals pertain to safe motherhood, namely that 80 percent of all deliveries should take place in institutions by 2010; 100 percent deliveries should be attended by trained personnel and maternal mortality rate should be reduced to all level below 100 per 100,000 live births. ICPD in 1994 at Cairo played a vital role to drag the attention of scholar to maternal health. The immediate objective of the National Population Policy 2000 is to address the unmet needs for contraception, health care infrastructure, and health personnel, and to provide an integrated service delivery for basic reproductive and child health care (MOHFW, 2000).

1.3: Need of the study

Women themselves form 50 percent of this world's population, and they are the caregivers for the remaining 50 percent. In order to maintain a level of health that is socially and economically productive, it is of utmost importance that women should not

suffer from any kind of ill health – whether physical, mental or social. In other words, the health of the women is the key to a healthy family, a healthy community, a healthy state and, consequently, a healthy world. The health status of a State can largely be gauged by measuring the health of its women and children.

Carol Bellany, the Executive Director of UNICEF, had asserted that "The focus must be on the right of women to have the basic maternal health services. Governments and communities must see this not as an extra but as a fundamental component of women's health, child health and family health". Around the world, many programmes have been initiated to improve women's health. Though India also has of such initiatives, but our women folk have not still achieved a satisfactory level of health. It thus, becomes necessary to evaluate the outcomes of such health programmes targeted at women. One way of such evaluation involves measuring key Indicators women's health at periodic intervals (Parveen et al, 2008).

National Family Health Survey (NFHS) periodically is collecting information covering a wide range of health indicators, specially pertaining to mother and child health. The 2nd and 3rd National Family Health Survey (NFHS-2 and 3), carried out in 1998-99 and 2005-2006, provides an overview of the current health status in India. In situations where there is instability, for example in conflict ridden areas, the major brunt is borne by the women and children. Whether there is loss of life of self or any family member, or there is displacement, it is always the woman who suffers the most. There are often cases of rape, and other inhuman acts committed over women in areas undergoing conflict. Besides the acts of human rights violation perpetrated by various agencies, as well as their biological and physical disadvantages women have to bear excessively the burden of existing and the newly inflected diseases. Not only this, many times the health services are disrupted, or due to various socio-economic reasons, women cannot utilize them properly. Jammu and Kashmir has been undergoing geopolitical strife for the past two decades. Intermittently, it has also been suffering at the hands of nature by way of heavy snow storms, earthquake and flash floods. Such circumstances always take a greater toll on women, children and the elderly. Since NFHS-2 and NHFS-3 gives us an insight into the existing health conditions of women in India and also in its different states. Here an

attempt has been made to show trends in ANC Institutional deliveries and Professional assistance during delivery and compare these figures on women's health of Jammu and Kashmir with that of the country.

1.4: Research Questions

1. What is the trend in maternal health care behaviour in Jammu and Kashmir over NFHS-2 and NFHS-3?
2. Is maternal health seeking behaviour in Jammu and Kashmir is different than what we observe in rest of India?
3. Does the impact of socio-economic variables on maternal health seeking behaviour remain the same over these two time periods? If it varies what are the changes observed in it?

1.5: Objectives

The objectives of this study are as follow:-

1. To study trends in the utilization of Antenatal care, Institutional deliveries and Professional assistance during delivery in Jammu & Kashmir.
2. Comparison between Jammu & Kashmir and India in utilization of Antenatal care, Institutional deliveries and Professional assistance during delivery.
3. To explore the impact of ANC on safe delivery in Jammu and Kashmir.
4. To study the effect of background characteristics in determining the level of ANC, Institutional delivery and Professional Assistance.

1.6: Chapterization of study

The dissertation is divided into five chapters which are as follow:-

Introduction, statement of the problem, Research questions, and Objective are included in the first chapter. The second chapter presents review of literature, conceptual framework; data sources and methodology has been presented. Chapter three has been sub-divided into two sections consisting of Percentage distribution of ANC in first section, while the second section covers institutional deliveries and professional assistance during delivery. Chapter four analyzes the net-effect of different socio-economic on the utilization of ANC, Institutional deliveries and Professional assistance during delivery. Summary and conclusion is discussed in chapter five.

CHAPTER II

REVIEW OF LITERATURE

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CONCEPTUAL FRAMEWORK

Literature Review

2.1: INTRODUCTION

As stated in the previous chapter that maternal death is high in India. India's effort to curb the level is also not new. There are several studies done by the scholars not only in India, but also elsewhere to understand the determinants of health care utilization, more specifically maternal health care utilization. Present chapter will review the available literature to understand the pathways of relationship. The literatures are grouped as follow:

Age at Birth: - Birth order is expected to work in two ways. First, as the number of children the respondent has borne increases, she may tend to rely more on her past experiences and depend less on formal care. Secondly, a higher birth order suggests a greater family size and hence lower resources (both time and money) available to seek formal healthcare. Women aged 15-29 years were approximately 1.5 times more likely than the reference group (45-49) to use maternal health facilities (Dalal and Dawad, 2009). Mother's age has also a strong positive effect on the use of antenatal care and delivery in a medical institution (Sugathan et al, 2001). In Rajasthan, the likelihood that mothers received antenatal checks ups does vary by age (Rajasthan MDG Report, 2007). According to NFHS-III, older women are less likely to receive antenatal care in Madhya Pradesh (Samvad). Antenatal care were more likely among women who married at age of 19 or above compared to women at younger age (Pallikadavath, 2004)

Birth Order: - Studies shows that higher the number of children lowers the use of health care facilities, which could be because of socio-economic dynamics and its implications for intra-household distribution of resources. It was found that as the size of the family increased, expenditure on health decreased, more for women than it die for men, which shows most of the time women's health compromised than that of men's (Dharmalingam, 2007). Among other factors, child birth order also has strong effects on the likelihood of antenatal care as well as institutional deliveries (Sugathan et al, 2001). In Rajasthan, the birth order is negatively associated with number antenatal checks-ups. Women with lower order seem to go for three or more ANC checks-ups than women with order of

birth. This could because of perceived complication at birth being more at lower birth order compared with higher birth order (Rajasthan MDG Report, 2007). In Madhya Pradesh, the odds of women with two or more children receiving antenatal care were 30 percent lower to women with one child, (Pallikadavath, 2004). Chakrabarti, (2007) in their paper for North-eastern states using National Family Health Survey, (NFHS-2) shows that, increases in the respondent's pregnancy order decreases her odds of using the government facility by approximately 16 percent and private facility by around 11 percent. Amongst others variables, only birth order was unequivocally found to influence choice of delivery care. Birth order is expected to work in two ways. First, as the number of children the respondent has borne increases, she may tend to rely more on her past experiences and depend less on formal care. Secondly, a higher birth order suggests a greater family size and hence lower resources (both time and money) available to seek formal healthcare.

Place of Delivery: - In India disadvantage mothers usually delivers babies at home because of ineffective public healthcare or expensive private health facilities. (Dalal and Dawad, 2009). The urban access to antenatal checks ups, institutional deliveries, post partum checkups and contraceptive use is higher compared to rural areas (Dharmalingam, 2007).Mothers receiving one or more antenatal care antenatal checks-ups is the strongest predictor of institutional delivery(Sugathan et al, 2001). A majority of women with antenatal care planned an institutional delivery. It may, therefore be possible to promote institutional delivery by promoting antenatal checks-ups and associated counseling. In general, women prefer to deliver at home for reasons such as support, familiarity, tradition, and belief that birth is considered a natural phenomenon for which an institutional delivery is not required, (Chandhiok et al, 2006). Emerging market condition and a poor public healthcare system has encouraged a shift from public to private health care, with private healthcare facilities now constituting more than 80 percent of healthcare expenditure, including that of those who are poor. (Dalal and Dawad, 2009). According to NFHS-III report, in Madhya Pradesh less than 40 percent of birth in India takes place in health facilities. More than half take place in the women's own home and 9 percent take place in the parent's home (Samvad). NFHS report examines the role of

existing antenatal-care services in promoting institutional delivery in rural areas. The analysis is based on NFHS-1 results from four Indian states Andhra Pradesh, Gujarat, Bihar, and Rajasthan. Mothers who receive antenatal check-ups are two to five times more likely to give birth in a medical institution than mothers who did not receive antenatal check-ups. Mother's age and education and child's birth order also have strong effects on the likelihood of institutional delivery, and household standard of living has a substantial effect in most cases. Contrary to expectation, access to health services does not generally have a statistically significant effect. These results suggest that it may be possible to increase institutional deliveries by promoting antenatal check-ups without having to build additional hospitals. (Sugathan, et al 2001).

Level of Education: - Amongst the maternal attributes, education was found to have the strongest association with use of delivery facilities at time of birth. Education improves utilization by (a) increasing awareness (b) empowering women to take decisions on her own health risks (c) increasing her ability to communicate with health personnel in an environment alien to her own world. However, estimates from some studies revealed that the women educated only until primary level did not behave significantly differently from those who are illiterate. Education of the mother is an important social variables that have positive bearing on utilization of maternal and child services. Women's education in societies like that of the Yoruba in Nigeria can produce profound changes in family structure and relationships, which in turn may influence both mortality and fertility levels. Education may well play a major role in the demographic transition and this role may help to explain the mortality (Caldwell, 1979). It is observed that formal education of women influences the use of maternal health-care services in Peru. The study also shows the positive effects of maternal schooling on the use maternal care and delivery assistance (Elo, 1992). The relationship between maternal schooling and factors known to reduce risks of maternal and child mortality, namely health-care practices has been studied for selected northern and southern states in India. The findings indicate that a higher level of maternal education results in improved child survival because health services that effectively prevent fatal childhood diseases are used to a greater extent by mothers with more education than by those with little or no education (Govindswamy et

al, 1997). The proportion of pregnant mothers receiving checks-up increases as the level of mother education rises. Only 19 percent of birth to illiterate mothers received antenatal care as compared to 80 percent of ANC to mothers who received who have at least completed high school (Rajasthan MDG Report, 2007). A study conducted by Rani, et al (2007), examines differentials in the quality of antenatal care in India observed that the relatively poorer quality of antenatal care received by the poor and illiterate women especially in north India confirms the 'inverse health care law', where persons who need it the most get the least. Women who are better educated have maximally availed of delivery care services when compared to less educated and illiterate women. Attainment of education has a major influence on utilization of maternal health care services (Salam, et al, 2006). Respondent's level of education emerged as significant predictors for non-utilization of public healthcare facilities (Dalal and Dawad, 2009). Mother's education has a strong effect on the use of antenatal care and institutional delivery in rural areas of four states of India (Sugathan et al, 2001).

Castes:-The caste system has been at the core of social organization in India for centuries. Sociologist have studied the caste system both to comprehend it and as a field from which broader sociological principle could be formulated. Caste is clearly a barrier to maternal health care services use among the rural women of Maitha, UP, India. Dissemination of information and generating awareness about the availability of subsidized health services at the government-run health facilities can improve the use among women of all groups (Saroha et al, 2008).The odds of institutional delivery are lower for scheduled caste and scheduled- tribe mothers than for others (Sugathan et al, 2001). Tribal women have the least access followed by the dalit (lower caste/scheduled caste) women and rural in general. Maternal mortality ratio is estimated to be quite high among the scheduled tribe (652) and scheduled caste (584) women compared to the women of the caste (516) (Dharmalingam, 2007). SC/ST are at a particularly big disadvantage in use of antenatal care compared to forward caste, but the gap between OBC and Forward castes is also large and statistically significant. The odds of getting antenatal care were 30 percent lower for SC/ST and 24 percent lower for OBC and compared to FC. While the difference between FC and the two lower castes groups are considered, the difference between SC/ST and OBC are quite small and not significant. A

similar, albeit smaller, disadvantage of lower castes exists in having received delivery assistance, with SC/ST and OBC women having 21 percent and 9 percent smaller odds, respectively (Dommaraju, et al, 2008). In Rajasthan, by caste/tribe, the likelihood of having received any antenatal checks-ups, as well as the likelihood of having received an antenatal checks-ups from a doctor, are lowest for birth to scheduled caste mothers and the highest for birth to mothers who don't belong to a scheduled caste, scheduled tribe or an others backward class (Rajasthan MDG Report, 2007). In Madhya Pradesh, NFHS-III surveys found that maximum number of maternal deaths is recorded among the scheduled castes, scheduled tribes and other backward classes. Only 17 percent of births to women who belong to ST were assisted by a doctor, compared with 47 percent births to women who do not belongs to ST, SC or other backward classes (Samvad). State-wide variation was evident in relation the impact of caste. In MP the odds of receiving antenatal care were 30-40 percent lower for members of ST relative to SC. Interestingly relative to those from SC, Rajasthan women belonging to the forward caste groups had 20-30 percent lower odds for receiving antenatal care (Pallikadavath, 2004). In MP the odds of receiving antenatal care were 30-40 percent lower for members of scheduled tribes relative to scheduled caste (Pallikadavath, 2004). Policies for universal literacy and ' health for all' can go long way to increase the individual capabilities but even here the utilization of services by the disadvantage sections of the society is limited due to socio-economic constraints. This can lead to serious inequalities in the very sectors- health and education – which are expected to play the equalizing role in India's struggle to reduce inequality of opportunity. In caste- ridden society like India, social hierarchy also can be a serious handicap for utilization of available services in the health and education sector. Differentials between SC women and 'others' women regarding antenatal care disappears in most of the states after adjusting the effect of socio-economic factors. Interestingly differentials persist only in Maharashtra and four eastern states. Among them, in Orissa, west Bengal and Assam, SC women is less likely to be without antenatal care as compared to women in 'others' category. Only in Maharashtra and Bihar, even after adjusting socio-economic factors, the odds of not taking ANC(ratio of women not taking ANC to those receiving) is nearly one and half times more among SC as compared to women in 'others' category. Similarly differentials between OBC and 'other' women

regarding antenatal care are mostly due to difference in the socio-economic conditions in all the states except Uttar Pradesh, Orissa and Gujarat. As compared to a woman in 'other' category OBC woman is more likely to be without antenatal care in Uttar Pradesh and much more so in Gujarat even after adjusting socio-economic conditions. In Orissa, however, OBC woman if in the same socio-economic situation as a woman in 'other' category is less likely to be without ANC. Differentials between ST women and women in 'other' category in many states are striking even after adjusting socio-economic factors. In Andhra Pradesh, odds of not taking ANC are three times higher among ST women as compared to women in 'other' category. The corresponding odds ratio is 2.6 in Maharashtra, 2.0 in Gujarat and Madhya Pradesh and 1.8 in Uttar Pradesh. Only in Rajasthan, ST woman as compared to a woman in 'other' category is less likely to be without antenatal care. It could be that Rajasthan being a state with about 12 per cent ST population, the programmes has taken specific care to focus on the tribes, and/or there are no cultural barriers as such which makes the ST women averse to taking ANC. (Roy et al, 2004).

Religion: - Studies pertaining to India have also accounted for religion and caste of the household. It is generally believed that Muslim women are less prone to use formal care because of restrictions placed on their freedom of movement and overall lower autonomy. Our results in terms of religion and caste variable depict the following: respondents residing in a household where the head is 'Muslim' has significantly lower odds of choosing a public or private facility compared with where the head is of Hindu origin. On the other hand, respondents coming from a miscellaneous religious background do not behave significantly different to the Hindu household. (Chakrabarti et al, 2007). The effects of religion are mixed. In some cases, the odds of institutional delivery and ANC are higher for Muslims than Hindus, but in other cases the direction of the effect is reversed (Sugathan et al, 2001). Among the religious groups, Hindu women have higher maternal mortality than Muslims or women of other religion (Dharmalingam et al, 2000). Muslims mothers received an antenatal checks-up for 54 percent compared to Hindu mothers who received an antenatal checks go 46 percent of birth (Rajasthan MDG Report, 2007).According to NFHS-III, in Madhya Pradesh majority of women in all religious groups receive antenatal care nonetheless, there is a substantial variation by

religion in the likelihood women receiving antenatal care. Antenatal care was received by 73 percent Muslims women and 78 percent Hindus women, compared with almost all Jain women and 90 percent Sikh women (Samvad). Among all religious groups Muslims in Madhya Parades were the most likely to access antenatal care through visit to a health facility. In UP, on the other hand, Muslims and Hindus were similar while members of 'other religions, including Sikhs, Buddhist and Christians were more likely to access antenatal care with odds of 2.3-3.2 relative to Hindus (Pallikadavath, 2004).

Economic Variable: - Those women who were working but not earning are getting 40 percent less antenatal care services than those working and earning in A.P. working status and exposure to mass media has similar kind of relationship with place of delivery as with antenatal care (Dharmalingam, 2000). Women utilization practice gets affected by husband occupation positively. Women whose husband are involved in business and white collar job expected to utilize more than women having agriculturist husband (Mazhural, 2003).It is well established that working women are more likely than non-working mothers to take advantage of modern health care services. Working women are considered to have greater awareness of the existence and value of preventive health care services. Various literatures showed a positive relation between working status of women and health (Ray et al. 1984; Kanitkar and Sinha 1989; Elo 1992; Basu 1992; Abdalla 1993; Govindswamy 1994; Barlow and Diop 1995; Ahmed and Mosley 1997; Regmi and Manaddhar 1997). This positive relation entails women with greater decision-making power regarding matters concerning herself and her children. Thus working women are free to take their own health decision (Mondols 1997). When a woman is exposed to the outside world, she comes in contact through discussion and communication on various health services developments and their benefits. This surely affects the rate of utilization of health care services (Mohammamed 2001). Moreover workplace is an appropriate ambience for addressing sensitive health issues. Since it is a place where people spends a considerable amount of time interacting with each other, work places are suitable for reaching people and in this regard ILO and SADC are developing workplace policies and programmes. The odds are lower for working mothers than for nonworking mothers (Sugathan et al, 2001). In Rajasthan, non working is more likely to go for antenatal checks-ups than working-women (Rajasthan MDG Report, 2007). In Madhya Pradesh

uptake of antenatal care was higher among non-working women compared to working women (Pallikadavath, 2004). Using the data from the National Family Health Survey (1998/99), for Northeastern states, Chakrabarti (2007), article is the first attempt to analyze the maternal as well as antenatal heath care usage for the North eastern states of India. The role played by the mother's occupation status is uncertain on one hand it might enhance her power within her household regarding any decision pertaining to her own health. On the other hand, in developing countries like India, particularly in rural region women from relatively well-off family are restrained from taking employment. Hence, the impact of a mother work status may partially be capturing the economic impact.

Standard of living: - Low status of women is pervasive in India (Arnold et al 1998) and acts as an important variables' affecting the utilization of health care services. Mondol (1997) indicated in his study using multivariate logistic regression that the antenatal care services differed significantly with regard to the women's standard of living and was more than five times higher among economically well off women as compared to with women belonging to the lower economic strata. The health of poor women is further compromised by the conditions in which they live, inadequate and overcrowded housing without sanitation or clean water, often in unhealthy areas (Sadik 2004). Centre for Communication Health and Environment (CECHE 2000) in an attempt to test the effects of Public Services Announcements (PSA's) with health educated video programmes recruited socially disadvantages and economically disadvantages women from urban slums of Chennai using a snowball survey to participate in the study. This also emphasizes the fact that standard of living does acts as a back ground control variables in assessing the effects of health services. Chakrabarti and Chaudhuri (2007) in their paper for North-eastern states using National Family Health Survey, (NFHS-2) shows that, the economic condition of the respondent's household will of course play a decisive role in determining her pattern of consumption of health services. Economic conditions have a significant positive impact on the odds of seeking the services offered by either a public institution or a private facility vis-à-vis giving birth at home. This stems from the fact that affordability is a bigger issue for the private facility because the monetary cost (for e.g. fees) attached is comparatively higher.

Place of residence: - A study examines factors affecting the choice of maternal and child health services in a rural area in Saudi Arabia. A house-to-house survey of 329 women in Al-Oyaynah village, north-west of Riyadh city, was carried out to determine the maternal factors associated with this choice. The tremendous socioeconomic growth of Saudi Arabia in the past 15 years has resulted in the provision of high quality health and medical services, including maternal and child services, for the growing population. The primary health care approach adopted to achieve health for all by the year 2000 has brought maternal and health care services nearer to the people, even in the remotest areas. However, reports have shown that health service utilization is determined not only by its availability but by a number of other factors. For instance, in spite of the equitable distribution of primary health care and MCH services in Saudi Arabia, place of residence has been an important factor in their utilization. Surprisingly, the rural and desert populations were found to make greater use of MCH services than those in urban areas. The present study examines the utilization patterns of the MCH services in a rural area of Saudi Arabia. The low prevalence of deliveries at home (10 percent) found in this study is a good indicator of an increased use of modern health services in the kingdom. Previous investigators have reported a prevalence of home deliveries as high as 50 percent in the rural areas of Saudi Arabia. About 10 percent delivered at home, 15 percent in PHCs, and 75 percent in hospital settings. All variables considered independently were statistically significantly in relation to the place of delivery. A good proportion of home deliveries were by old (35 years and above), multifarious, low-income and illiterate housewives who had been married for 15 years or more. This large decrease in the Number of home deliveries is a clear manifestation of the impact of the primary health care approach to achieve health for all by the year 2000, which has now been almost fully implemented in Saudi Arabia. (Nora, Al-Nahedh, 1995). Utilization of maternal health services depend upon place of residence i.e. rural or urban (Kroger, 1983).More specifically, Singhal (1992) observed the place of residence to affects the rise of antenatal care services. Women living in urban areas are likely to opt for antenatal care services and institutional deliveries (Ray 1984; Kanitkar and Sinha 1989; Elo 1992; et al. 1993; Barlow and Diop 1995; Ahmed And Mosley 1997; and Regmi and Manandhar 1997). According to Mondol (1997) in Rajasthan the antenatal care services utilization

was less in rural areas than in urban areas. A national study identified that the majority of the population (Urban 46 percent and rural 36 percent) mainly use private doctor or clinics with only 16 percent visiting public and private hospitals. The same study identified that urban Indians prefer private hospitals, while the rural population prefer public healthcare facilities (Dalal, and Dawad, 2009). Rural women use antenatal services less than urban women may be because they are engaged in low paid jobs and taking leave affects their income, which finally affect their health. Similarly, women whose spouses have high school and above education are more likely to have utilized more delivery facilities compared those with up to middle level education and illiterate spouses (Rajasthan MDG Report, 2007). According to NFHS-III report, 93 percent urban women and 77 percent rural women has received any antenatal care. The data shows that, 59.9 percent deliveries in urban areas and 20.2 in rural areas. This depicts the quagmire of health care facilities and personnel in the rural areas (Samvad).

Women Exposure to Mass Media: - There is a strong association between mass media exposure of women and the reproductive behaviour. Modern western ideas about consumer values, control over one's life and non-familiar roles of women could be communicated through the media and influence people even in rural setting and with little education (West off and Bankole, 1997). Mondol (1997) while studying utilization of antenatal care services in Rajasthan using NFHS data show women's exposure to mass media as an important predictor variables affecting the rate of utilization of antenatal care services. In addition to respondent's education, women's exposure to mass media can potentially increase her access to information and hence. A relatively high proportion of the respondent (58 percent) in the rural sample found to read a Newspaper, or watch television or listen to a radio once a week. It is established that from various studies that utilization of maternity services are influenced by Exposure to mass media (Retherford and Mishra, 1997). The odds of institutional delivery are higher for mothers who are regularly exposed to the electronic mass media than who are not regularly exposed in rural India (Sugathan et al, 2001). In Rajasthan, women who are exposed to media go more ANC than those who don't (Rajasthan MDG Report, 2007). In Madhya Pradesh, exposure to mass media substantially increased the use of antenatal care (Pallikadavath,

2004). Gupta et al., (2002) in a recent study of women's status and empowerment and their utilization of maternal care services in Rajasthan found that in the absence of education , exposure to mass media helps to bring about the desired change in the women's behaviour. They found that in Rajasthan almost one third of women who are not exposed to any mass media also antenatal care services. This proportion is reduced to 28 percent among who are regularly exposed to mass media. The study also reveals that regular exposure to mass media increases the probability of utilization maternal care services and television emerges as the most powerful media in influencing women. In fact regular exposures to mass media are found to be the strongest and significant determinant of livelihood of virtually each and every component of maternal care.

Partner education: - Education of the spouse is also important, in Rajasthan women with more educated husbands are more likely to have more number of ANC checks-ups compared to illiterate. This is also natural as educated husband must be engaged in better job, which yield higher income and so could afford visits to a medical institution. This situation also happens with nucleation of family structure more, where the role of the spouse in decision-making for pre-natal care is important uptake of antenatal care increase with husband education (Rajasthan MDG Report, 2007). Chakrabarti and Chaudhuri (2007) in their paper for North-eastern states using National Family Health Survey (NFHS-2) shows that the respondent's husband profile is measured in terms of his educational qualification and nature of occupation. Respondents whose husbands are educated at least until primary level are found to prefer care at a public facility while if the husband is educated beyond the primary level, they prefer delivery at a private facility. However, these effects are not significant in general. The nature of occupation of the husband is found to be a significant determinant of the pattern of utilization of health services.

2.2: CONCEPTUAL FRAMEWORK

A conceptual framework has been developed based on the literature survey to workout inter-linkages between socio-economic characteristics and utilization of maternal health care services in Jammu and Kashmir. It will also try to analyze how the socio-economic and demographic factors playing their role in affecting the utilization of maternal health care services in Jammu and Kashmir.

There are three components of maternal health care which is considered to be studied in the present research. They are:-

- Antenatal care
- Place of delivery
- Assistance during delivery

2.3: Prenatal care

Prenatal development is the growth and development of a single-celled zygote formed by the combination of a sperm and an egg into a baby. The word "prenatal" comes from the Latin "pre-," before + (g) natus," birth = before birth. "Antenatal" is often used in lieu of "prenatal" in the UK, Australia, etc (WHO, 2004). WHO defines antenatal care as a dichotomous variable, having one or more visits with a trained person during the pregnancy, or none (WHO, 1991). Antenatal care is provided to women during their pregnancy in order to avoid complications. It is usually supplied by Doctor, Health workers with in medical facility or at a home. The safe Motherhood initiative proclaims that all pregnant women must receive basic professional antenatal care (Harrison, 1990). Ideally, antenatal care should monitor a pregnancy for signs of complication, detect and treat preexisting and concurrent problems of pregnancy and provide advice and counseling on preventive care, diet regulation during pregnancy, delivery care, postnatal care and related issues. Antenatal care includes three steps such as women should receive two doses of tetanus toxoid vaccine, adequate amount of iron and folic tablets or syrup, more than three antenatal visits, blood pressure check up and other to have an ideal antenatal care during pregnancy. Some components of antenatal care as follows:

(A) Antenatal Checkups:

A pregnant woman can get antenatal checkups during pregnancy by visiting doctor, health workers in medical facilities, receiving a home visit from health worker, Auxiliary Nurse Midwife (ANM) or both. The number and timing of first antenatal checkups are important for health of the mother and child. The conventional recommendations for normal pregnancy is that once pregnancy is confirmed, antenatal checkups should be scheduled at four week interval during the seven months, the every two week until last month, and weekly thereafter. Four antenatal checkups one-one each during the third, sixth, eighth and ninth month of pregnancy have been recommended as the minimum necessity (Park and Park, 1989).

(B) Tetanus Toxoid Vaccination:

In India, an important cause of death in infancy is neonatal tetanus, which is caused to the new born infants who become infected by tetanus organisms, usually at the umbilical stump. According to the National Immunization schedule, a pregnant woman should receive two doses of tetanus toxoid injection, the first when she is pregnant and second when the pregnancy is 20 weeks.

(C) Iron and Folic Acid Supplementation:

The provision of iron folic acid tablets to pregnant women to prevent nutritional anemia forms an integral part of safe motherhood services offered as part of the MCH activities of the family welfare programme, and now offered as part of the RCH programme. The programme recommendation is that pregnant women must consume tablets of iron folic acid for 90 days during pregnancy.

Although antenatal care alone cannot prevent all obstetric emergencies (Vilar, 1997), the information provided by the antenatal services provider on danger signs, diet and planning for delivery, along with testing for anemia, malaria and high blood pressure are important for the successful management of pregnancies and the subsequent well-being of the child.

2.4: Place of Delivery

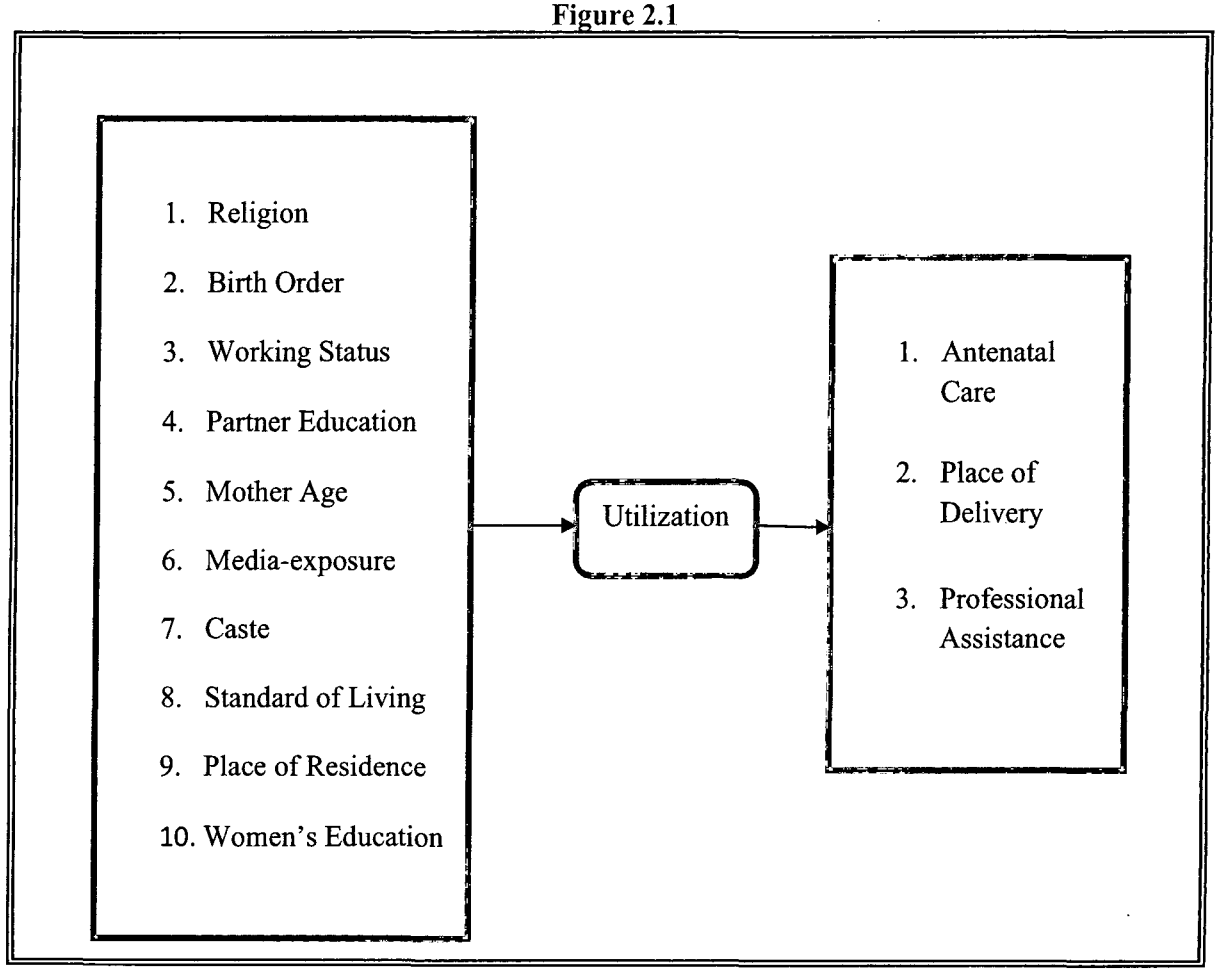
The place of delivery is an important determinant for reducing the risk of infant and maternal death. Institutional delivery is seen as one of the important intervention for emergency obstetric care.

2.5: Assistance during Delivery

Assistance during pregnancy specifically indicates towards professional assistance. This is considered as an important component in the reproductive health care services. It can reduce the risk of obstructed labour during delivery.

2.6: UTILIZATION OF MATERNAL HEALTH CARE IN JAMMU AND KASHMIR

Figure 2.1



2.7: Socio-economic factors

Thus factors can be at the individual level, household level or community level. But in the present study most of the factors considered are of individual level. These socio-economic characteristics include the type of residence (rural and urban), religion, caste of women, and educational level of women, husband's education, working status of the women, household standard of living and women's exposure to mass media. Among the demographic factors age of the mother and birth order are the important factors. Apart from those, three factors are related to the obstetrical need like – previous pregnancy wastage, any complication during the pregnancy, while some of the factors affect the utilization of maternal health care directly whereas some factors indirectly affect it.

Type of place of residence

The type of place of residence determines the availability, accessibility and awareness of the maternal and child health care services. The physical access to health delivery is not the major concern for the urban population. Most of the health care facilities are located in the urban population. Moreover, the external environment of the urban areas, the knowledge and awareness level and also the interaction with each other and the sharing of the information about the health care facilities is also more in urban areas. Thus the utilization is more in the urban areas.

Religion

In India the important religion communities are- Hindu, Muslim, Christians, Sikhs, Buddhist and Jain. The religion is also an important social factor to influence the utilization pattern of maternal and child health care services. Different religious communities have different norms and beliefs regarding marriage, childbearing and family planning which have the effect on the maternal and child health seeking behaviour.

Caste

Caste is closely tied to the social system in India. The schedule caste, scheduled tribe, indigenous population with few exceptions is very poor and inhabit in inaccessible rural and hilly areas where they don't have easy access to health care services. They are denied the access to many of the services by considering their social category. Caste identity may also be associated with health beliefs on what care is sought and whether that care is traditional or biomedical. These traditional beliefs affect the beliefs about illness causation, superstitions about illness and the care of illness. The lower utilization of maternal and child health care by the above mentioned unprivileged and backward groups of society can be attributed because of their lower socio-economic conditions.

Women's educational level

Higher education is believed to be associated with increased use of maternal and child health care during pregnancy and after child birth. Higher utilization of biomedical services among more educated women is believed to result in part from better allocation of financial and other resources, greater control over resources, and more autonomy in household decision making, greater self confidence and stronger demand for satisfactory services from health practices. On the other hand by creating social change along with subsequent changes produces new values and ideas which motivates to the adoption of modern health care practices.

Educational status of husband

In the existing patriarchal society, husband is the ultimate decision-maker in the family including decisions on reproductive choices and health seeking behaviour of women. Thus education of husband becomes an important factor in the analysis of reproductive health. Education of husband is responsible for adoption of maternal care services, as his knowledge about the consequences of maternal health care services is the outcome of his educational status. Husband's education also increases spousal communication and

affecting the contraceptive usage pattern. Educational status of husband has a strong positive correlation with husband's occupation and income.

Work status of women

Women who work outside her household are more exposed and better informed about the availability and usage of various family planning methods and maternal care services. Sometimes that increases her access to health care facilities. This allows her to choose the right maternal care practices, improving the reproductive health. Moreover, an employed woman economically independent has more decision making powers regarding health seeking behaviour. The attitude towards tackling health problems also changes, as she being more aware of modern techniques would avail of professional advice on health issues. However, this mainly depends on the nature of the job, i.e. those engaged in secondary and tertiary sector are better off as compared to those engaged in primary sector.

Exposure to mass media

Exposure to mass media lets the women know about various alternatives of the maternal and child health care services. It also exposes the women to the advantages of using those services and also the disadvantages of not using these. It increases the awareness about the services. Exposure to mass media also induces urban life style; values and aspirations among the women to lit their families and maintain a good health.

Age of the women

The age of the women has an important role to play regarding the use of maternal and child health care services. Younger women are open to new ideas, are generally experiencing the lower parity may be first or second pregnancy. So the utilization is higher among them. On the other hand the older women may be less inclined to seek health care because of the experience of pregnancies and child birth. But if the women are too young like the teenager women, the utilization of maternal and child health can be low. The teenager motherhood itself shows the social backwardness of getting married in

young age due to illiteracy, unawareness of the harms of young motherhood etc. Moreover young women have very little morbidity and have to depend on husbands or other family members to take them to the health centre, even if the care was free. The young women have a little say in household even regarding their health care.

Birth order

Lower birth order has the higher utilization of maternal and child health care because of the newness, uncertainty, inexperience and excitement. On the other hand higher the birth order the previous experience related to pregnancy and childbirth restricts the women to go for maternal care services. Although age and parity (number of birth per women) are closely correlated, higher parity appears to have more of an effect on antenatal care use than age by itself.

Standard of living

Due to problems of collecting data on income of the household, standard of living index is used as a proxy variable. Standard of living index decides the reproductive behavior and also reproductive health. A couple with higher standard of living is better informed and therefore in a better position to use the health care facilities than those with a lower standard of living. However, standard of living shows a strong positive correlation with husband's occupation and hence husband's occupation is excluded from the analysis.

2.8: Sources of Data

The data sets used in this analysis are: National Family Health Survey (NFHS) 2 and 3.

NFHS-2

The NFHS-2 national sample covers more than 99 percent of India's population living in all 26 states that existed at the time of the survey. It does not cover the union territories. NFHS-2 is household sample surveys with an overall sample size of 90,303 ever-married women in the age group 15–49 living in 92,486 households. In Jammu and Kashmir

interviews were conducted with a state representative sample of 2,939 women in the age group 15-49 from 2786 household in 1999.

NFHS-3

Data for the National Family Health Survey 3 (NFHS-3) were conducted during 2005-06 and is used for the present analysis. The survey provides information on fertility, the practice of family planning, infant and child mortality, maternal and child health and utilization of health services provided to mothers and children. In addition, it provides indicators of the quality of health and family welfare services, reproductive health problems, status of women and domestic violence. Men participation in reproductive health is also available in the survey. The survey follows a multi-stage sampling design to select the eligible women for the interview. The research finding of the present work is based on a nationally representative sample of 124385 ever-married women in the age group 15-49 years. NFHS-3 collected information from a nationally representative sample of 109,041 households, 124,385 women age 15-49, and 74,369 men age 15-54. The NFHS-3 sample covers 99 percent of India's population living in all 29 states. In Jammu and Kashmir, the survey is based on sample of 2,415 household that is representative at the state level and within state at the urban and rural levels. NFHS-3 interviewed 3,281 women age 15-49 and 1,076 men age 15-54 to obtain information on population, health and nutrition in the state. For trends analysis NFHS-2 (1998-99) and NFHS-3 (2005-06) surveys are also taken here. Reproductive health indicators are more or less same through the two phases.

2.9: Definition of the variables included in the analyses

Variables	Definition
DEPENDENT VARIABLES	
Received at least antenatal care (not recommended)	
0	Mother who are not received at least one dose of all ANC
1	Mother who received at least one dose of all ANC
Received recommended antenatal care	
0	Mother do not received at least three ANC visits, two or more TT injection and consumption of IFA tablets for 90 or more days
1	Mother received at least three ANC visits, two or more TT injection and consumption of IFA tablets for 90 or more days
Place of delivery	
0	Mother do not deliver in a medical institution
1	Mother deliver in a medical institution
Received Professional Assistance at delivery	
0	Mother do not received assistance of a doctor, ANM/-nurse/midwife/LHV and other health professional during delivery
1	Mother received assistance of a doctor, ANM/-nurse/midwife/LHV and other health professional during delivery
INDEPENDENT VARIABLES	
Religion	
0	Women belong to Hindu religion
1	Women belong to Muslim religion
Birth order	
1	First birth
2-3	2^{nd} and 3^{rd} birth
4^{th} or more	Fourth or more birth order
Women working status	
0	Working
1	Not working
Partner education	
1	No education
2	Primary education
3	Secondary education
4	High education
Mother Age (in years)	
1	<20 years
2	20-34 years age group
3	35-49 years age group
Media-exposure	
0	Women, who are not exposed to T.V, Radio and Newspaper
1	Women, who are exposed to T.V, Radio and Newspaper
Caste	
SC	Women belong to scheduled caste
ST	Women belong to scheduled tribe
OBC	Women belong to OBC
OTHERS	Women belong to high caste
Standard of living	
low	Women with low standard of living
Medium	Women with medium standard of living
High	Women with low standard of living
Place of residence	
Urban	Mother living in urban areas
Rural	Mother living in rural areas
Women's education	
No Education	Women with no education
Primary education	Women with primary education
Secondary education	Women with secondary education
High education	Women with high education

2.10: Methodology

The following quantitative research methods have used for this study.

Bivariate Analysis

A bivariate analysis is used in this work to find out the linkages between maternal health care utilization indicators and socio-economic, demographic characteristics. It is also used to show the relationship between antenatal care and safe delivery.

Logistic Regression:

Logistic regression is more appropriate technique to analyze the relationship between a set of variables and dependent variables which is dichotomous. The predictor variables may be either categorical or in interval scale. Though ordinary regression approach can be adopted to analyze such dependent variables, the assumption of linearity in the relationship between it and predictors and dependent variables are likely to be violated. To overcome this problem it is assumed that probability of occurrence of an event P is related to the independent variables(x) in the form of logistic function instead of a linear function. Then assume that:

$P = 1/(1+e^{-(a+bx)})$----------I

Where a and b are constant that are fitted to the data. It can be obtained from the above equation that,

$1-P = 1/(1+e^{(a+bx)})$----------II

From equation I and II, we can get that,

$(P/1-P) = e^{(a+bx)}$ ----------III

Taking the natural logarithms (base e) on both side of the equation 3, we obtain

$\text{Log}\ (P/1-P) = 1+bx$----------IV

The quantity [(P/1-P)] is called the odds and the quantity log [(P/1-P)] is called log odds or logit of P. In a logistic regression we assume the logarithm of the odds is linear function of independent variables. In case we have k independent variables x_1, x_2----------x_k, the relationship can be obtained

$\text{Log}\ [(P/1-P)] = a+b_1x_1+b_2x_2+$----------$+ b_kx_k$

In case of logistic regression the coefficient is estimated using maximum likelihood.

CHAPTER-III

UTILIZATION OF ANTENATAL CARE AND INSTITUTIONAL DELIVERY IN JAMMU AND KASHMIR

Utilization of Antenatal Care and Institutional Deliveries in Jammu and Kashmir

3.1: INTRODUCTION: Antenatal care (ANC) refers to pregnancy-related care, which is usually provided by doctor, an ANM, or by any health professional. Ideally, antenatal care should monitor a pregnancy for signs of complications, detects and treat pre-existing and concurrent problems of pregnancy and provide delivery care, and related issues. Antenatal care is named as one of the four pillar of the safe motherhood initiative. All pregnant women should receive antenatal care as it helps to reduce maternal morbidity and mortality as it includes important dietary advice and the provision of iron and folic acid tablets to pregnant women. Moreover antenatal care along with improved nutritional status can reduce the incidence of low birth weight babies, perinatal, neonatal and infant mortality. Antenatal care consists of various components. Which are:-

- First antenatal care check-up: a woman should receive her first pregnancy related check-up within three months of the pregnancy confirmation.
- Antenatal care during pregnancy: a women should receive at least three pregnancy related check up provided by a doctor or a health worker in a health facility or at home.
- Iron and folic acid tablets: a women should have had the required number of iron and folic acid tablets during the pregnancy period.
- Received tetanus toxoid vaccine: often infection is the cause of prenatal and neonatal mortality. Therefore to prevent pregnant women from such infection she should be given tetanus toxoid (TT) injection.
- Doses of Tetanus toxoid (TT): a woman should receive two doses of tetanus toxoid injection during the period of pregnancy.

Place of Delivery

The place of delivery is an important determinant for reducing the risk of infant and maternal death. Institutional delivery is seen as one of the important intervention for emergency obstetric care.

Assistance during Delivery

Assistance during pregnancy specifically indicates towards professional assistance. This is considered as an important component in the reproductive health care services. It can reduce the risk of obstructed labour during delivery.

The present chapter analyses the utilization of maternal health care services in terms of ANC, Institutional delivery and Professional assistance during delivery care. All the three components are analyzed based on both NFHS-2 and NFHS-3 data. For explaining the status of these three health indicators in Jammu & Kashmir and India, NFHS-3 is used. Thus, the chapter will comprehensively show the situation over the five year period. However, data collected during NFHS-2 and NFHS-3 are not strictly comparable as NFHS-2 refers to births during the last three years and NFHS-3 refers to the births during last five years. To make the data comparable both, the information is brought into common denominator, using a filter for births during last three years and for last birth only. Present chapter also analyze ANC (not recommended) using NFHS-3 for Jammu and Kashmir. The chapter will also discuss the pattern of male involvement in maternal health care, reasons for not availing maternal health services and decision making on maternal health care by using NFHS-3 data. The chapter is divided into two sections. First section analyzes the status of antenatal care and second section analyzes status of Institutional deliveries and professional assistance during delivery.

SECTION-I

3. I.2: Utilization of Antenatal Care services by Sources in Jammu and Kashmir and India

Table No 3.I.1 shows the availability of ANC from different sources. In Jammu and Kashmir, 9.5 percent of pregnant women received ANC at home as compare to 19.5 percent for India. 62 percent of women received ANC from Govt. health institutes as compare to 51 percent for India, but the proportion was lower from private institute i.e. 35 percent for J&K as compare to 42.5 percent for India. This shows that, government institutes are better performing in Jammu and Kashmir. Moreover, the state couldn't attract private health sector much. As we compare availability of ANC between India and J&K by religion. We find a sharp contrast, majority of Hindu women received ANC at home as compare to 29.6 percent for Muslim women in J&K, while it is about 86.2 percent for Hindu and 13.8 percent for Muslim women respectively in India. This shows that, Hindu women are in poor condition in availing ANC as compared to the Muslim women in Jammu and Kashmir. Nearly three- fourth of Muslim women receive ANC from govt. sources as compared to one-fourth for Hindus, but when we compare to India 84.4 percent of Hindu women receiving ANC from Govt. medical facilities as compared 15.6 percent Muslim women receiving ANC from Govt. facilities. This shows that, Muslim women avail lesser Govt. health facilities in India as compared to Jammu and Kashmir.

Table No 3.I.1: Utilization of Antenatal Care by sources in Jammu & Kashmir and India

Places	J&K	India	J&K		India	
			Hindus	Muslim	Hindus	Muslim
Home	9.5	19.5	70.4	29.6	86.2	13.8
Govt.	62.2	51.1	26.3	73.7	84.4	15.6
Pvt.	35	42.5	33.8	66.2	82.6	17.4

Source: Computed from child file;
Note: Percentage of births in the five years (NFHS-3)

Table No 3.I.2: Percentage of Women who Received Recommended Doses of ANC by Background characteristics in Jammu and Kashmir and India

Background characteristics	Percentage of Women who received all Recommended doses of ANC	
	J&K	India
Religion		
Hindus	22.4	14.5
Muslims	15.6	10.9
Birth order		
1	31.4	22.4
2-3	18.2	16
4+	7.4	3.9
Occupation		
Not working	17	16.5
working	20.6	10.5
Partner Education		
No education	8.5	4.8
Primary	14.8	9.3
Secondary	17.4	16.9
High	46.8	34.5
Age		
<20	6.7	9.8
20-34	17.6	15.3
35-49	23.5	8.2
Media Exposure		
Not Exposed	5.3	4.3
Exposed	21	18.8
Caste		
SC	12	9.4
ST	13.1	7.8
OBC	13.7	14.4
OTHERS	20.9	19.7
Standard of living		
Low	10.7	8.1
Medium	11.2	9.4
High	29.1	27.1
Place of Residence		
Urban	26.8	25.4
Rural	15.9	10.3
Women Education		
No. Edu.	11	4.3
Primary	8.8	11.7
Secondary	22.9	24
High	60.8	48.1
Total	**18.2**	**14.2**

Note: Percentage of births in the five years (NFHS-3)

3. I.3: Percentage of Women received Antenatal Care (Recommended) in Jammu and Kashmir and India

It is generally believed that Muslim women are less able to use formal care because of restrictions placed on their freedom of movement and overall lower autonomy (Chakrabarti, 2007). Though Jammu & Kashmir is a better performing state, yet small percent of Muslim women receive full doses of ANC. In Jammu and Kashmir, 15.6 percent Muslims women received ANC as compared to 10.9 percent of India. In comparison to Hindus, Muslims women have received less antenatal care in Jammu and Kashmir which is same the case with India. If we analyses the condition of Jammu & Kashmir and India, women of Jammu and Kashmir are in much better condition in terms of their maternal care. Among other factors, child birth order also has strong effects on the likelihood of receiving antenatal care as well as institutional deliveries (Sugathan et al, 2001). Same holds true for India and Jammu and Kashmir, where with the increase in birth order antenatal care service decreases. However in this case also, women in Jammu & Kashmir are in better position as compared to country as a whole.

Non-earning working women were less likely to use maternal health care services compared to earning women in Andhra Pradesh (TT vaccine), Karnataka (antenatal check up) and Tamil Nadu (TT vaccine). Finding suggests that earning capacity could contribute to the use of maternal health care services by empowering women inside and outside the household (Mencher, 1988). It is also possible that earning women have greater exposure to accessing relevant information and knowledge regarding issues related to maternal and child health. It was also found that non-working woman's likelihood of seeking some maternal health care services was higher than among earning women in Andhra Pradesh (delivery assistance) and Tamil Nadu (antenatal care and institutional delivery). This shows that women's work does not necessarily influence the utilization of some maternal health care services. It is possible that those not working are relatively well off compared to those working. Further, women's work in the developing countries is largely poverty induced and is likely to have a negative impact on the utilization of maternal health care services (Desai and Jain, 1994). Various literatures showed a positive relation between working status of women and health (Ray et al.

1984). In Jammu and Kashmir, nearly 21 percent women who are working received full antenatal care while 17 percent of non-working received full antenatal care. In case of India, only about 11 percent of working women received full antenatal care services.

Education enhances the information and knowledge on health. In both Jammu and Kashmir and India, as the education level of spouse increases, their wives have better chances of receiving full antenatal care. Women's husband, those have no education at all only 8.5 percent of them received ANC. This figure is even lower (4.8) for country as a whole and 4.8 percent of full antenatal care services while those have higher education received higher number of antenatal care services in J&K and India. Mother's age has also a strong positive effect on the use of antenatal care and delivery in a medical institution (Sugathan et al, 2001). In Jammu & Kashmir, only 6.7 percent of women with age less than 20 years received antenatal care as compared to 9.8 percent of India. In the age group 20-34, 17.6 and 15.3 percent women in Jammu and Kashmir and India respectively received antenatal care. But it decreases with age in case of India while it increases with age in Jammu and Kashmir. The reason may be due to late marriages in Jammu and Kashmir. Mondol (1997) while studying utilization of antenatal care services in Rajasthan using NFHS data showed women's exposure to mass media as an important predictor variable affecting the rate of utilization of antenatal care services. Women who exposed to any source of mass media be it newspaper, radio or TV have better chances of availing antenatal care services. In Jammu & Kashmir and India respectively, 21 percent and 18.8 percent of women who are exposed to mass media received antenatal care. Again women of J&K are more exposed to mass media and receiving more antenatal care services as compared to country as a whole.

Many studies have shown that caste plays an important role in the utilization of antenatal care services, SC/ST are particularly at a disadvantageous position, especially in utilizing antenatal care as compared to other caste (Dommaraju et al, 2008). In J&K, 12 percent SC women received ANC services as compares to 9.4 percent in India. Among the ST's, J&K women are of better standing than ST women of India. 13.7 percent of OBC women received ANC in Jammu and Kashmir as compared to 14.4 percent OBC women in India. About 20 percent woman of higher caste received antenatal care services in Jammu &

Kashmir and India. Low status of women is pervasive, and in India acts as an important variable affecting the utilization of health care services (Arnold et al 1998). As standard of living improves, utilization of ANC health care services increases for both J&K and India as a whole. Nearly about 11 percent of women with low standard of living in J&K received ANC health care while it was only about 8 percent in India. 11.2 percent and 9.4 percent women with medium standard of living utilized ANC respectively in Jammu & Kashmir and India. Women with high SLI received 29.1 percent and 27.1 percent respectively in J&K and India. It is observed that for both J&K and for India the improvement in utilization of ANC is very less from medium SLI to medium SLI. However, it improves substantially for higher SLI group of women.

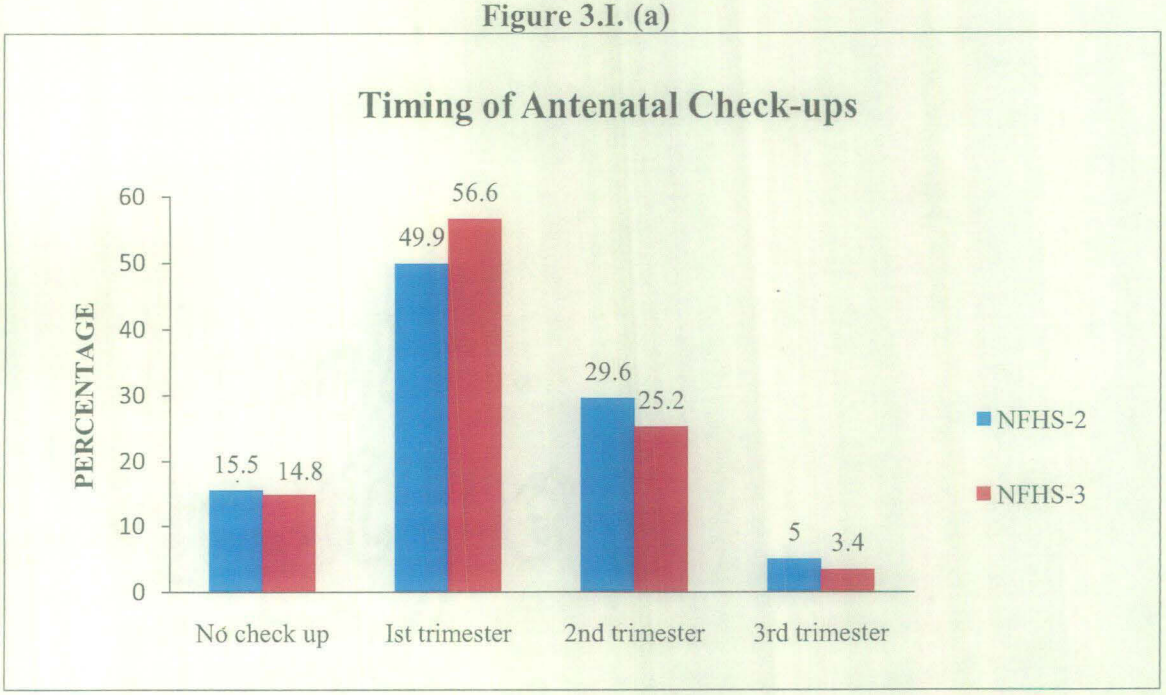
Place of residence play an important role in determining health care utilization. It is expected that urban areas are better served with the health facilities and people are aware about health. From many studies, it has been observed that women who are living in urban areas have better maternal health care services than those living in rural areas. Singhal (1992) observed that the place of residence causes the rise of antenatal care services. Women living in urban areas are likely to opt for antenatal care services and institutional deliveries (Ray 1984; Kanitkar and Sinha 1989; Elo 1992). It is found in the analyses, 26.8 percent and 25.4 percent of women who are living in urban areas received ANC services in J&K and India. The reason may be, urban women are economically well off and urban areas have better health care centers.

Education of the mothers is an important social variables that have positive bearing on utilization of maternal and child health services. Higher level of maternal education results in improved child survival because health services that effectively prevent fatal childhood diseases are used to a greater extent by mothers with more education than by those with little or no education (Govindswamy 1994). 11 percent and 4.3 percent women with no education received ANC in Jammu & Kashmir and India respectively. But as the level of women education increases, their utilization of ANC also increases. Nearly about 61 percent and 48.1 percent women with higher education received ANC in Jammu and Kashmir and India respectively. Again women of Jammu and Kashmir are in better position than women of India.

3. I.4: Timing of Antenatal Care

Studies conducted on the timing of the initial antenatal check-up, show that even when antenatal care is initiated as late as the third trimester, there is a substantial reduction in perinatal mortality (Ramachandran, 1992). The first antenatal check-up should take place, latest during the second trimester of pregnancy. Figure 3.1. (a) shows that, in case of Jammu and Kashmir, 56.6 percent of mothers who had a live birth in three years preceding the surveys received their first antenatal check-up in the first trimester of pregnancy during NFHS-3 as compare to 49.9 percent in NFHS-2. There is growing trend in this regard. Women are more conscious about their health during pregnancy. Exposure to mass media, education may be pivotal role in this regard. Another 25.2 and 29.6 percent received their first antenatal check-up in the 2nd trimester of pregnancy. For the state as a whole, the women received first check-up during their third trimester which has been reduced from 5 percent in NFHS-2 to 3.4 percent in NFHS-3. The result shows that efforts should be made so that more and more women should receive first antenatal check-ups in first trimester. The antenatal checkups are necessary as early as possible.

Figure 3.I. (a)

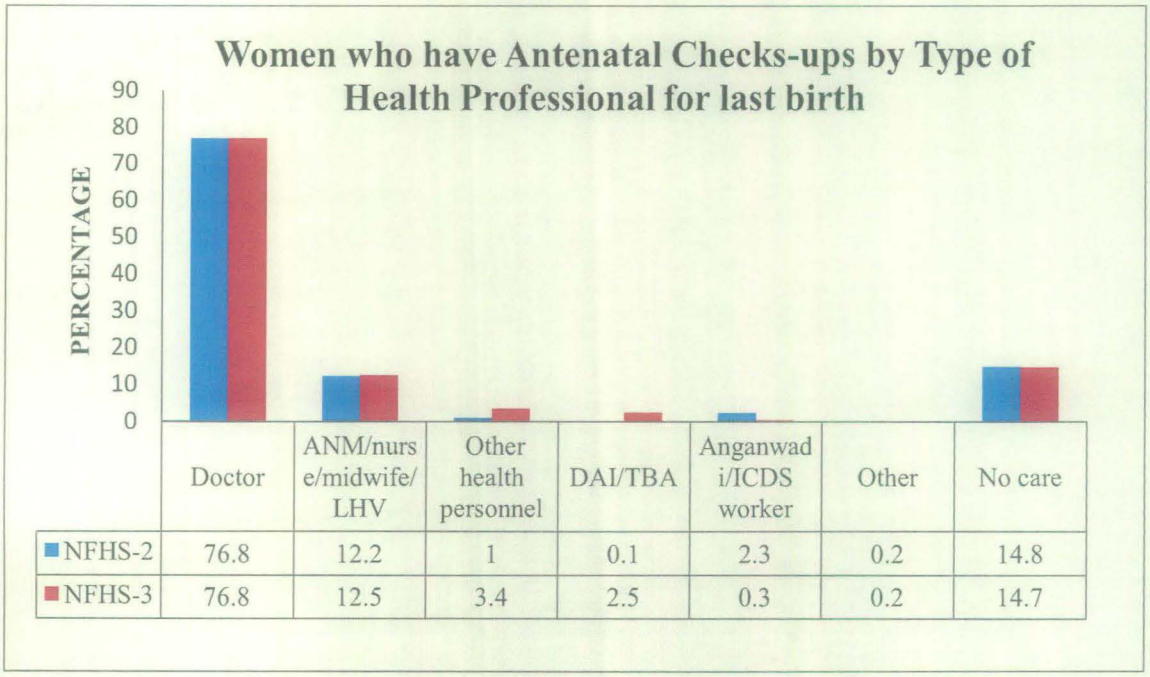


Source: - Computed from child file
Note: - Percentage of last birth in the past three years, (NFHS-2 and NFHS-3).

3. I.5: Antenatal checks-ups by type of health Professional

The figure below shows that, from NFHS-2 to NFHS-3, there is no significant change in ANC check-ups provided by the health professional to pregnant women in Jammu and Kashmir. While assistance received from health professionals namely, ANM/nurse/ midwife/LHV remain almost the same over five year period, only marginal increase is observed in the assistance of other health professional and Dai/TBA. Interestingly, proportion who never received any care remained almost same (15 percent) between NFHS-2 and NFHS-3.

Figure 3.I.(b)



	Doctor	ANM/nurse/midwife/ LHV	Other health personnel	DAI/TBA	Anganwadi/ICDS worker	Other	No care
NFHS-2	76.8	12.2	1	0.1	2.3	0.2	14.8
NFHS-3	76.8	12.5	3.4	2.5	0.3	0.2	14.7

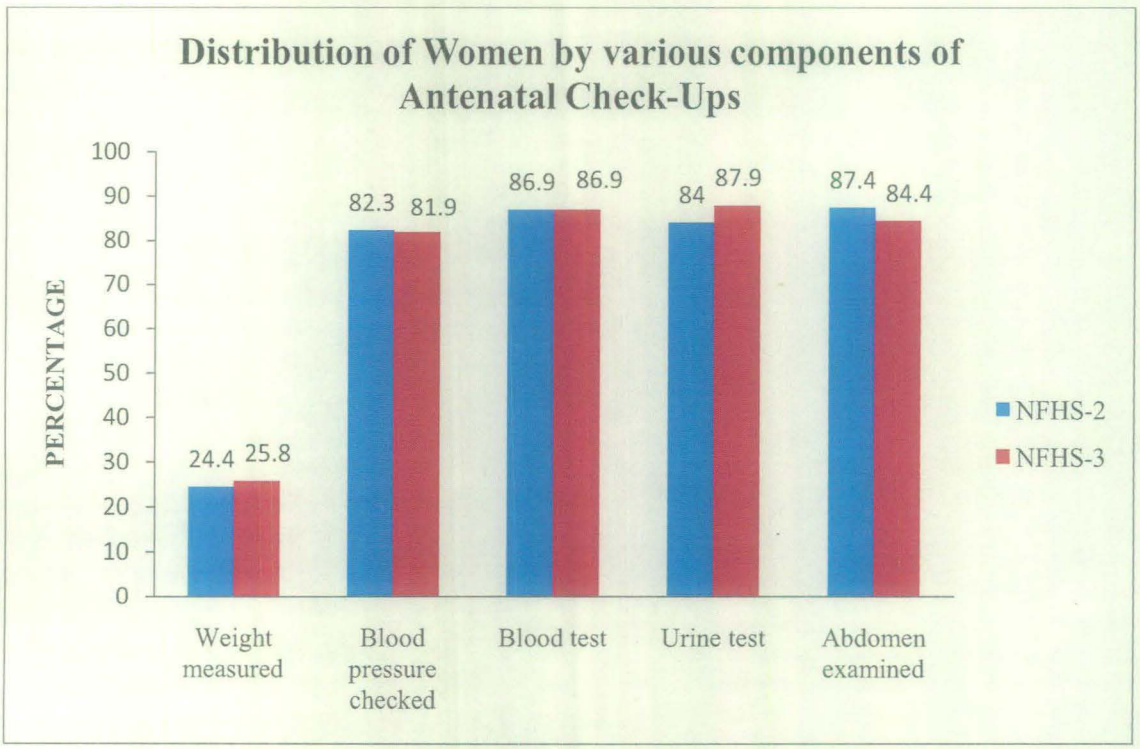
Source: Computed from child file
Note: - Percentage of last birth in the past three years, (NFHS-2 and NFHS-3).

3. I.6: Antenatal Checks-ups by various components

The effectiveness of antenatal check-ups in ensuring safe motherhood depends in part on the tests and measurement done during check-ups. NFHS collected information on this important aspect of antenatal care by asking mothers who received antenatal check-ups whether they received each component of antenatal check-ups at least once during any of

their checks-ups during pregnancy. Present analyses confine to the most recent birth during the three years preceding the survey (NFHS-2 and NFHS-3) for which antenatal check-ups were received. Figure 3.I. (c) shows, for most recent births for which mothers received antenatal check-ups, mothers had an abdominal examination in 87 percent of cases in NFHS-2, which declined to 84 percent during NFHS-3 and had their blood tested in nearly 87 percent cases for both the surveys. Other component of antennal check-ups like urine tests, weight measured and blood pressure checks were almost remained the same. In both survey, blood pressure, urine tests, blood test and abdomen examination are most common measurement of antenatal care during pregnancy.

Figure 3.I. (c)



Source: Computed from child file
Note: - Percentage of last birth in the past three years, (NFHS-2 and NFHS-3).

Table No 3.I.3: Trends of Antenatal Care (Recommended) Utilization in Jammu and Kashmir, NFHS-2 to NFHS-3.

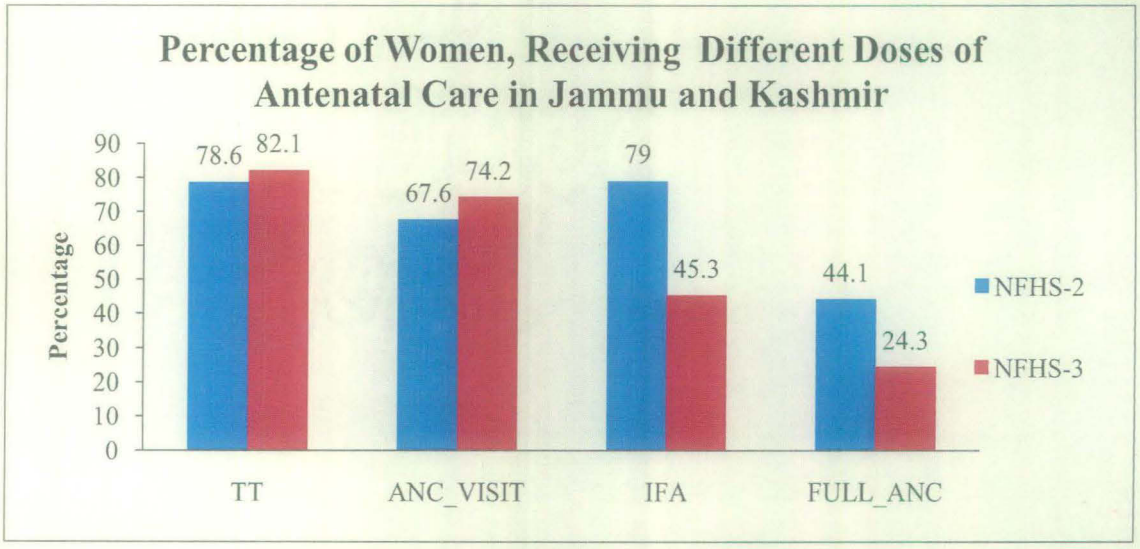
Background characteristics	Percentage of Women who Received all Recommended types of antenatal care	
	NFHS-2	NFHS-3
Religion		
Hindus	37.8	25.1
Muslims	47.3	24
Birth order		
1	59.4	34.9
2-3	44.4	24
4+	32.7	13
Occupation		
Not working	45	23.7
working	42.9	25.8
Partner Education		
No education	29	8.2
Primary	39.8	25.5
Secondary	47.9	24.9
High	69.2	56.9
Age		
<20	53.3	9.1
20-34	44.2	24.1
35-49	38.9	31.7
Media Exposure		
Not Exposed	26.3	7
Exposed	51.7	28.5
Caste		
SC	31.9	11.5
ST	36.1	12.3
OBC	34.1	16.7
OTHERS	48.4	32.9
Standard of living		
Low	20.3	4.5
Medium	40.7	16.7
High	68	32.5
Place of Residence		
Urban	58.7	34.3
Rural	41.4	21.6
Women Education		
No. Edu.	36.1	15.3
Primary	41.3	20.7
Secondary	57.8	28.9
High	77.9	74.4

Note: - Percentage of last birth in the past three years, (NFHS-2 and NFHS-3).

3. I.7: Percentage of Antenatal Care (Recommended) in Jammu and Kashmir

Antenatal care (ANC) refers to pregnancy-related health care provided by a doctor or a health worker in a medical facility or at home. The Safe Motherhood Initiative proclaims that all pregnant women must receive basic, professional antenatal care (Harrison, 1990). Ideally, antenatal care should monitor a pregnancy for signs of complications, detect and treat pre-existing and concurrent problems of pregnancy, and provide advice and counseling on preventive care, diet during pregnancy, delivery care, postnatal care, and related issues.

Figure 3.I. (d)



Note: - Percentage of last birth in the past three years, (NFHS-2 and NFHS-3).
Source: - Computed from child file

In India, an important cause of death in infancy is neonatal tetanus, which is caused to newborn infants becoming infected by tetanus organisms, usually at the umbilical stump. Neonatal tetanus is most common among children who are delivered in unhygienic environments and when unsterilized instruments are used to cut the umbilical cord. Tetanus typically develops during the first or second week of life and is fatal in 70–90 percent of cases (Foster, 1984). If neonatal tetanus infection occurs where expert medical help is not available, as is common in many rural areas in India, death is almost certain. Neonatal tetanus, however, is a preventable disease. Two doses of tetanus toxoid vaccine given one month apart during early pregnancy are nearly 100 percent effective in

preventing tetanus among both newborn infants and their mothers. Immunity against tetanus is transferred to the foetus through the placenta when the mother is vaccinated. In Jammu and Kashmir, 78.6 percent of women receiving tetanus toxoid injection during pregnancy in NFHS-2 have increased to 82.1 percent in NFHS-3. This clearly shows that, there is positive increase of 3.5 percent, but it is not considered as satisfactory increase. The Reproductive and Child Health Programme includes the provision of at least three antenatal care visits for pregnant women. Guidelines for the programme require that each pregnancy be registered in the first 12–16 weeks (Ministry of Health and Family Welfare, 1997). In Jammu and Kashmir, mothers of 67.6 percent of births received at least three antenatal check-ups during NFHS-2, which increased to 74.2 percent in NFHS-3. This is a positive increase of 6.6 percent from NFHS-2 to NFHS-3. Overall, about one-third of newborn children in India are of low birth weight, indicating that many pregnant women in India suffer from nutritional deficiencies. Improvement in a woman's nutritional status, coupled with proper health care during pregnancy, can substantially increase her child's birth weight (Ramachandran, 1992). For last birth during the three years preceding the survey, NFHS-2 and NFHS-3, there is decline in receiving IFA tablets or syrup for three or more month. During NFHS-2, 79 percent of pregnant women were receiving IFA tablets for three or more month, which declined to 45.3 percent in NFHS-3.which shows anti-anemia drive has deteriorated during this period. As far as recommended antenatal care is concerned, declining trend has been observed from NFHS-2 to NFHS-3, which is due to lack of anti-anemia drive. In India, according to NFHS-3 report, all the pregnant women for their live birth get less recommended antenatal care as compare to NFHS-2 for all states except Kerala. In Jammu and Kashmir, the declining trend in terms of recommended types of antenatal care is observed. In NFHS-3, women belong to both religion receive less proportion of recommended types of antenatal care as compare to NFHS-2. But the Number gap between women belong to both religion has been reduced during NFHS-3. Moreover from table no. 3.I.3, we also have seen that, there is general declining trend in all other socio-economic variables. The reason may be, despite improvements in health sectors, at least half of women did not receive appropriate care for their most recent birth. Thus, renewed efforts are required to ensure that women are provided with recommended antenatal care.

Table No 3.I.4: Number of Women, who received all types of Antenatal Care (Not Recommended) in Jammu and Kashmir, NFHS-3, 2005-06

Background characteristics	Number who Received all types of ANC (Not Recommended)	
	Percentage	Frequency
Religion		
Hindus	74.1	224
Muslims	75.3	441
Birth order		
1	90.7	151
2-3	77.6	344
4+	56.2	176
Occupation		
Not working	71	435
Working	82.5	234
Partner Education		
No education	51.2	162
Primary	81.4	59
Secondary	79.7	369
High	98.7	77
Age		
<20	66.7	15
20-34	76.9	562
35-49	65.6	93
Media Exposure		
Not Exposed	44.8	125
Exposed	82	545
Caste		
SC	65.4	78
ST	51.2	82
OBC	66.2	68
OTHERS	82.4	443
Standard of living		
Low	63.6	132
Medium	64	236
High	90.9	253
Place of Residence		
Urban	90.6	138
Rural	71	531
Women Education		
No. Edu.	61.3	344
Primary	78.1	64
Secondary	90.5	211
High	100	51
Total	**75.0**	**670**

Note: -Percentage of births in the five years (NFHS-3)

3. I.8: Percentage of ANC (Not Recommended) in Jammu and Kashmir

Among all religious groups Muslims in Madhya Parades were the most likely to access antenatal care through visit to a health facility. In UP, on the other hand, Muslims and Hindus were similar while members of other religions, including Sikhs, Buddhist and Christians were more likely to access antenatal care with odds of 2.3-3.2 relative to Hindus (Pallikadavath , 2004). In Jammu and Kashmir, three-fourth of pregnant Muslim women and Hindu women received all types of antenatal care. This shows that both Hindus and Muslims received same proportion of antenatal care in Jammu and Kashmir.

It is generally believed that, antenatal care would be higher for first order births and is expected to decline as order of births increases (Elo, 1992; Bhatia and Cleland, 1995). Our analyses of antenatal care also show a clear trend in Jammu and Kashmir. Women with first order births received more than 90 percent of all types of antenatal care. Women with second and third order birth received more than 77 percent of all types of antenatal care and women with four or more birth orders received 56.2 percent of antenatal care.

It is well established that educated and working mothers are more likely than uneducated and nonworking mothers to take advantage of modern health care services (Caldwell et al, 1983 and Mencher, 1988). Educated and working women are considered to have greater awareness of the existence and value of preventive health care services. Same holds true in case of working women of J&K. Women of Jammu and Kashmir, who are working are more likely to receive antenatal care than non-working women. Working women received more than eighty percent of all types of antenatal care.
From literature review, it has been proved that education level of husband influence the utilization of all types of antenatal care. As the education level of spouse increases, receiving of antenatal care increases. Women's husband with secondary and higher receiving more than seventy nine percent of all types of antenatal care in Jammu and Kashmir and husband with higher education receives nearly universal coverage in anc.

According to NFHS-III, older women are less likely to receive antenatal care in Madhya Pradesh (Samvad, 2005-06) Mother's age has a significant impact in the utilization of

antenatal care in Jammu and Kashmir. 66.7 percent women who are less than 20 years of age receiving antenatal care. More than seventy five percent women's in age group 20-34 received antenatal care, while only 65.6 percent women with age group 34-49 received all types of antenatal care in Jammu and Kashmir. Thus it is observed that both very early and late motherhood received less attention whereas births in 20-34 age groups received highest attention.

It is established that from various studies that utilization of maternity services are influenced by Exposure to mass media. Exposure to electronic media is an important source of information regarding the beneficial impact of the preventive care for maternal and child health (Retherford and Mishra, 1997). Same we find true in case of utilization of antenatal care in Jammu and Kashmir. More than eighty percent women who are exposed to mass media receive of antenatal care in Jammu and Kashmir.

Caste is another important factor, which influence the utilization of antenatal care. Study has shown that the likelihood of having received an antenatal checks-ups from a doctor, are lowest for birth to scheduled caste mothers and the highest for birth to mothers who don't belong to a scheduled caste, scheduled tribe or an others backward class(Rajasthan MDG Report, 2007). In J&K, nearly about 65 percent women belong to SC caste received of antenatal care, while only 51 percent women to ST caste received all types of ANC. Utilization of ANC by OBC women are comparable to SC women in Jammu and Kashmir. Nearly about 82.4 percent women belong to higher caste receiving antenatal care in J&K.

As standard of living increases, utilization of antenatal care services also increases. Mondol (1997) indicated that the antenatal care services differed significantly with regard to the women's standard of living and was more than five times higher among economically well off women as compared to with women belonging to the lower economic strata. Same holds true in case of Jammu and Kashmir. Here nearly about 64 percent women with low standard of living received ANC, whereas women with high standard of living receiving more than ninety percent ANC services in Jammu and Kashmir.

Urban residence increases the likelihood of ANC. The rural-urban differential in the use of maternal health care services is likely to be due to differences in the availability of maternal health care facilities including the distance to health care facilities. (Govindswamy and Ramesh, 1997; Bhatia and Cleland, 1995). Jammu and Kashmir is also not an exception. About 90 percent Women, who are living in urban areas received antenatal care, while only 71 percent rural areas receiving antenatal care services.

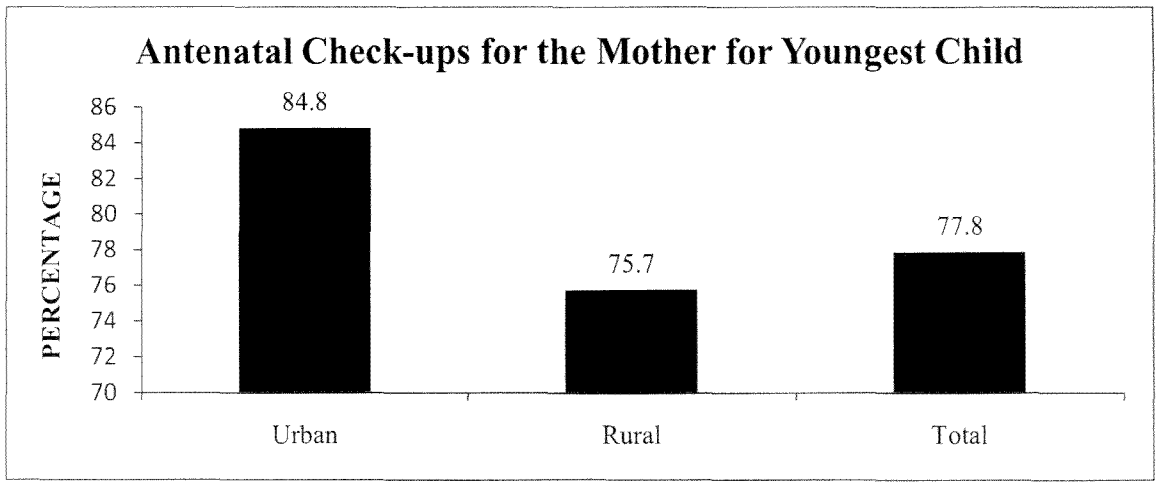
Several reasons have been put forward to explain why educated mothers use more maternal health care services than uneducated mothers in the literature. Educated women may have a greater decision making power on health related matters and also attach a higher value to the welfare and their health. Further, educated mothers will have more confidence in handling the health of the child and will have the ability and willingness to travel outside the home to seek these services (Caldwell, 1979 and Caldwell et al 1983). In Jammu and Kashmir, as the level of education increases, utilization of ANC services increases very rapidly. 78.1 Percent of Women with primary education have been received antenatal care while nearly 90 percent of women with secondary education have been received antenatal care. All women with high education received 100 percent ANC services. This shows that, level of education influence the utilization of antenatal care as educated women have more say in health related matters as well as she has a better chance of getting employment which is a step towards economic independence.

3. I.9: Man involvement in Maternal Health Care

The Indian society setting is male dominated, so characteristics of husband are very much important to analyze the maternal health care received by the women of the family. Here men take most of the decision not only for themselves but also for the women in the house. Women have very less control over the decision related to their own health. Men involvement in various health care activities is necessary to ensure a good health status in women. NFHS-3 has collected information about several aspects of men involvement in antenatal care, delivery care through the Men's questionnaire. Health workers are supposed to provide perfect information on several aspects of maternal and child health

to both 'would be mother and father'. NFHS-3 also tried to know the reason of not availing in maternal health care by their wives.

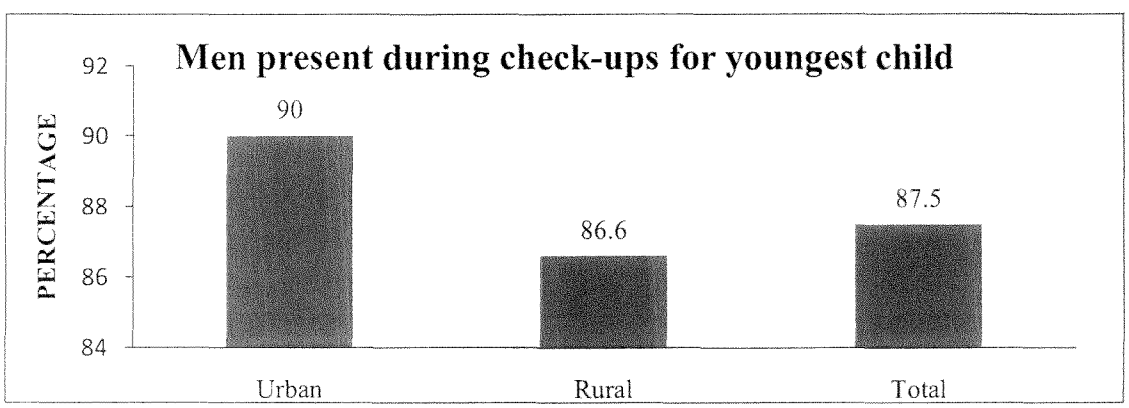
Figure 3.I. (e)



Source: - Computed from men (15-49) file. (NFHS-3)
Note: -Percentage of births in the five years (NFHS-3)

Above figure 3.I. (e) shows that nearly 78 percent of men have reported that their wives received antenatal check-ups. 84.8 percent wives received antenatal check-ups, who were living in urban areas and only 75.7 percent of rural men's wives utilized antenatal check-ups. This analyses shows that utilization is higher in urban areas than it was in rural areas. One important thing to note that while 85 percent women had reported ANC, only 78 percent men had reported that their wives had received ANC in Jammu and Kashmir.

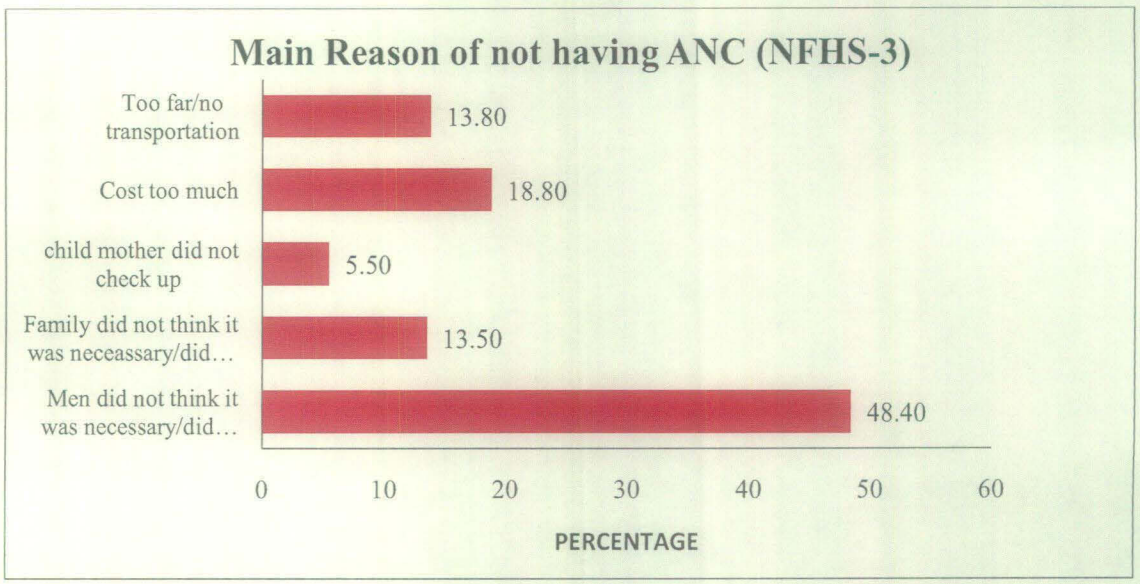
Figure3.I.(f)



Source: - Computed from men (15-49) file.
Note: -Percentage of births in the five years (NFHS-3)

In Jammu and Kashmir men, like most other states take important decisions, not only related themselves but also related to women of the house. Women have very little choice over the decision related to their own health. Involvement of men in various health care activities is necessary to ensure good health status of women. Presence of the male during ANC in Jammu and Kashmir was as high as 88 percent. As expected, it is much higher (90 percent) in urban areas than rural area (87 percent). However, the difference in male involvement during ANC between rural and urban areas was marginal.

Figure 3.I. (g)



Source: - Computed from men (15-49) file. (NFHS-3)
Note: - Percentage of births in the five years (NFHS-3)

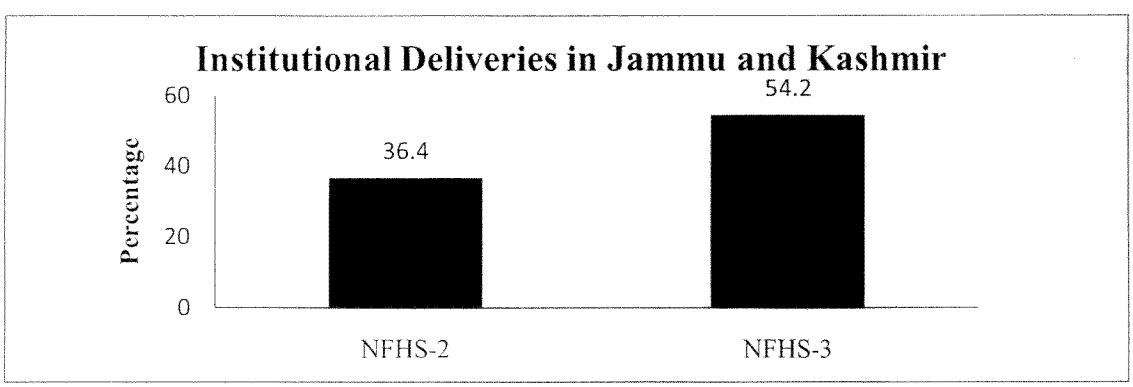
There is need to uncover the husband's point of view regarding not using ANC during pregnancy. NFHS-3 tried to catch the male opinion on not using ANC and delivery care. The figure 3.I. (g) shows that husband's unwillingness towards ANC was the main cause of not availing ANC followed by financial factor. Mother's unwillingness to have ANC was very less (5.5 percent) compared to other factors. As similar to ANC, non utilization of health facility is occurred due to the fact that husband and family did not think it is necessary. Distance and no transportation was another cause which restrict men for non utilization of ANC services for their wives.

SECTION-II

3. II.10: Place of Delivery

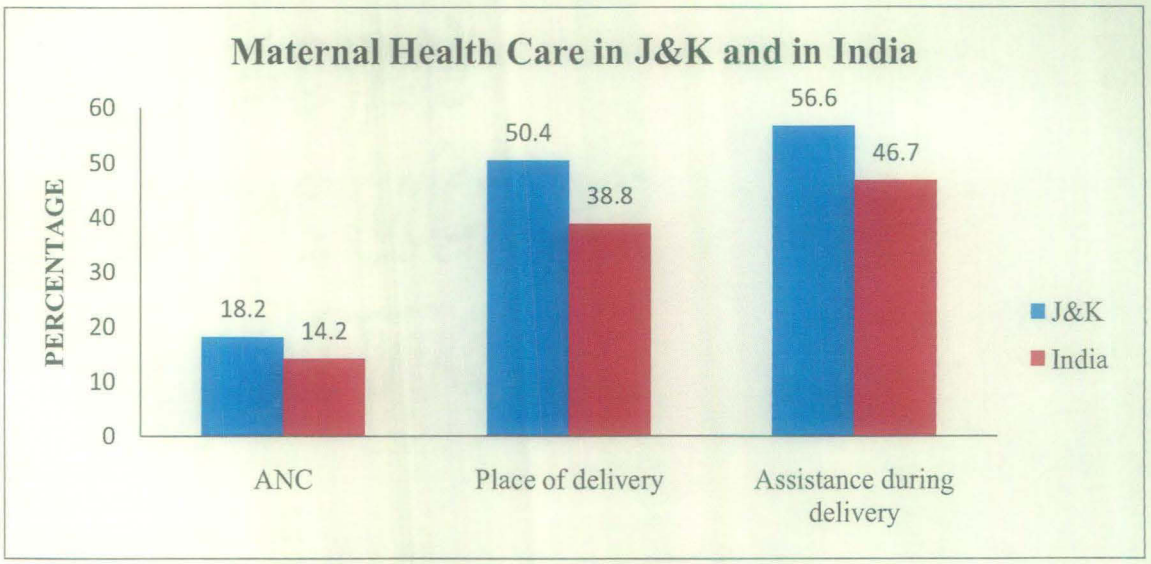
Over half a million women from the developing world die each year of causes related to pregnancy and childbirth. There are about 500 maternal deaths for every 100,000 live births, and around 10 per cent of the pregnancies are at high-risk (UNFPA, 1995). An important proximate determinant of maternal mortality is access to and use of quality health care services (Fauveau et al., 1991; McCarthy and Maine, 1992; Bhatia, 1993). Access to quality reproductive health services is also crucial for improved child survival and increased contraceptive use and consequent fertility decline in the developing countries (Ramachandran, 1989; United Nations, 1994; Phillips et al., 1998). An important thrust of the Reproductive and Child Health Programme is to encourage deliveries in proper hygienic conditions under the supervision of trained health professionals. For last birth during the three years preceding the survey, it has been observed from figure 3.II. (a), there is improvement in institutional deliveries in Jammu and Kashmir from NFHS-2 to NFHS-3 inspite of reduction in recommended antenatal care. According to NFHS-2, 36.4 percent of pregnant women deliver in any health institutions, which increased to 54.2 percent in NFHS-3; this is because of the added incentives given to the women for having an institutional delivery, in form of monetary assistance.

Figure 3.II. (a)



Source: - Computed from child file
Note: - Percentage of last birth in the past three years, (NFHS-2 and NFHS-3).

Figure 3.II. (b)



Source: -Computed from child file
Note: - Percentage of births in the past five years, (NFHS-3).

3. II.11: Maternal Health Care in Jammu and Kashmir and in India

Figure 3.II. (b) shows differentials in three maternal care indicators for births during the five years preceding the survey. These indicators together summarize the extent to which Jammu and Kashmir state and India have progressed toward achieving safe motherhood goals The first indicator is a summary antenatal care indicator which shows the percent of all live births whose mothers had all of the following: three or more antenatal care visits, two or more tetanus toxoid injections, and iron and folic acid tablets or syrup for three or more months. The next two indicators pertain to care during delivery and show the number of births delivered in medical institutions and deliveries assisted by health personnel. 18.2 percent of women in Jammu and Kashmir received recommended type of antenatal care as compare to 14.2 percent for India. Half of pregnant women delivered in any health institution in Jammu and Kashmir as compare to only about of 39 percent women of India. Out of fifty percent women who deliver in any institution, 56.6 percent received professional assistance during delivery in J&K as compare to 46.7 percent women in India. This shows that status of maternal health in Jammu and Kashmir is much better than country as a whole.

Table No 3.II. 5: Distribution of Institutional Deliveries by the background Characteristics of Women in Jammu and Kashmir and in India

Background characteristics	Percentage of Institutional Deliveries	
	J&K	India
Religion		
Hindus	46	39.3
Muslims	51.7	33.1
Birth order		
1	69.4	57.2
2-3	48.5	39.5
4+	31.1	16.5
Occupation		
Not working	48.9	45.4
working	52.9	27.6
Partner Education		
No education	29	18
Primary	43.7	31.6
Secondary	55.3	47.4
High	85.2	73.5
Age		
<20	41.9	36.4
20-34	51.3	40.4
35-49	45.6	25
Media Exposure		
Not Exposed	27.5	16.9
Exposed	56.3	49.4
Caste		
SC	33.6	33
ST	27.6	17.8
OBC	32.4	37.9
OTHERS	60.8	52.5
Standard of living		
Low	38.9	24.4
Medium	39.2	32.5
High	67.6	65.2
Place of Residence		
Urban	74.6	67.6
Rural	44.4	29
Women Education		
No. Edu.	37	18.5
Primary	41.9	37.5
Secondary	68.5	63.5
High	92.3	92.3
ANC		
NO	46.5	33.5
YES	75.2	79.5
Total	**50.4**	**38.8**

Note: - Percentage of births in the five years (NFHS-3)

3. II.12: Institutional Deliveries by background characteristics in Jammu & Kashmir and in India

Institutional deliveries are considered as the pre-condition for safe deliveries which is expected to lead towards decline in maternal death. Apart from factors related to institutional deliveries are also influenced by the back ground characteristics of the women. Different studies in India and in other countries have shown that socio-economic characteristics influenced the decision towards institutional deliveries.

Jammu and Kashmir is a state with wide variations in relief. A major part of the state is not easily accessible. Mostly Jammu & Kashmir is mountainous and access to existing medical facilities is big challenge because of poor physical accessibility. In spite of this, Jammu & Kashmir is not among the lowest ranking in terms of institutional delivery. According to NFHS-3, 52.4 percent of women deliver in any institutes as compared to 47.6 of women who have non- institutional deliveries. This shows that a substantial numbers of women of Jammu and Kashmir are still delivering at home. This also emphasis that, J&K still lacks medical facilities and these facilities are mostly available mostly in urban areas. In J&K, Muslim women delivered more in any health institution than Hindu women. While considering country as a whole more Hindu women delivered in any medical institutes than Muslim women. In J&K, 51.7 percent of Muslims women delivered in any health institutes than 33.1 percent Muslim women of India. Hindu women in Jammu & Kashmir are also in better position than Hindu women of India.

In high fertility countries it is observed that delivery care declines with the increase of birth order, this is because of repetitive pregnancies; the family including the mother develops a very casual attitude. Also many a time, high order births are unwanted and hardly receive any attention. That is why many studies show that as birth order increases, number of institutional deliveries decrease. Literature review shows that higher the number of children lowers the use of health care facilities, which could be because of socio-economic dynamics and its implications for intra-household distribution of resources. It was found that as the size of the family increased, expenditure on health decreased, more for women than it does for men, as most of the time women's health expenditure is compromised to that of men's (Dharmalingam, 2007). Same result is

observed in the comparative analyses of institutional deliveries in Jammu & Kashmir and India. 69.4 percent of Jammu & Kashmir women delivered their first birth in health institutes than 57.2 percent of women in country as a whole. But as the birth order increases, number of institutional deliveries decreases in Jammu & Kashmir as well in India as a whole.

It is well established that working women are more likely than non-working mothers to take advantage of modern health care services (Caldwell et al., 1983). Non-earning working women were less likely to use maternal health care services compared to earning women in Andhra Pradesh (TT vaccine), Karnataka (antenatal check up) and Tamil Nadu (TT vaccine). Finding suggests that earning capacity could contribute to the use of maternal health care services by empowering women inside and outside the household (Mencher, 1988). It is also possible that earning women have greater exposure in accessing relevant information and knowledge regarding issues related to maternal and child health. Nearly about 53 percent of working Jammu & Kashmir women delivered their babies in any health care institutes as compared to 27.6 percent women of India. It could be because in rest of India women are mostly engaged in primary sector and have less access to economic resources at their disposal than women Jammu and Kashmir women.

Different studies in India and abroad had shown that husband's education has significant positive impact to increase institutional deliveries. When husband has received no education, wives of J&K and India delivered in smaller number in any institutes. But as the women's husband have secondary level of education, institutional delivery increased to nearly fifty percent in J&K and India. Institutional delivery is quite high with highest level of education for both Jammu & Kashmir and for country as a whole.

Mother's age has also a strong positive effect on the use of antenatal care and delivery in a medical institution (Sugathan et al, 2001). Women in Jammu & Kashmir and India between middle age groups i.e. 20-34 have high percent of their deliveries in any medical institutes than lower and higher age group. Half of women, who are regularly, exposed to

mass media delivered in any health institutes in J&K than who are not exposed to any kind of mass media in both J&K and India.

As far as the caste structure is concerned, women from Scheduled Caste/Scheduled Tribe (SC/ST) background were found to have a significantly higher probability of delivering at home. This can be explained by the fact that the former are economically poorer and often face social discrimination. In J&K and India, nearly 33 percent of SC women delivered in any health institutes. Women belong to ST are in better position in Jammu & Kashmir (27.6 percent) than ST women of rest of India (17.8 percent). However, the study state is different when analyzed in terms of OBC women. In J&K, OBC women deliver less in institutional organization (32.4 percent) as compared to OBC women of India (37.9 percent). More than fifty percent women who belong to higher castes, delivered in Jammu and Kashmir.

Condition of living has always been a determinant of health care utilization. Studies have shown that health care utilization, especially ANC improves drastically with the improvement in standard of living (Mondol, 1997; Arnold et al, 1998). As it influences health care utilization positively, it is expected that it will influence institutional deliveries as well. Standard of living influences the number of institutional deliveries in positive direction as seen in Jammu & Kashmir and India.

It was observed that place of residence, play a significant role in ANC and institutional deliveries. Health awareness, availability and affordability of services in urban areas increase ANC and institutional deliveries in urban areas. Different studies have shown that women living in urban areas are more likely to opt for antenatal care services and institutional deliveries (Ray 1984; Kanitkar and Sinha 1989; Elo 1992; et al. 1993; Barlow and Diop 1995; Ahmed And Mosley 1997; and Regmi and Manandhar 1997). Same thing holds true in our comparative analyses of institutional deliveries in Jammu & Kashmir and India. In Jammu and Kashmir, 74.6 percent of urban women delivered in any institutions as compared to 67.6 percent in India.

Amongst the maternal attributes, education was found to have the strongest association with use of delivery facilities at time of birth. Education improves utilization by (a)

increasing awareness (b) empowering women to take decisions on her own health risks (c) increasing her ability to communicate with health personnel in an environment alien to her own world. In our comparative analyses of institutional deliveries, as the level of education of women increases, their number of institutional delivery also increases. More than 60 percent women with secondary education delivered in medical institution. More than ninety percent women with higher education delivered in any health institution. In comparative analyses, women who received full antenatal care in Jammu & Kashmir and India 75 percent of them delivered in any health intuitions. This clearly shows that, ANC have positive effect on institutional deliveries.

Table No 3.II.6: Institutional Deliveries by Background characteristics of the women in Jammu and Kashmir

Background characteristics	Percentage of Institutional Deliveries	
	NFHS-2	NFHS-3
Religion		
Hindus	27.8	50.5
Muslims	40.2	55.5
Birth order		
1	56	73.2
2-3	37.2	54.5
4+	21.2	33.5
Occupation		
Not working	39.8	52.3
working	31.5	57.7
Partner Education		
No education	23.7	32.7
Primary	34.1	48.9
Secondary	36.1	57.7
High	66.4	87.1
Age		
<20	33.3	36.4
20-34	37.1	56
35-49	31.6	44.1
Media Exposure		
Not Exposed	18	27.1
Exposed	44.3	61
Caste		
SC	21.4	35.5
ST	20	29.3
OBC	26.2	34.8
OTHERS	41.6	55.9
Standard of living		
Low	10.6	22.1
Medium	31.9	42.3
High	64.4	69.7
Place of Residence		
Urban	76.8	77.4
Rural	28.8	48
Women Education		
No. Edu.	27.5	40.7
Primary	29.4	44.8
Secondary	50.3	69.4
High	85.3	97.7
ANC		
NO	24.5	47.5
YES	51.4	75.2

Note: - Percentage of last birth in the past three years, (NFHS-2 and NFHS-3).

3. II.13: Institutional Deliveries in Jammu and Kashmir

While analyzing by background characteristics, it is observed that most of the pattern remained the same over NFHS-2 and NFHS-3. Another important thrust of the Reproductive and Child Health Programme is to encourage deliveries in proper hygienic conditions under the supervision of trained health professionals. In NFHS-3, nearly about 15 percent more Muslim women deliver in health facilities as compare to NFHS-2. As far as Hindu women are concerned, number of institutional deliveries nearly double during NFHS-3.The gap between institutional deliveries for women belong to both religions has been reduced during NFHS-3. In terms of birth order, there is decreasing trend for institutional deliveries with increase in birth order for both NFHS-2 to NFHS- 3.The reason may be, women tend to rely more on her past experience. During NFHS-2, delivery within institutional among working women was less as compare to non- working women, but this is reversed during NFHS-3. In both the surveys, spouse education has significant impact on institutional deliveries. As the level of education of husband increases, number of institutional deliveries also increases, as shown in both surveys for their wives. Percentage of institutional deliveries has increased from NFHS-2 to NFHS-3 while analyzed by in age group. In both surveys, women in age group 20-34 availed in any institution than any other age group during delivery. In NFHS-3, women are more exposed to any mass-media than NFHS-2. In NFHS-3, 61 percent women who are exposed to any mass media delivered in any institution as compared to 44.3 percent women in NFHS-2. In NFHS-3, there is substantial improvement in institutional deliveries for those women belong to scheduled caste. In terms of women belong to ST and OBC; there is improvement of 9.3 percent and 8.6 percent respectively from NFHS-2 to NFHS-3. For forward caste women there is improvement of 14.3 percent in institutional deliveries. This clearly shows that, there is improvement in institutional deliveries in different caste from NFHS-2 to NFHS-3. In both surveys, as the standard of living of women has improved, percentage of institutional deliveries also increases. As far as place of residence is concerned, there is little improvement in institutional deliveries for those women who are living in urban areas from NFHS-2 to NFHS-3. But there is substantial improvement in institutional deliveries for those women, who are

living in rural areas from NFHS-2 to NFHS-3, this is because of the increase in the facilities provided in the rural areas. This shows that, there is significant improvement in health facilities in rural areas in Jammu and Kashmir. As the women's level of education increases, their chances to deliver in any health facility also increase from NFHS-2 to NFHS-3. Most interestingly, institutional deliveries without receiving recommended antenatal care has been doubled between NFHS-2 (24.5) to NFHS-3 (47.5). On the other hand percentage of women who deliver in any health facility has increased from 51.4 percent to 75.2 percent for those women who avail all types of recommended antenatal care.

Figure 3.II. (b)

Source: - Computed from men (15-49) file. (NFHS-3)
Note: - Percentage of births in the five years (NFHS-3)

Apart from ANC, men were asked for not asked for not having institutional delivery of their youngest child. Here too, socio-economic and behavioral factor played a vital role to influence utilization patterns of delivery care. The figure 3.II.(b) shows that, most of delivery occurred at home because the husband and family members did not think it was necessary to have delivery in a health facility. Women did not think to deliver their babies in any institute was the second most important factor. Nearly about one-fifth of men thought, distance or lack of transport had restricted their wives to deliver in any health facility. Jammu and Kashmir is mostly mountainous state and population has been disbursed in far-flung mountainous areas and mode of transport has also been not developed as it should be. Economic factor is the fourth most important in non-utilization

of health care in Jammu and Kashmir. The awareness regarding health care facility is an important factor to influence health care.

Table No 3.II.7: Assistance during Delivery by background characteristics in Jammu and Kashmir and in India, NFHS-3, and 2005-06

Background characteristics	Percentage of deliveries Assisted by health personnel.	
	J&K	India
Religion		
Hindus	53.6	47.5
Muslims	57.4	38.8
Birth order		
1	74.7	65.4
2-3	54.7	47.7
4+	38.3	23.4
Occupation		
Not working	55.8	53
working	57.9	36
Partner Education		
No education	34.7	25.3
Primary	49.5	39.1
Secondary	61.6	56
High	89.8	80.3
Age		
<20	53.1	44.3
20-34	57.7	48.4
35-49	49	31.7
Media Exposure		
Not Exposed	33.3	24.4
Exposed	62.7	57.5
Caste		
SC	46.1	40.7
ST	33.6	25.4
OBC	40.1	46.7
OTHERS	65.6	59.5
Standard of living		
Low	43.2	31.5
Medium	44.9	41.2
High	73.8	73.2
Place of Residence		
Urban	80.1	73.6
Rural	50.9	37.5
Women Education		
No. Edu.	42.1	26.2
Primary	54	46.6
Secondary	75.5	71.9
High	93.8	96
Total	**56.7**	**46.7**

Note: Percentage of births in the five years (NFHS-3)

3. II.14: Professional Assistance in Jammu and Kashmir and India

Assistance during delivery is an important component in the reproductive health care services: it can reduce the risk of obstructed labour during delivery. In J&K, slightly more Muslim women received assistance during delivery than women belong to Hindu religion. It was also observed that in Jammu and Kashmir, more Muslim women were assisted during delivery. Difference between Hindu and Muslim women in assisted birth was higher for India as a whole than Jammu and Kashmir. As we observed from analyses of full antenatal and institutional deliveries, same holds true with assistance during delivery by birth order. More than 65 percent women with first birth order were assisted during their delivery both in Jammu & Kashmir and India but as soon as birth order increases percentage received for assistance during delivery decreases.

Several studies were mentioned showing that working women have greater command in their health related aspects. This is because they were more aware to latest health care and economically more dependent than women who were not working. It had positive impact on the utilization of ANC care, institutional deliveries and it also hold true in case of professional assistance during delivery in case of Jammu and Kashmir but it does not hold true in case of India. 57.9 percent of Jammu & Kashmir women get assistance during delivery as compare to 36 percent women of India. Interestingly, both the propositions related to work are observed in our study. As it was observed previously that husband's education helps improving material and delivery care. Husband's education can also help in getting medical assistance during delivery. Same seems right in case Jammu & Kashmir and India. As the level of husband's education increases, chances of receiving delivery assistance increases during delivery both in Jammu & Kashmir and in India as a whole.

The proportion of births attended by a health professionals vary with mother's age and it was lower for younger and higher age group for both Jammu & Kashmir and for India. The Number births attended by a health professional were about 57.7 percent for Jammu & Kashmir and 48.4 percent for India in the age group 20-34. As visible form table,

women are better attended by health professional in Jammu & Kashmir as compared to India.

There is a strong association between mass media exposure of women and the reproductive behavior. Modern western ideas about consumer values, control over one's life and non-familiar roles of women could be communicated through the media and influence people even in rural setting and with little education (West off and Bankole 1997). Same holds true in comparative analyses of assistance during delivery. Women who are exposed to modern means of communication and remained aware of modern health facilities were more assisted during their delivery. In Jammu & Kashmir, nearly about 63 percent pregnant women who were exposed to mass media received medical assistance during delivery as compared to 57.5 percent in India. In Jammu & Kashmir and India, SC women were more likely to get medical assistance during delivery than ST women. Both SC and ST women of Jammu & Kashmir were more likely to get assistance during delivery than women of same caste or tribe of India as a whole. 40 percent of OBC women received medical assistance than women who belong to SC (46 percent) in Jammu & Kashmir .Women who belong to OBC of J&K were less likely to receive medical assistance than women of same caste group of India. More than 60 percent Women of higher caste receive professional assistance during delivery.

Deliveries assisted by health professional in J&K is 43.2 percent while for the whole country it is 31.5 percent for women belonging to low standard of living, but for women belonging to high standard of living the value is of 73 percent for both at state level as well as country level. Births to women are more likely to be assisted by a health professional in urban areas than in rural areas. In J&K, 80.1 percent urban women were received medical assistance than 73.6 percent urban women of India. Even women who were living in rural areas of Jammu and Kashmir were more likely to be assisted by medical professional than rural women of India.

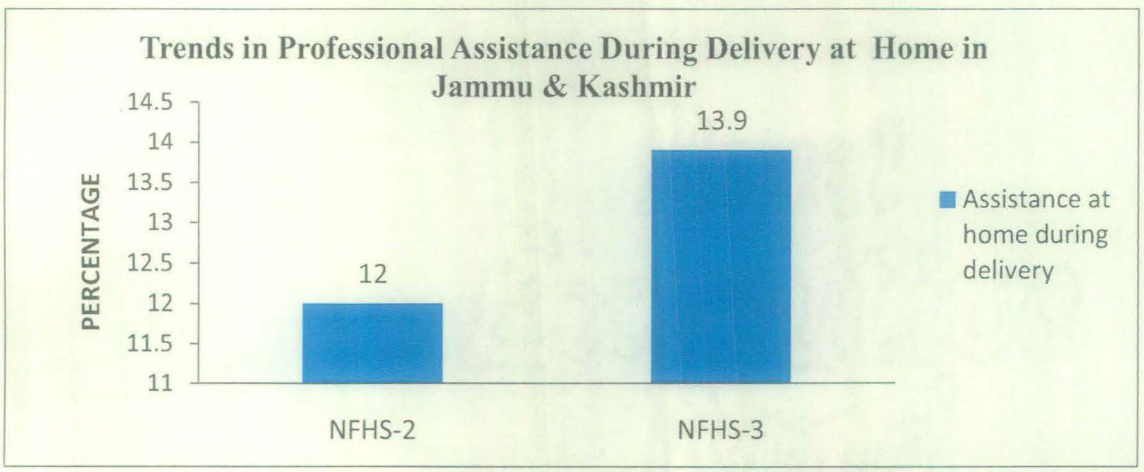
It was observed that formal education of women influences the use of maternal health-care services in Latin America. This study also shows the positive effects of maternal schooling on the use maternal care and delivery assistance (Elo, 1992). Same holds true in this comparative analyses for the assistance during delivery in Jammu & Kashmir and

India. As the level of mother's education increases, number of mother received assisted assistance by medical professional during delivery in J&K and country as a whole also increases.

3. II.15: Professional Assistance during delivery at home

Another important thrust of the Reproductive and Child Health Programmes is to encourage deliveries under proper hygienic conditions and under the supervision of trained health professional. Obstetric care from a trained provider during delivery is recognized as critical for the reduction of infant and maternal mortality. Births delivered at home are less likely than births delivered in health institution to be assisted by health professional. As in India most of deliveries take place in home, it becomes essential to evaluate the condition of delivery at home with type of assistance. Nearly all institutional deliveries are supplemented by skill professional assistance, so it is not worthy to explain in terms of professional.

Figure 3.II. (c)

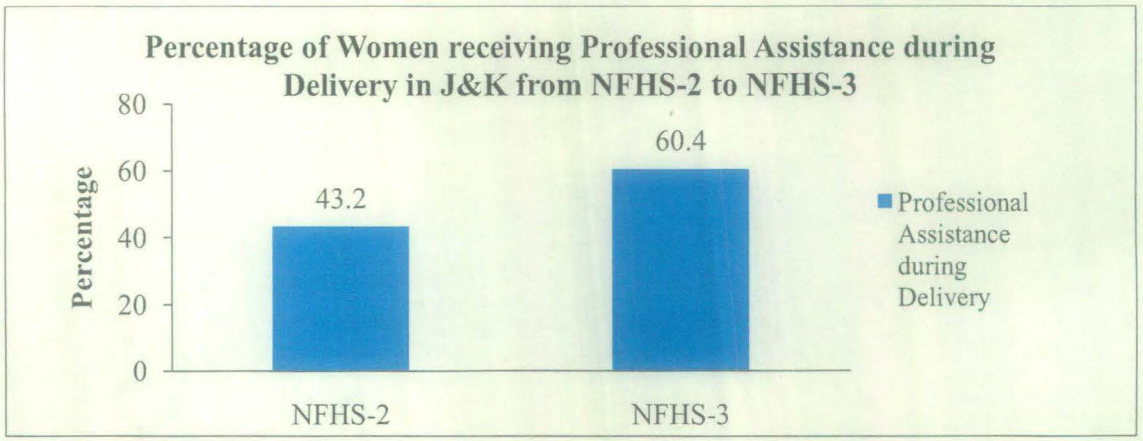


Source: - Computed from child file
Note: - Percentage of last birth in the past three years, (NFHS-2 and NFHS-3).

Figure 3.II. (c) shows that a very small number of pregnant women have been receiving professional assistance at home during delivery in Jammu and Kashmir. In this study Doctor, ANMs/LHV/Nurse/Midwife and other health professional are considered as professional assistance and most recent birth is considered for analyses in the past three years. In J&K, where most of women are living in mountainous rural areas and physical

accessibility to health centre has been a big challenge and receiving medical care during pregnancy and delivery is most important. During NFHS-2, only 12 percent of pregnant women received professional assistance at home during delivery, which has increased to nearly fourteen percent in NFHS-3. This slight improvement may not be considered as satisfactory, because inspite of this improvement, most of pregnant women are not receiving professional assistance which they need most.

Figure 3.II. (d)



Source: Computed from child file
Note: - Percentage of last birth in the past three years, (NFHS-2 and NFHS-3).

3. II.16: Assistance during delivery

Maternal and child health programs in India have been promoting availability and access to trained midwives and upgrading rural health services to include facilities for institutional delivery (MOHFW, 2005). Yet three-quarters of births in rural India continue to take place at home, most of them without the assistance of any trained health worker (IIPS and ORC Macro 2000). At the same time, both child mortality (especially neonatal mortality) and maternal mortality remain high. Seven out of every 100 children born in India die before reaching age one (Dyson et al.2004), and approximately five out of every 1,000 women who become pregnant die of causes related to pregnancy and childbirth (MOHFW 2005). India accounts for more than one-fourth of all maternal deaths from causes related to pregnancy and childbirth worldwide (WHO 2004b). Assistance during delivery is an important component in the reproductive health care; it can reduce the risk of obstructed labour during delivery. Figure 3.II. (d) shows, in Jammu and Kashmir, 43.2 percent of pregnant women received professional assistance during

their delivery in NFHS-2, but according to NFHS-3, this has improved to 60.4 percent; which is positive increase of 17.2 percent from NFHS-2.

Table No 3.II.8: Delivery Assistance by background characteristics in Jammu and Kashmir

Background characteristics	Number of deliveries assisted by health personnel	
	NFHS-2	NFHS-3
Religion		
Hindus	36.4	56.7
Muslims	46.2	61.5
Birth order		
1	63.7	79.8
2-3	43.9	59.2
4+	27.8	41.9
Occupation		
Not working	45.5	58.6
working	40	63.8
Partner Education		
No education	29.5	39
Primary	42.9	55.3
Secondary	42.9	63.9
High	74.6	90.3
Age		
<20	40	47.6
20-34	44.1	62.3
35-49	37.2	45.8
Media Exposure		
Not Exposed	22	32.3
Exposed	52.4	67.5
Caste		
SC	28.2	48.1
ST	25.7	36.6
OBC	33.6	43.9
OTHERS	48.4	60.5
Standard of living		
Low	14.4	25.4
Medium	39.8	48.2
High	70.1	75.8
Place of Residence		
Urban	82.5	83.9
Rural	36	54
Women Education		
No. Edu.	32.3	46.4
Primary	37.3	55.2
Secondary	63.3	76.2
High	89.9	97.7
ANC		
NO	31.2	54
YES	58.5	80.1

Note: - Number of last birth in the past three years, (NFHS-2 and NFHS-3).

3. II.17: Percentage of Women Receiving Professional Assistance

Obstetric care from a trained provider during delivery is recognized as critical for the reduction of maternal and neonatal mortality. This section analyzed the trend in professional assistance by background characteristics of the women. In NFHS-2, 46.2 percent of pregnant Muslims women get assistance from health professional as compared to 36.4 percent for Hindus women, it roused to 61.5 percent in case of Muslim women and 56.7 percent for Hindu women in NFHS-3. This shows that, there is substantial increase in professional assistance during delivery from NFHS-2 to NFHS-3 and moreover the gap between Hindus and Muslims also reduced. For first birth order, 79.8 percent of women get assistance from health professional in NFHS-3 as compared to 63.7 of women in NFHS-2. But as the birth order increases, professional assistance decreases during delivery. 40 percent of working women get professional assistance during delivery in NFHS-2, while it is 63.8 percent for working women in NFHS-3. This shows that, working women have more say in their health related matters. Again husband's education influence professional assistance during delivery. As the level of husband education increases, professional assistance to pregnant women during delivery also increases.

Most women in the age group 20-34 receive more professional assistance during delivery than any other age group. 62.3 percent of pregnant women got professional assistance in NFHS-3 which is seventeen point hikes than NFHS-2. Half of women who are exposed to mass media get professional assistance during delivery in NFHS-2 which has increased to 67.5 percent of women in NFHS-3.

As the living standard of increases, chance of receiving professional assistance during delivery also increases. There is much improvement observed for low standard of living and minimum improvement is observed among high standard of living group. In NFHS-2, 70.1 percent of women with high standard of living received professional assistance during delivery which improved to 75.8 percent women with same standard of living in NFHS-3.There is little improvement in professional assistance during delivery for women, who are living in urban areas, while there is much improvement in assistance for women who are living in rural areas. Women's education has a significant impact on all matters related maternal health care, this is seen in the increase their chances for

receiving professional assistance during delivery also increases, and there is also improvement in case of professional assistance from NFHS-2 to NFHS-3. Those women, who are receiving all types of recommended antenatal care, have more chances to get professional assistance during delivery. It has roused to 80 percent in NFHS-3 from 58.5 percent in NFHS-2 for those who received ANC.

CHAPTER-IV

DETEMINANTS AND IMPACTS OF ANTENATAL CARE AND INSTITUTIONAL DELIVERY

Determinants and Impacts of Maternal Health Care Utilization

4.1: INTRODUCTION

Antenatal care is a long process, seeking complete attention from the family members and itself. It has been observed that the levels of maternal care vary considerably in various sub-groups of the same population. These sub-groups may be based on residence, social and economic status in terms of educational attainment, occupation, religion, caste, standard of living etc. The study of maternal health care by socio-economic variables is an important area of demographic research.

The differential in maternal health care gives a guideline of the future progarmmes for each group, within the total population and thus helping in implementing them. It helps in improving the current use of Maternal Health Care programmes in those groups, which have low Maternal Health Care utilization such Scheduled caste, Scheduled tribe, Muslim population rural population, low SLI population.

This chapter deals with the determinants of Maternal Health Care utilization through statistical test. The determinants for the analyses are socio-economic and demographic factors. To know the determinants of antenatal care, place of delivery and professional assistance during delivery, binary logistic regression has been carried out. In binary logistic regression, the dependent variables are dichotomous indicating whether a women utilizing antenatal care (0= No and 1=Yes); place of delivery (0= Non-institutional and 1= Institutional) and professional assistance (0=No and 1=Yes). The odds ratio indicates the likelihood of Maternal Health Care for a specific category and how it varies from that of the reference category, once the effects of all other variables have been controlled.

Table No. 4.1: Logistic Regression to analyze the net effect of background characteristics on Antenatal care (Not recommended), Jammu & Kashmir, NFHS-3

Explanatory Variables	J&K
	Exp(B)
Religion	
Hindus®	
Muslims	2.03**
Birth order	
1®	
2-3	0.448**
4+	0.246***
Occupation	
Not working®	
Working	2.93***
Partner Education	
No education®	
Primary	4.223***
Secondary	1.923**
High	6.491*
Age	
<20®	
20-34	1.877
35-49	1.985
Media Exposure	
Not Exposed®	
Exposed	2.526***
Caste	
SC®	
ST	0.305**
OBC	0.771
OTHERS	1.045
Standard of living	
Low®	
Medium	0.709
High	1.307
Place of Residence	
Urban®	
Rural	0.413**
Women Education	
No. Edu. ®	
Primary	2.009*
Secondary	3.172***
High	1.17
Constant	0.931
-2 log likelihood	480.867
Nagelkerke R^2	0.43
N	**603**

Note: ***P<0.01; **P<0.05; *P<0.1

Note: Number of births in the five years (NFHS-3)

®: indicates reference category

4.2: The Net effect of Socio-economic factors on ANC (not recommended) in J&K

Result of binary logistic regression analyses shows that, keeping all variables constant, Muslim women (odds ratio 2.03) are more likely to receive all types of antenatal care as compared to Hindu women. The reason may be Muslim women are in better position than Hindu women. The women with two to three children (odds ratio .448) are less likely to receive antenatal care as compared to women with first order. Women with four or more children (odds ratio 0.246) are least likely to receive antenatal care than women with first order. The pattern appeared from percentage distribution holds true when net effect is considered. Working women (odds 2.93) are nearly about three times more likely to receive antenatal care services as compare to non-working women of Jammu and Kashmir. The obvious reason maybe, they have more resources at their disposal because of well economic condition. In Jammu & Kashmir, as husband's education level increases, women are more likely to receive antenatal care than spouses with no education at all. The reason may be that the educated husband has more chances to be get employment and becoming economically well off, which would ultimately affect the maternal health of his wife. Women who are exposed to mass media (odds ratio 2.526) are 2.5 times more likely to receive antenatal care than who are not exposed to mass media. Modern means of communication be it T.V, Radio or Newspaper create better awareness among women about modern health services available to them. In Jammu and Kashmir, women who belong to Scheduled Tribe (odds ratio .305) are less likely to receive antenatal care as compare to women, who belong to SC caste. Though percentage distribution shows a substantial higher percentage of general population received ANC (not recommended) the net effect is not significant for any caste group than ST population. Those women, who are living in rural areas (odds ratio .413) are less likely to receive all types of antenatal care than women, who are living in urban areas. Level of Women's education has a significant impact in the utilization of maternal health care facilities. In Jammu and Kashmir, as the education level of women increases, they are more likely to receive more antenatal care services. With respect to no education, significant and most net effect is observed for those with high level of significance. The net effects of many socio-economic and demographic variables are not significant in

Jammu and Kashmir. This fine tunes the differences observed in percentage distribution by background characteristics.

Table No. 4.2: Logistic Regression to Analyses the net effect of background characteristics on Antenatal Care (Recommended), Jammu & Kashmir, NFHS-2 to 3.

Explanatory Variables	Odds Ratio	
	NFHS-2	NFHS-3
	Exp(B)	Exp(B)
Religion		
Hindus®		
Muslims	2.28***	1.41
Birth order		
1®		
2-3	0.534***	0.715
4+	0.474***	0.164**
Occupation		
Not working®		
Working	0.981	2.075*
Partner Education		
No education®		
Primary	1.46	9.883***
Secondary	1.586**	1.971
High	2.125***	0.745
Age		
<20®		
20-34	0.931	2.054
35-49	1.187	7.478
Media Exposure		
Not Exposed®		
Exposed	1.721***	2.733
Caste		
SC		
ST	1.049	1.22
OBC	0.678	2.164
OTHERS	1.046	2.029
Standard of living		
Low®		
Medium	1.532*	6.34*
High	3.259***	4.362
Place of Residence		
Urban®		
Rural	1.057	0.532
Women Education		
No. Edu. ®		
Primary	1.022	1.143
Secondary	1.333	2.139
High	2.174*	18.023***
Constant	0.199	0
-2 log likelihood	1153.475	242.405
Nagelkerke R^2	0.217	0.374
N	962	636

Note: ***P<0.01; **P<0.05; *P<0.1
Note: Number of last birth in the three years (NFHS-3)
®: indicates reference category

4.3: The Net effect of Socio-economic factors on ANC (Recommended) in J&K

Controlling all other effects, during NFHS-2 Muslims women (odds ratio 2.28) are significantly more likely to receive recommended type of antenatal care as compare to Hindu women in Jammu and Kashmir. But, relationship does not significant for NFHS-3. This shows effect of religion has been reduced over a period of time. In NFHS-2, likelihood of receiving ANC reduces significantly with higher birth order. Women with 2^{nd} birth and 3^{rd} birth order (odds ratio 0.534) are less likely to receive ANC than women with first order while it not significant in NFHS-3. Women with four or more birth order (odds ratio.474) are less likely to receive ANC while women of same birth order (odds ratio 0.164) are less likely to receive ANC in NFHS-3. Working women (odds ratio 2.075) are two times more likely to receive ANC than non-working women in NFHS-3, while it not significant in case of NFHS-2. The reason working may be working women are more aware and have more say in their health related matters. In NFHS-2, spouse with secondary education (odds ratio 1.586) are more likely and spouses with high education (odds ratio 2.125) are most likely to receive ANC. In case of NFHS-3, spouses with primary education (odds ratio 9.883) are more likely to receive ANC and all other levels does not make significant impact. From analyses it become very clear that even primary education of husband has a significant impact in the utilization of maternal care. In NFHS-2, women who are exposed to mass media (odds ratio 1.721) are more likely to receive ANC than women with no exposure to mass media but this relationship is not significant in case of NFHS-3. Women with high standard of living (odds ratio 3.259) are most likely to receive ANC in NFHS-2, while in case of NFHS-3 net effect of standard of living is not statistically significant. Effect of education on ANC was not statistically significant with reference to women with no education in NFHS-2, while in case of NFHS-3, women with high education (odds ratio 18.023) are more likely to receive ANC than women with no education in Jammu and Kashmir. The net effects of many socio-economic and demographic variables are not significant especially during NFHS-3 than it was in NFHS-2. This is indicative of more spread of maternal health across the population group. Thus effect of socio-economic condition is getting diluted over the years.

Table No 4.3: Logistic Regression to analyses the net effect of background characteristics on Institutional Deliveries, Jammu & Kashmir, NFHS-2 to 3

Explanatory Variables	Odds Ratio	
	NFHS-2	NFHS-3
	Exp(B)	Exp(B)
Religion		
Hindus®		
Muslims	2.901***	0.882
Birth order		
1®		
2-3	0.356***	0.652
4+	0.248***	0.481
Occupation		
Not working®		
working	0.753	1.565
Partner Education		
No education®		
Primary	1.482	1.496
Secondary	0.978	1.296
High	1.399	0.909
Age		
<20®		
20-34	2.465**	1.622
35-49	3.351**	1.76
Media Exposure		
Not Exposed®		
Exposed	1.51**	2.261**
Caste		
SC®		
ST	1.131	1.304
OBC	0.931	0.948
OTHERS	1.446	1.033
Standard of living		
Low®		
Medium	2.086**	1.775
High	4.402***	1.901
Place of Residence		
Urban®		
Rural	0.21***	0.93
Women Education		
No. Edu. ®		
Primary	0.839	1.356
Secondary	1.336	2.48**
High	2.244*	29.409***
ANC		
No®		
Yes	1.855***	2.395**
constant	0.177	0.079
-2 log likelihood	939.426	350.237
Nagelkerke R^2	0.379	0.356
N	962	636

Note: ***P<0.01; **P<0.05; *P<0.1

Note: Number of last birth in the three years (NFHS-3)

®: indicates reference category

4.4: The Net effect of Socio-economic factors on Institutional Deliveries in J&K

The result of logistic regression shows that, Muslim women (odds ratio 2.901) are more likely to deliver in any health facilities as compared to Hindu women during NFHS-2, while it is not significant in case of NFHS-3. During NFHS-2, women with 2nd and 3rd birth order (odds ratio 0.356) and 4th or more birth order are less likely to deliver in any health institutes than women with first order, while it is not significant in case in of NFHS-3. Women in the (20-34) and (35-49) age group are more likely to deliver in health institute than women with less 20 years of age during NFHS-2, but all these are not significant in case of NFHS-3. In NFHS-2 and NFHS-3, women who are exposed to mass media are more likely to have institutional delivery than women, who are not exposed to mass media. But the odds ratio is higher in NFHS-3 which shows that during NFHS-3 mass media have more impact on institutional deliveries. Women with medium (odds ratio 2.086) and high (odds ratio 4.402) standard of living are more likely to deliver in any health institute than women with low standard of living during NFHS-2, while it is not significant in case of NFHS-3. NFHS-2 reveals that women who are living in rural areas (odds ratio 0.21) are less likely to deliver in any health institute than women who are living in urban areas. The reason may be rural areas have less medical facilities, but it is not significant in NFHS-3. Women with high education are more likely to deliver in any health institutes than women with no education in both surveys. Women who had received all recommended ANC (odds ratio 1.855) are more likely to deliver in any health institute than those women, who are not availing ANC both in case of NFHS-2 (odds ratio 1.855) and in case of NFHS-3 (odds ratio 2.395). It is interestingly to note that working status of women, husband's education and caste groups which showed a clear trend in percentage distribution did not show significant net effect in both NFHS-2 and NFHS-3. However, it is evident that net effects of most of the socio-economic variables are significant or not significant at 99 percent level of confidence during NFHS-3.

Table No 4.4: Logistic Regression to analyze the net effect of background characteristics on Professional Assistance during delivery, Jammu & Kashmir, NFHS-2 to 3.

Explanatory Variables	Odds ratio	
	NFHS-2	NFHS-3
	Exp(B)	Exp(B)
Religion		
Hindus®		
Muslims	2.239***	1.290
Birth order		
1®		
2-3	0.354***	0.507*
4+	0.288***	0.438*
Occupation		
Not working®		
Working	0.983	1.511
Partner Education		
No education®		
Primary	1.440	1.571
Secondary	0.84	.282
High	1.389	1.20
Age		
<20®		
20-34	2.52**	1.267
35-49	3.349**	1.221
Media Exposure		
Not Exposed®		
Exposed	1.672***	2.415**
Caste		
SC®		
ST	1.071	1.043
OBC	0.984	0.854
OTHERS	1.412	0.869
Standard of living		
Low®		
Medium	2.069**	1.776
High	3.347***	2.148
Place of Residence		
Urban®		
Rural	0.205***	0.756
Women Education		
No. Edu. ®		
Primary	1.057	2.19**
Secondary	2.23***	2.968***
High	2.858**	19.704**
ANC		
No®		
Yes	1.721***	2.317**
Constant	0.252	0.150
-2 log likelihood	1001.43	354.582
Nagelkerke R^2	0.369	0.367
N	962	636

Note: ***P<0.01; **P<0.05; *P<0.1

Note: Number of last birth in the three years (NFHS-3)

®: indicates reference category

4.5: The Net effect of Socio-economic factors on Professional Assistance in J&K

The net effect of background characteristic on professional assistance shows, effect of work status of the women, husband's education and caste is not statistically significant both in NFHS-2 and NFHS-3. However birth orders, religion, media exposure, place of residence have significant effect in determining professional assistance during birth. After controlling all other factor, during NFHS-2 Muslim women (odds ratio 2.239) are more likely to received medical assistance during delivery as compare to Hindu women, but it is not significant during NFHS-3. In both surveys, as birth order increases women are less likely to receive assistance during delivery, but it is highly significant during NFHS-2 while it is less significant in NFHS-3. During NFHS-2, as the mother's age increases, they are more likely to get medical assistance but it is not significant during NFHS-3. Women who are exposed to mass media are more likely to receive medical assistance during their delivery and it is highly significant in both the surveys, but the number has increased from NFHS-2 to NFHS-3. As the living standard of women increases, pregnant women are more likely to receive professional assistance during NFHS-2, but it is not significant for NFHS-3. Women, living in rural areas (odds ratio 0.205) are less likely to get medical assistance during NFHS-2 but is not significant for NFHS-3. In both NFHS-2and in NFHS-3 women with secondary education are most likely to receive professional assistance during their delivery than women with no education at all and statistically this significant at 99 percent level of confidence. This shows that education level has a significant impact in receiving professional assistance during delivery. Women who received all types of recommended ANC are more likely to get professional assistance according to NFHS-2 and NFHS-3 while in case of NFHS-3 odds ratio is higher than it was recorded during NFHS-2.

CHAPTER-V

SUMMARY & CONCLUSION

Summary and Conclusions

In conflict situations around the world it is a common observation that the health infrastructure, systems and setup suffers badly. As a consequence, the general health of the population also suffers. There are many intertwined reasons for this deterioration; one is that in such situations health takes a back seat and no longer remains a priority for the government or for the people. Survival assumes paramount importance: safety of life and property overtakes all other concerns. Negative health effects are both physical and emotional, often resulting in permanent or long-term disability. Another indirect effect of conflict on public health results from population displacement. Data from conflict areas all over the world confirms that health of the population deteriorates as a consequence of the conflict. Considering the situation, Jammu and Kashmir is selected to study which is geographically difficult area and suffered from political disturbances. However, the figures from Jammu & Kashmir are highly encouraging keeping in view that the region has been facing strife and conflict for the past two decades. Although data could not be gathered during the First National Family Health Survey (1992-1993), apparently the situation in the state is better in comparison to the indicators put for the country as a whole. Considerable improvement in the situation in Jammu & Kashmir has improved in comparison to the overall situation of the country. The rate of progress is slow but steady, and there is positive change in all of women's health indicators in Jammu & Kashmir.

The present study analyzed both NFHS-2 and NFHS-3 data for the state to understand the trend in maternal health care behaviour. It also compared the state performance with that of country as a whole. Apart from different analyses simply by applying percentage distribution, the study also employed logistic regression analyses. Those are carried out using both NFHS-2 and NFHS-3 data to understand the net effect of each background characteristics and any changes thereby in these two time periods.

In Jammu and Kashmir, percentage of first antenatal check-ups has been increased over a period of time, but there is still huge scope for improvement to bring pregnant women for check-ups to any medical institute as soon as possible because it helps in reducing

perinatal mortality. Health care provided to women by Doctor's, ANM/nurse/midwife/LHV, Dai/TBA and other professional etc. remain more or less same since NFHS-2 and there is urgent need to increase and strengthen the existing facilities to overcome the burgeoning demand of increasing population. Component of antenatal check-ups available to women also remain more or less same since NFHS-2. Again, there is urgent need to strengthen the existing facilities like weight measuring, blood pressure checked, blood test, and urine test and abdomen examination. In spite of all efforts, there is large percentage of non-institutional deliveries in India and Jammu and Kashmir is not an exception. Jammu and Kashmir is mountainous as well as rural area and women living in rural areas have no medical amenities which help them during their delivery. However, even within that assistance during delivery is more in case of Jammu and Kashmir as compared to the rest of India.

As we know that Indian society is male dominated, so male play an important role in all walks of life and Jammu & Kashmir is no exception. Their positive role is most sought to improve women's health status. Most of the wives received antenatal check-ups for their youngest child and percentage is higher in urban areas as compared to rural areas. Most of the time husbands are present during their wives antenatal check-ups; again men's presence is higher in urban areas while their presence is also good in rural areas.

Women's dependency upon government facilities for antenatal care is higher than the national average. After government facilities, private medical facilities is the main source for antenatal care which is less developed in Jammu & Kashmir as compare to the country as a whole. Muslim women are utilizing more government and private facilities as compared to Hindu women of Jammu and Kashmir.

The study compared the status of maternal health over NFHS-2 and NFHS-3. For this purpose both the data file were made comparable by considering case history of the births occurred in 3 years preceding the survey. From NFHS-2 to NFHS-3, there is an improvement in receiving recommended two doses to tetanus toxoid injection vaccine and at least three antenatal check-ups but significant declining trend has been observed in case of IFA tablets or syrups for at least three months in Jammu and Kashmir which has

significant in receiving full recommended antenatal care. The decline in recommended IFA dose is across all socio-economic categories of population.

Substantial improvement has been observed in case of institutional delivery and in receiving professional assistance during delivery from NFHS-2 to NFHS-3. Muslim women utilizing more medical facilities for their delivery and receiving more professional assistance over a period of time, but the gap between both religions in utilization maternal health care services is reduced in NFHS-3. Utilization of maternal health care services like institutional deliveries and professional assistance has increased over a period of time for the first birth order, but as the birth order increases utilization of maternal health care reduced. During NFHS-2, working women utilized less medical facilities for delivery and received less professional assistance but in NFHS-3, improvement is observed and trend is reversed for working women. As the spouse education increases, utilization of medical facilities for institution deliveries and in receiving professional assistance also increases over the study period. Women in the middle age group are having more institutional delivery as well as receiving more professional assistance and increasing trends has observed over the study period in the age group. Women are more exposed to mass media since NFHS-2 and avail more health institute for child birth and receiving professional assistance. There is significant improvement in institutional delivery and in receiving professional assistance among SC women since NFHS-2 and they are comparable with OBC women for institutional delivery and professional assistance but there is also lot of space for improvement.

It is also observed from previous studies as well as from the current study that urban women utilize more medical facilities than rural women. As standard of living improves, women avail more maternal health care facilities. In Jammu and Kashmir, there is hardly any improvement in medical facilities in urban areas, but it is significant improvement in medical facilities in rural areas, which helped the women in availing medical facilities for delivery and professional assistance during delivery in rural areas. Educated mother are more aware of pregnancy complication and they are more alert and utilize more medical facilities as the level of education increases. There is significant impact on institution

delivery and professional assistance for those women who receive recommended antenatal care services.

Maternal health care status of Jammu & Kashmir is much better than India as a whole. Women of Jammu & Kashmir utilizing more maternal health care services considering recommended antenatal care, institutional delivery or professional assistance. In Jammu and Kashmir and India, Hindu women received more recommended antenatal care than Muslim women; while in case of institutional delivery and professional assistance Muslim women are utilizing health care more than Hindu women of Jammu & Kashmir.

More working women of Jammu & Kashmir received antenatal care, institutional delivery and professional assistance during delivery from medical institutes while it is reverse in case of India. This may be working status of Jammu & Kashmir women is not poverty induced. Among caste, SC and ST women of Jammu & Kashmir received more antenatal care than SC and ST women of India and OBC women of Jammu & Kashmir receiving less antenatal than OBC women of India. In case of institutional deliveries, utilization of medical facilities remained same for SC women of Jammu & Kashmir and India. More ST women deliver within medical facilities in Jammu & Kashmir than ST women of India but when OBC women are considered lesser of them deliver within health facility as compared to their counterpart i.e. OBC women of India. In Jammu & Kashmir, SC and ST women are more assisted during delivery than SC and ST women of India. OBC women are less assisted by health professional than OBC women of India. Other castes utilized more maternal health care in Jammu & Kashmir than it is in India.

Utilisation of maternal health care is analyzed by background characteristics by employing logit regression model to understand the effect of each characteristic statistically. After controlling all other factors, Muslim, working women, women from rural areas and those who have media exposure are more likely in receiving ANC (not recommended) than their counterpart. As the birth order increases, women are more are less likely to receive ANC. Women with husband's education up to primary has highest and most significant likelihood to receive ANC as compared to the reference category that is illiterate Similar to previous analysis, in case of recommended ANC also Muslim

women are more likely to receive ANC than Hindu women during NFHS-2 but it is not significant in case of NFHS-3. As birth order increases women are less likely to receive ANC and it is significant in both NFHS-2 and 3. Work status, mother's age, caste group and place of residence do not show any significant effect in explaining the variation over NFHS- 2 and NFHS 3. High level of education, media exposure and high standard of living are highly significant in NFHS 2 but not so in NFHS 3After controlling all other factor for institutional delivery for NFHS-2 and 3, Muslim women deliver more in health facilities than Hindu women and it is highly significant in case of NFHS-2 while it is not significant NFHS-3. As birth order increases women are less likely to deliver in any medical facility and it was highly significantly in NFHS-2, while it not significant in case of NFHS-3. Mother occupation and partner education has not significant over a period of time. Women who are more exposed to mass media are more likely to deliver in health facilities over a period of time. Caste of women is not significantly associated with institutional delivery during NFHS-2 and 3. Place of residence is highly significant with institutional delivery in NFHS-2 while it not significant in case of NFHS-3. Women education is positively associated with institutional delivery. It is less associated with high education in NFHS-2 but it is highly significant with NFHS-3. Women, who receiving more ANC are more likely to deliver in health institutes during NFHS-2 and NFHS-3.

After controlling all other factor, Muslim women are more receiving professional assistance than Hindu women while it is not significant in case of NFHS-3. As birth order increases, women less likely to receive professional assistance in NFHS-2 and 3, but it is highly significant in case of NFHS-2 and less significant in case of NFHS-3. Women occupation and partner education of Jammu & Kashmir women is not significant over a period of time. Age of mother is significantly associated with profession and receiving more professional assistance with age while it is not significant in case of NFHS-3. Women, who are exposed to mass media, are more likely to receive professional assistance in NFHS-2 and 3. Caste is not significant factor in influencing professional assistance. Standard of living is significantly associated with professional assistance in NFHS-2 while it is not significant in case of NFHS-3. Rural women receiving less

professional in NFHS-2 but it is not significant in NFHS-3. As women education increases she is more likely to receive professional in NFHS-2 & 3. Women, who receiving full ANC are more likely to receive professional assistance in NFHS-2 and 3 and it highly significantly in NFHS-2.

CONCLUSIONS:

The present study has revealed that the status of maternal health is much better than country as a whole. All the indicators like antenatal care, institutional delivery and profession assistance showed better performance for the state. The better performance is consistent over time period. Inspite of lack of accessibility because of geographical condition state could come up and achieved a better health seeking behaviour. It is also observed that over the period effect of background characteristic is reducing which indicate otherwise indicate an effective MCH programme. However, there is urgent need to provide antenatal care and professional assistance during delivery at home. Also availability of IFA/syrup is found to be inadequate and irregular. There is necessity to ensure that IFA supply should be regular and adequate. As the demand for institutional delivery increases, there is also a need to increase the numeric strength of Gynecologist and Anesthetist and other allied facilities. Education level of mother and awareness has to be increased to aware women about their health related matter and programmes and policies of Government like JSY (Jananai Suraksha Yojana) and NRHM, so we can achieve the goal of safe motherhood.

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