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RESEARCH ARTICLE

PREGNANCY COMPLICATIONS AND HEALTH-SEEKING BEHAVIOUR AMONG MARRIED WOMEN
IN RURAL UTTAR PRADESH: EVIDENCE FROM NFHS 3

Satish Kumar Chauhan, *Bal Govind Chauhan and Bidyadhar Dehury

International Institute for Population Sciences, Mumbai-400088, India

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ABSTRACT

Improvement in the health and nutritional status of the population has been one of the major thrust areas for the social development programmers of the country. In developing countries like India childbirth is one of the important events affecting health of a woman. Using the unit data from NFHS-3, this paper examined the pregnancy complications among married women and their health seeking behaviour in rural Uttar Pradesh. Bi-variate and multivariate analysis are used to examine the interrelationship between pregnancy complications and use of health care services by socio-economic characteristics of the women. The results showed a high prevalence of pregnancy complications among the women in rural Uttar Pradesh. More than one-third ever married women had reported of having any kind of pregnancy complications. Bivariate results showed that pregnancy complications were reported higher among the women who received more health care services such as full antenatal care, home visit of health workers and visit to health facility. However, the pregnancy complications were found less if any health worker visited to home. The study also reveals that women's education, economic status of the household and visit by health worker plays a vital role in influencing the woman's health problems during pregnancy.

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INTRODUCTION

Pregnancy is one of the most important events in life of all Women. It is a period of expectant waiting and one that all women aspire to experience at least once in their lifetime. Death and illness related to pregnancy and childbirth are significant health problems in developing countries. In developing countries, one in every 16 women may die due to pregnancy-related complications (WHO, 2004). Maternal mortality ratios can be up to 200 times higher in developing countries compared to developed countries (Koblinsky, 1995). In sub-Saharan Africa, the cumulative risk of maternal death over a lifetime due to complications related to pregnancy, abortion and childbirth is one in every 16 women, compared with one in every 3,800 women in developed countries (WHO, 2004). Improving maternal mortality has received recognition as a global priority as evidenced by its inclusion in the Millennium Development Goals (United Nations, 2004). Many women face some minor health problems and pregnancy complications, but there are some women who unfortunately get faced with more serious complications during pregnancy. According to estimates by the World Health Organisation (WHO), each year an estimated 136,000 women die needlessly due to causes related to

pregnancy, childbirth and abortion. According to WHO report in 1996, ANC is an important component of the Safe Motherhood Programme implemented between 1996-98. Antenatal care is the care that a woman receives during pregnancy, helps to ensure healthy outcome for women and newborns (WHO/UNICEF, 2003).

Complications of pregnancy are health problems that occur during pregnancy. They can involve the mother's health, the baby's health, or both. Some women have health problems before they become pregnant that could lead to complications. Other problems arise during the pregnancy. According to Datta et al., 1980, each year over 50 million women experience pregnancy related complications. Fifteen million of which lead to long-term illness or disability often because they have no access to medical care, because pregnancy has exacerbated already existing malnourishment or illness, or because the medical care that they do manage to access is substandard. It has also been ascertained that pregnancy-related problems have far-reaching consequences on the overall reproductive health of women, in addition to their contribution to maternal mortality (Bhatia and Cleland, 1995). Proper antenatal care is the care that a woman receives during pregnancy, which help to ensure a healthy outcome women and their outcome for women and their new-borns, play an important role in successful labour and delivery. The safe motherhood initiative proclaims that all pregnant women must receive basic and professional antenatal care (Harrison, 1990; Maiti et al., 2005).

*Corresponding author: Bal Govind Chauhan
International Institute for Population Sciences, Mumbai-400088,
India.

The impact of reproductive morbidity on women's reproductive health is serious particularly in developing countries like India where weak and non-existent system of public health care makes the diagnosis and treatment of these conditions difficult (Pachauri, 1994). Keep in mind that whether a complication is common or rare, there are ways to manage problems that come up during pregnancy like antenatal check-ups and care. NFHS-3 has identified eight problems during pregnancy- daylight vision, night blindness, convulsions (not from fever), swelling (of the legs, body or face), excessive fatigue, anaemia and vaginal bleeding. These problems are based on self-reports by respondents and are not clinically tested. Night blindness, i.e., difficulty seeing at dusk is the result of chronic Vitamin A deficiency and often seen among pregnant women in areas where Vitamin A deficiency is endemic. Daylight vision is also caused by deficiency of Vitamin A. Anaemia is one of the major problems faced by most of the Indian women. It is characterized by a low level of haemoglobin in the blood and usually results from a nutritional deficiency of iron, folate, Vitamin B12 or some other nutrients. Another problem reported is convulsion, which results from toxemia and other physiological problems. If it is accompanied by signs of hypertension it can be symptomatic of eclampsia, a potentially fatal condition. However, a combined outcome of toxemia, anaemia and malnutrition is swelling of legs, body or face.

Every year Millions of women are suffering from any types of pregnancy related health problem and childbirth in developed and developing countries. Complication during pregnancy and at the time of newborn birth is the more responsible cause of deaths and disability among women and child than any other health problems (EC/UNFPA, 2000). The situation is worse in developing countries like India due to inadequate access to modern health services and poor utilization. Despite the government's serious commitment to deliver health facilities to the doorsteps of common people through innovative approaches, the utilization of health services is still far below any acceptable standard. One of the public health challenges in developing countries such as India is to identify vulnerable groups and to provide them with needed preventive and curative health services. Uttar Pradesh has the country's highest rate of maternal mortality, as per the latest official data. According to the Sample Registration Services (SRS) 2007-2009 (SRS, 2011), the maternal mortality ratio (MMR) for Uttar Pradesh was 359 per 100,000 live births - the second highest in the country which is 212 for India level. In the view of this backdrop, there is need to find out the pregnancy related problem and suggest some policy implication to the government. In this regard, this research paper attempted to examine the level, pattern and factors influencing pregnancy complications among women in rural Uttar Pradesh. Further, it is also attempted to examine the association of maternal health seeking behaviour and pregnancy complications among the women.

MATERIALS AND METHODS

For the study purpose the data extracted from the third round of National Family Health Survey (NFHS-3) conducted during 2005-06. This population based survey is in line with the other

demographic survey that provides consistent and reliable estimates of fertility, mortality, family planning, utilization of maternal and child health care services, and other related indicators at the national as well as state levels. NFHS-3 covered all 29 states which represents more than 99 percent of India's population. The villages were selected in the first stage by using the Probability Proportional to Size (PPS) from rural area. The blocks were selected at the first stage from census enumeration blocks (CEB) covering around 150-200 households were selected at the second stage, and the required number of households was selected at the third stage using systematic sampling technique. Information of the pregnancy related issues was given in the data. This paper is concentrated on pregnancy related problems i.e. daylight vision, night blindness, convulsion during pregnancy, leg, body and face swelling, excessive fatigue vaginal bleeding and anemia among women from rural Uttar Pradesh. Therefore, we consider only those women who had given last live birth in five years preceding the survey for the analysis purpose.

Statistical Analysis

Bi-variate and multivariate logistic regression analysis were used. Bi-variate analysis was used to examine the level and pattern of pregnancy complications and health seeking behaviour among women in rural Uttar Pradesh. Binary logistic regression was carried out to study the factors influencing pregnancy complications among women. For this purpose, we recoded the pregnancy complication in the binary form (any pregnancy complication=1, no pregnancy complication=0). Logistic regression is commonly estimated by maximum likelihood function. For each selected variable logistic models takes the following general form

$$\text{Logit } P = \ln(P/1-P) = b_0 + b_1x_1 + b_2x_2 + b_3x_3 + \dots + b_i x_i + e$$

Where,

b_1, b_2, b_3 represent the coefficients of the each predictor variable included in the model while e is an error term. \ln represents the natural logarithm of the odds of the outcome.

RESULTS

Pregnancy complications among the women

Figure 1 shows the prevalence of complications during pregnancy reported by women in rural Uttar Pradesh. Majority of women reported of having complications. For example, more than half of women reported anaemia problem, about 47% of women reported excessive fatigue and 22.6% of women reported leg, body and face swelling. Very few percentages of women had reported complication of vaginal bleeding (3.3%), daylight vision (6.0%), night blindness (12.5%) and convulsion (13.1%) during the time of pregnancy.

Socio-demographic differentials in pregnancy complications

Table 1 represents socio-economic differentials in pregnancy complications like daylight vision, night blindness, convulsion, leg, body and face swelling, excessive fatigue, vaginal bleeding and anaemia by women's background characteristics.

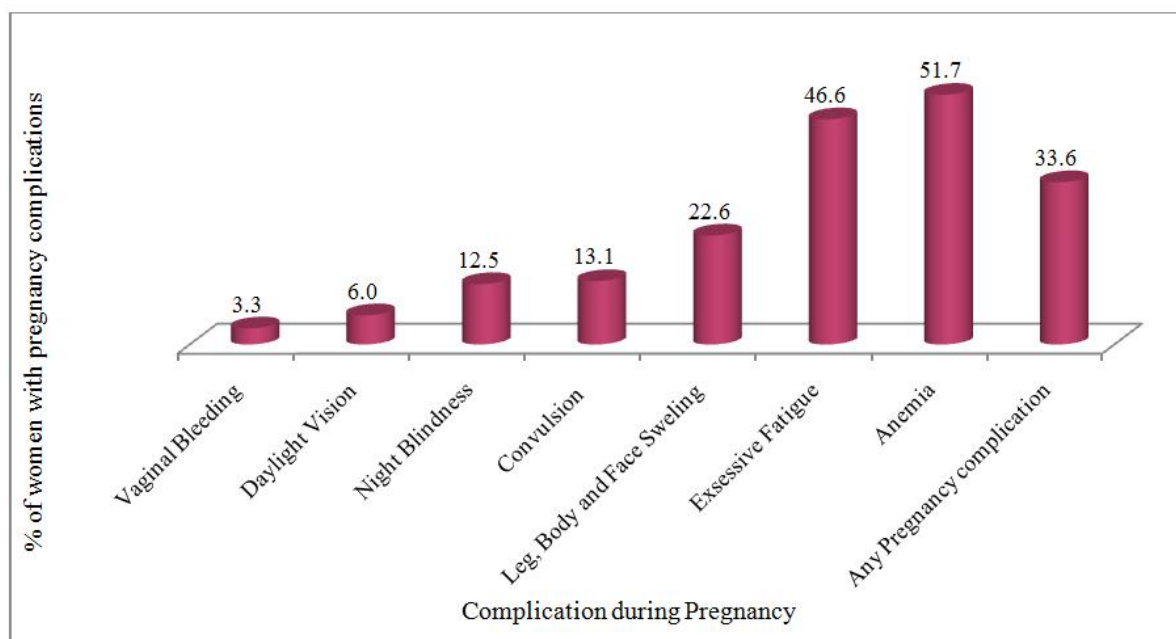


Figure 1. Percentage of women having pregnancy complication in rural Uttar Pradesh, India, 2005-06

Table 1. Pregnancy complication among married women of rural Uttar Pradesh by background characteristics

Covariates	Daylight Vision	Night Blindness	Convulsion During Pregnancy	Leg, Body and Face Swelling	Excessive Fatigue	Vaginal Bleeding	Anaemia	n
Women's Age								
15-19 year	4.4	11.1	11.1	17.7	41.6	2.7	57.0	226
20-24 year	5.2	11.1	12.5	23.3	46.1	3.1	56.9	955
25-29 year	6.3	13.3	14.6	23.7	48.8	3.6	51.1	1024
30 and above	6.9	13.5	12.9	22.0	46.3	3.4	49.8	2826
Work Status								
Not working	5.4	10.9	13.8	22.9	47.7	3.3	52.6	2977
Working	7.2	15.6	11.9	22.0	44.6	3.3	50.4	2054
Religion								
Hindu	6.0	13.4	12.8	20.7	44.5	3.1	51.3	4252
Muslim	6.5	8.8	14.8	30.7	56.3	3.9	54.5	743
Others	0.0	0.0	0.0	42.9	50.0	14.3	42.4	36
Caste								
SC/ST	7.2	16.2	11.5	23.2	42.8	2.6	54.6	1292
OBC	5.7	11.8	13.3	22.0	46.7	2.4	50.6	2696
Others	5.3	9.1	15.1	23.3	52.2	6.9	51.1	1043
Education of Respondent								
No education	6.7	13.8	13.2	22.1	44.5	2.2	52.8	3603
Primary	6.6	16.1	15.6	25.9	55.4	4.4	49.3	549
Secondary	3.7	6.1	10.9	22.5	49.3	5.7	50.3	661
Higher	2.0	5.4	14.2	21.6	50.0	9.5	44.8	218
Partner Education								
No Education	6.2	13.8	14.2	23.9	43.9	2.0	55.5	1581
Primary	6.1	16.9	10.8	22.7	47.2	1.7	53.6	630
Secondary	6.6	11.3	13.0	21.5	47.8	4.0	50.2	2304
Higher	2.3	7.0	14.4	23.3	49.8	6.6	45.1	456
Wealth index								
Poorest	7.4	17.0	14.1	23.7	44.4	1.4	52.9	1563
Poor	7.0	13.4	13.0	20.9	47.5	3.6	53.9	1499
Middle	4.0	9.4	13.5	23.9	49.4	3.5	51.3	1056
Richer	3.7	5.1	10.7	23.3	47.5	5.1	45.3	695
Richest	4.4	3.5	10.6	15.9	43.4	12.4	51.7	218
Media Exposure								
No	6.8	14.7	13.4	23.4	45.8	2.8	53.0	3140
Yes	4.8	8.9	12.7	21.1	48.1	4.2	49.6	1891
Total	6.0	12.5	13.1	22.6	46.6	3.3	51.7	5031

Results show that with increasing the age of the women, complications related to pregnancy slightly increased except older women. Percentage of excessive bleeding, excessive fatigue is found high but women of all age group reported anaemia higher which ranged from 50 to 57 percent. Daylight vision (16%) and night blindness (12.5%) reported high in working women. The result also shows the religious differentials of reproductive health complications. Muslim women reported high pregnancy complications than Hindu and Other women. The educational status of women and caste does not show much differential in complications during pregnancy. Poorest and poor quintile women had reported high level of pregnancy complications compared to others. For example, about 53% of poorest women and 54% of women poor quintile reported anaemia complication compared to 45% among women belong to richer quintile and 51.7% among richest quintile.

behaviour among women in rural Uttar Pradesh. For example, full ANC utilization was higher among the women belong to 20-24 age group and least among the women belong to 30 and above age group. Similar finding also observed in home visit by health worker and visited to health facility by women during pregnancy. It is observed that increasing the age of the women the declining the health seeking behaviour. The health seeking behaviour was found less among the working women compared to non-working women. For example utilization of full ANC was only 2.9 percent among currently working women compared to 6.9 percent among their counterparts. Similarly about 35 percent working women had visited to health facility during pregnancy compared to 38.5 percent among non-working women. From the table it can be also observed that the health seeking behaviour among SC/ST caste group was very less compare to other caste groups.

Table 2. Health seeking behaviour of pregnant women during pregnancy in rural Uttar Pradesh, 2005-06

Background characteristics	Full ANC	Home visit by health worker	Visited Health Facility	n
Women's Age				
15-19 year	9.7	11.1	44.2	226
20-24 year	10.6	9.3	40.6	955
25-29 year	8.5	10.0	44.1	1024
30 and above	1.9	9.7	32.5	2826
Work Status of the women				
Not working	6.9	11.1	38.4	2977
Working	2.9	7.2	34.9	2054
Religion				
Hindu	5.3	9.4	34.9	4252
Muslim	4.7	11.2	47.4	743
Other	11.1	14.3	58.3	36
Caste				
SC/ST	4.3	8.4	35.4	1292
OBC	5.0	9.9	37.0	2696
Other	7.1	11.4	38.6	1043
Women Education				
No education	3.1	9.2	36.7	3603
Primary	7.3	11.1	36.4	549
secondary	10.1	12.4	36.6	661
higher	21.6	6.1	43.6	218
Partners Education				
No education	2.1	9.4	37.6	1581
Primary	3.7	10.2	40.2	630
Secondary	6.3	10.0	35.9	2304
Higher	13.2	9.7	35.1	456
Wealth index				
Poorest	3.2	8.9	36.5	1563
Poor	3.7	11.0	36.8	1499
Middle	5.3	10.0	36.8	1056
Richer	10.2	8.7	37.4	695
Richest	14.7	9.7	40.4	218
Media Exposure				
No exposure	3.5	9.8	36.7	3140
Any exposure	8.2	9.7	37.3	1891
Total	5.2	9.8	37.0	5031

Socio-demographic differentials in health seeking behaviour among married women for last live birth in rural Uttar Pradesh

Table 2 represents socio-economic differentials in health seeking behaviour like full ANC utilization, home visit by health worker and women go to the health facility. Result shows that utilization of full ANC was low among the women in rural Uttar Pradesh where only five percent of women had received full ANC. Similarly 10% of women reported that the health workers had visited home during pregnancy and 37% women reported that they had visited to a health facility. Socio-economic differentials were observed in health seeking

No education and being poor women were more deprived in terms of health seeking behaviour during pregnancy period. Those women who expose to media the utilization of full ANC were 8.2 percent compared to no media exposure (3.5%). Similar finding also found in visited the health facility by women during pregnancy period.

Pregnancy complications and health seeking behaviour among women in rural Uttar Pradesh

Table 3 shows the pregnancy complications by health seeking behaviour of married women in rural Uttar Pradesh. It is found

that those women who received full ANC they reported high pregnancy complications than those who did not received full ANC. However, daylight vision, night blindness and anaemia problem was higher among those who did not receive full ANC. The complications include convulsion, swelling of the body, excessive fatigue, and vaginal bleeding reported by women found higher in women with received full ANC compared to their counterparts.

Similarly, in the case of health worker visited respondent's home, the pregnancy complications such as daylight vision, night blindness, and vaginal bleeding was reported less.

About 54 percent women were suffering from excessive fatigue among the women in which any health worker visited home compared to 46% among the women in which no health worker visited home. About 69 percent women reported anaemia from that household where the health worker had visited home. It can be also seen that those women who visited health facility had reported highest pregnancy complication than women who had not visited health facility. About 25 percent women reported leg, body, face swelling and about 52 percent women reported excessive bleeding and excessive fatigue during pregnancy those who had visited health facility.

Table 3. Pregnancy complication by health seeking behaviour of married women of rural Uttar Pradesh

Pregnancy complications	Full ANC		Home visit by health worker		Visited health facility		Total
	Yes	No	Yes	No	Yes	No	
Daylight Vision	4.5	6.2	4.4	6.2	6.7	5.6	6.0
Night Blindness	10.6	12.7	11.4	12.6	14.8	10.8	12.5
Convulsion	17.0	12.7	13.2	13.1	15.7	11.2	13.1
Leg, Body and Face Swelling	24.2	22.4	25.6	22.3	24.4	21.2	22.6
Excessive Fatigue	53.8	46.0	53.9	45.9	51.7	42.9	46.6
Vaginal Bleeding	8.3	2.8	2.4	3.4	4.2	2.7	3.3
Anaemia	51.0	51.8	60.8	54.0	54.8	49.9	51.7
n	264	4767	297	2748	1859	3172	5031

Table 4. Odds ratios from logistic regression for any pregnancy complication by background characteristics and health seeking behaviour of women in rural Uttar Pradesh

Covariates	Sig.	OR	95 % CI	
			Lower Limit	Upper Limit
Full ANC				
Yes	.012	1.324	1.061	1.611
Home Visited by Health worker				
No®				
Yes	.093	1.244	.964	1.606
Go to health facility				
No®				
Yes	.000	1.452	1.247	1.690
Respondent Age				
15-19 year®				
20-24 year	.185	1.229	.906	1.666
25-29 year	.067	1.334	.980	1.816
30 and above	.200	1.223	.899	1.663
Work Status of the Women				
Not working®				
Working	.387	1.076	.911	1.272
Religion				
Hindu®				
Muslim	.000	1.611	1.290	2.011
Others	.590	1.361	.443	4.187
Caste				
SC/ST®				
OBC	.702	0.965	.806	1.156
Others	.502	1.091	.847	1.405
Education of Respondent				
No education®				
Primary	.002	1.527	1.172	1.989
Secondary	.125	1.212	.948	1.548
Higher	.040	1.571	1.020	2.421
Partner education				
No Education®				
Primary	.570	1.076	.836	1.385
Secondary	.302	1.106	.914	1.338
Higher	.348	1.185	.832	1.688
Wealth index				
Poorest®				
Poor	.937	0.992	.821	1.200
Middle	.900	0.985	.785	1.237
Richer	.028	0.714	.529	.963
Richest	.053	0.632	.397	1.006
Media Exposure				
No®				
Yes	.561	0.951	.802	1.127

Association of pregnancy complications and maternal health seeking behaviour

The study found that there is a socio-economic and demographic differential in women's pregnancy complications in rural Uttar Pradesh. Besides, it is quite important to examine the impact of utilization of maternal health care services on pregnancy complications with other socio-economic and demographic characteristics. For this purpose we performed multivariate analysis to understand the association between pregnancy complications with utilization of full ANC service after controlling for other covariates. Table 4 presents the results of the binary logistic regression for any pregnancy complication. The dependent variable, any pregnancy complication, was dichotomous – 0 for no complication and 1 for having any complications. The prime independent variables were maternal health seeking behaviour indicators – utilization of full ANC, health worker visited to respondent's home, and respondent visited to a health facility. Result shows significant association between utilization of full ANC and any type of pregnancy complications. For example, women who received full ANC were more likely (32 percent) to have any pregnancy complication compare to those women who didn't received full ANC. In the case of home visit by health worker the risk of any pregnancy complication was about 24 percent more likely compared to its counter parts. Those women who gone to health facility during pregnancy the risk of any pregnancy complication was 45 percent more likely compared to those who did not go to health facility for check-up. Result has been also observed that age of the women has also a significant impact on any pregnancy complications. It shows that older women were less likely to have any pregnancy complication than young women. Muslim women were found 6 percent more likely [95% CI: 1.290-2.011] risk of any pregnancy complication than Hindu women. The educated women had higher odds of having any pregnancy complications compared to those uneducated women. For example, the odds of any complication was 1.076 [95% CI: 0.836-1.385] for women with primary education, 1.106 [95% CI: 0.914-1.338] for women with secondary education and 1.185 [95% CI: 0.832-1.688] for higher secondary and above education. In case of wealth index, it shows that there is significant relationship with pregnancy complications. Women belong to richest wealth quintile was 37 percent less likely the risk of pregnancy complication compare to those women who belong to poorest quintile. In the present of media exposure the risk of any pregnancy complication is 5 percent less likely [95% CI: 0.802-1.127] compare to its counter parts.

DISCUSSION AND CONCLUSION

This study attempts to understand the relationship between pregnancy complication and health seeking behaviour in rural Uttar Pradesh using the third round of National Family Health Survey data, conducted during 2005-06. Uttar Pradesh is been selected because of lowest utilization of maternal health care services and high level of complication during pregnancy in rural resident women. Result shows that level of pregnancy complication was higher in the state, particularly anaemia, excessive fatigue, excessive bleeding complications were highest than other form of complications. Moreover, proportion of severe complication is highest in the state. For instance,

about half of the pregnant women reported excessive fatigue and excessive bleeding. We also observed cross-section variation in pregnancy complication in the states. For instance, complication is reportedly higher among Muslims compared to Hindu and other women. It may be because among Muslims fertility level is higher and birth-interval is comparatively shorter. (Alagarajan and Kulkarni, 2006). It may prone them on higher complication, as many studies shows higher fertility with short birth interval is associated with pregnancy complication (Raj, 2005). Moreover, the education level of Muslim women are lower as compared with the Hindu women and this in turn has an adverse impact on them during pregnancy in terms of knowledge and utilisation of ANC services. Similarly, complication is higher among Schedule caste and others caste communities in the state. This is mainly because of caste status influences the educational status of women and their attitude about health care provisions (Govindasamy and Ramesh 1997). It is also observed that pregnancy complications are higher among primary level educated women than that of no educated and highly educated. Highly educated women are more aware about the problems that might occur during pregnancy and they are in a better position to take care of such problems. This is perhaps because of the fact that most of these women might be engaged in economic activities outside the house, which demands a considerable amount of their time and energy and prevent them from taking adequate rest. Another reason might be that women being more conscious about their health reporting of their health might be better. If women are engaged in work that requires professional skill and educational qualifications then they have higher chances of interacting with the outside world and are therefore more aware about their health problems and its precautions. Reproductive complication is higher among women belong to poor economic household than that of rich household. It may probably because among poor prevalence of unplanned pregnancy is higher which may lead higher pregnancy complication (Osmolska, 2011).

Interestingly, pregnancy complication is reportedly higher to those women who received Full ANC, and women visited health facilities. It may be probably that higher complications need higher healthcare services. It calls a need to promote the institutional delivery in the state. And also, the status of women has to improve so that they are not discriminated against in matters of food. It should be realized that women should not be looked upon only as potential mothers rather she should be given all opportunities to grow up as a healthy child and then develop to a healthy adult. Moreover, recommendations to address these problems include encouragement of female education, introduction of family life education in school curricula, creating community awareness for seeking health care and empowerment of women in household decision making process. It is a need to more enforcement of Reproductive and Child health (RCH) programs and the current national rural health mission (NRHM).

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