
Original Article

Factors affecting antenatal services in a rural area of district Panipat

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Abstract:

Background: Being a mother involves many risks which are well known from an era of time. It can range from minor hyperemesis to life threatening hemorrhages. A very effective measure to counter these risks is Antenatal care involving antenatal checkups, investigations and specific protection measures like TT immunization and IFA tablets. All these services are provided to women in India through various schemes, a few like JSY, JSSK and PMSMA.

Objective: This study was planned in an area where limitation of such services due to a density of population is there to estimate the utilization of Antenatal Care Services and to look for various factors responsible for the pattern of utilization.

Method: A community based cross-sectional survey was done in Madlauda block of district Panipat having a population of 1.43 lakhs on recently delivered women residing in the study area during the period of study. The data were collected with the help of a semi-structured interview schedule.

Results: Most of the women had antenatal registration and though a good number of women delivered their babies at a healthcare facility, still most of them did not avail the minimum required antenatal checkups i.e. a minimum of 4 antenatal visits. TT immunization rate was quite high while consumption of IFA tablets was relatively very low. Analyses of the socio-demographic factors revealed education status, caste, work and religion to be significantly associated ($p < 0.05$) with antenatal checkups and type of family, education status, work status and religion to be significantly associated with institutional deliveries. ($p < 0.05$)

Conclusion: Utilization of antenatal services in terms of antenatal checkups was quite low as only one-third of the study participants had minimum Antenatal checkups.

Key words: Antenatal, Pregnancy, Birth, delivery

Introduction:

Birth of an individual epitomizes an era of new beginning with new hopes but unfortunately this isn't as easy as it seems for a woman who has to give birth in a country with low resources and scarcity of healthcare services and primary healthcare just confined to mere management of minor ailments only and that too not distributed universally. Antenatal period begins as soon as a woman conceives and continues till the birth of the baby and lasting for about 9 months this period forces the women to endure certain risks that are quite common and minor and some that are quite rare and serious. A pregnancy may affect mental status of a woman, her general confidence; way of living temporarily or permanently, may deteriorate physical health or affect function of the body. Each year, approximately eight million women suffer pregnancy-related complications and over half a million die. 99% of all maternal deaths occur in developing countries. ¹ Every five minutes, one woman in India dies due to pregnancy related complications

amounting to one lakh maternal deaths and ten lakh newborn deaths every year. ²

India contributes significantly to the global burden of maternal deaths, more than 20% of maternal deaths occur in India. Pregnant women in India die due to a combination of various factors such as poverty or ineffective and unaffordable health services. ³

The common causes for maternal mortality include severe bleeding, infections, eclampsia, unsafe abortion, obstructed labor and social causes are poverty, illiteracy, too close pregnancies, poor environmental sanitation, delivery by untrained dais, and mainly due to lack of maternity services. ⁴ Antenatal care means care during such a crucial period of life that will result in a fruitful outcome in terms of healthy mother and healthy baby. It is evident that for leading a healthy life care should begin as early as possible so why not soon after conception? Currently in India the Maternal Mortality Ratio is 130 per lakh live births as per 2014-16 reports. ⁶ A large proportion of these deaths are preventable

by safe motherhood interventions via various national health programs run by Govt. of India. Some of the maternal health benefits schemes include mainly Janani Suraksha Yojana, Janani Shishu Suraksha Karyakaram, Vande Mataram Scheme, Indira Gandhi Matruva Yojana, Madilu Yojane and Prasoothiaraike. The main objectives of the maternal health benefits scheme are to promote institutional deliveries and to reduce maternal mortality rate & infant mortality rate. ⁴

Quality of care received by the mother and baby depend upon the place of delivery. If proper care is not taken during this child bearing process, it affects the overall health, especially the reproductive health of the women as well as the health of the new born child. ⁵

Janani Suraksha Yojana is a safe motherhood intervention under the National Rural Health Mission to promote institutional deliveries throughout the country.

Janani Suraksha Yojana is 100% sponsored by central government. The Yojana was launched on 12th April 2005. The primary component of Janani Suraksha Yojna are Early registration, Micro-Birth Planning, Referral transport (home to health institution and back), Institutional birth, post-delivery visit and reporting, family planning advice and Mother and Child Health counselling. ² The objective is reducing maternal and neo-natal mortality by promoting institutional delivery among the poor pregnant women.

Apart from this there are certain roles of ASHA under JSY i.e. ASHA is to act as a facilitator and is an important component of the JSY strategy¹⁰. The main roles are to identify pregnant woman as a beneficiary of the scheme and report or facilitate registration for ANC, assist the pregnant woman to obtain necessary certifications wherever necessary, provide and / or help the women in receiving at least four ANC including TT injections, IFA tablets, identify a functional Government health center or an accredited private health institution for referral and delivery, counsel for institutional delivery, escort the beneficiary women to the pre-determined health center and stay with her till the woman is discharged, arrange to immunize the newborn till the age of 10 weeks, inform ANM/MO about the birth or death of the children mother, post-natal visit within 7 days of delivery and track mother's health, counsel for initiation of breastfeeding to the newborn within one-hour of delivery and its continuance till 3-6 months and promote family planning. The compensation package for ASHA is available to her if she escorts/stays with the pregnant women in the health centers.

Additionally, in view of the difficulty being faced by the pregnant women and parents of sick new born along with high out-of-pocket expenses incurred by them on delivery and treatment of sick newborn. Government of India has launched Janani Shishu Suraksha Karyakaram (JSSK) on 1st June, 2011 to provide completely free and cashless services to pregnant women including normal deliveries and caesarean operations and sick new born and sick infants in Government health institutions in both rural & urban areas. ⁴

Aim & Objectives:

1. To estimate the utilization of Antenatal Care Services in the study area.
2. To find out various socio-demographic factors responsible for the pattern of utilization.
3. To recommend measures for improvement in the utilization.

METHODS:

The present study design consisted of a Cross-sectional Community based survey done from August 2018 to January 2019 on pregnant women residing in the study area during the period of data collection in Madlauda block of district Panipat. Permission was taken from institutional ethics committee for the study. Verbal consent was taken from study participants.

Inclusion Criteria:

1. Women who delivered live births in the last one year from date of interview.
2. Women who had given consent to participate in the study.

Exclusion Criteria:

1. Women who didn't give consent to participate in the study.
2. Women who could not be contacted even after three visits.

Minimum sample size:

243 (Considering delivery rate of rural Haryana) 80.4% as per NFHS-IV ⁶; $N=3.84pq/l^2$ ^{7,8}

This was rounded off to 250 so as to include equal number of study participants from 10 selected villages.

Sampling Technique:

At the first stage Madlauda block was selected out of the 5 blocks of District Panipat with the help of simple random sampling (chit method).

At the second stage, a list of all villages of the Madlauda block was obtained. It consisted of a total of 37 villages with about 27000 households. 10 villages out of these 37 were selected with the help of currency method after organizing them in alphabetical order and serializing. Out of each of the selected villages 25 study participants were interviewed.

Selection of households: After reaching the village, the center of the village was identified and by dropping a pencil a random street was indicated by the tip of the pencil. Then, house to house survey in the selected village was done starting from the selected street. At the end of the street a right turn was taken each time and a fresh adjacent street was selected when a dead end was reached or there was no turn in the street.

Selection of Mothers: Every mother who had an infant at the time of survey was interviewed in a household. Verbal informed consent was obtained before interviewing the mother. This was repeated till desired sample size of 25 from each of the selected village was met.

Study Tool: A pre-designed and pre-tested interview schedule was used to interview mothers after obtaining informed consent. It comprised of questions regarding socio-demographic characteristics of the study participants, medical & obstetrics history, awareness & registration of the JSY & JSSK, ante-natal care utilization.

Statistical analyses: The data were entered in the Excel spread sheet and statistical analysis was done using IBM SPSS v 20.0.0. Categorical variables were analyzed using frequency with proportions and percentages. Association between categorical variables was established by odd ratio using univariate analysis. Multivariate logistic regression model was used to establish adjusted odds. Goodness of fit for the selected models was ensured (Table 1, -2 log likelihood 1.473, $X^2=21.03$, $p<0.001$) (Table 2, -2 log likelihood 131.77, $X^2=935$, $p<0.001$). A p value of <0.05 was considered to be significant.

RESULTS:

Socio-demographic characteristics of study participants revealed majority age group of 25-30 years (52.8%) with majority belonging to joint families (69.34%) and Hindu religion (75.3%), General caste (51.9%), educational status shows majority being illiterate 47.54% while nearly one fourth of mothers had education of high school and above. Socio-economic status showed majority towards lower middle and middle class. (Modified BG Prasad, AICPI-301 Dec.2018)⁹

A great number 96% had antenatal registration. Only one third of the participants had ≥ 4 Antenatal Checkup. (Figure 1) and a really good number though not all 209 (83.6%) delivered their baby at a healthcare institute. All the ones who delivered at home were accompanied by skilled birth attendants. (Figure 2)

Almost all of the study participants (92.8%) got immunized by 2 doses of TT while the rest got single dose and only 1 of the participants was not immunized at all. All except three study participants received 100 IFA tablets while 2 had to take parenteral iron due to severe anemia and 1 didn't get any. The full IFA consumption rate was just 42.5%.

Multivariate analyses of the socio-demographic factors with the findings revealed that education status, caste, work and religion were significantly associated ($p<0.05$) with antenatal checkups and joint family type, education status, work status and religion were associated significantly with institutional deliveries. ($p<0.05$) The variables not found significant in univariate analyses were not included in multivariate analyses. (Table 1 & 2)

DISCUSSION:

This study showed that only one third study participants got the minimum required antenatal checkups i.e. ≥ 4 . Though institutional delivery rate was found to be high (83%), still a lot number of study participants had delivered their babies at home all accompanied by skilled birth attendants like ANMs. The antenatal registration findings are similar with Manish KS et al¹⁰ et al in which 97 % of the recently delivered women had ANC registration. The findings are better as compared to the estimates of DLHS-III¹¹, where almost 75% of women had at least one antenatal care visit. This could be due to a reason that day by day the health services in our country are improving and being conducted prior the later might have got poor results. Almost all of the study participants included in the present study got immunized by 2 doses of TT while some of them got only single dose and just one was not immunized at all. All except three study participants in the present study had received 100 IFA tablets. In a study conducted by Kakati R et al¹², 68.7% of the women had more the three antenatal visits. 71.6% of women consumed full course of IFA or at least 100 tablets and the association between ANC utilization and socioeconomic status, place of delivery and mode of delivery were found to be significant ($P<0.05$).¹² The full IFA consumption rate was just 42.5%. The findings of this study are bit lower than the Bui TT Ha et al¹³ 53.9% of the women had more than three antenatal visits. In Awasthi et al¹⁴ 60.7% of the mothers utilized the existing ANC care services well whereas the remaining 39.3% of the respondents showed poor utilization of antenatal care services. Also the same study reported that 82.0% of the mothers had consumed Iron/Folates out of which a further 68.3% of them had consumed the tablets up to 45 days after delivery and 70.0% of respondents had received TT Vaccines out of which only 65.7% of respondents received both doses with the remaining mothers either receiving a single or a booster dose of the TT Vaccine during their pregnancy. 59.51% of the mothers in the area had three or more antenatal visits in a study reported by Danasekaran et al.¹⁵ The proportion of women with 4 or more ANC visits is considerably lower than the global average of 61.8% and implementing the recent WHO recommendation of a minimum of 8 ANC visits will be a major challenge for the national program in India.¹⁶ The number of ANC visits may also be critical to the delivery of other components of ANC and to provide adequate follow-up of pregnant women closer to delivery.¹⁷ The difference was also noted in findings of NFHS III¹⁸ indicate that 67.5% of mothers had at least three antenatal checkups. Health functionaries particularly MPH-W-F, ASHA, and Anganwadi workers need to be sensitized to ensure timely registration and referral of high-risk pregnancies. TT immunization rate was 92.8 % which is more as compared to findings in Sonia P et al¹⁹ in which the TT immunization was 70% while Parul S et al²⁰ found all the women received complete TT immunization. This study showed that consumption of IFA tablets was 42.5% which is almost comparable to the findings of Tanmay P et al²¹ in which consumption of 100 Iron Folic acid tablets was 46.0% and also in Parul S et al²⁰ which showed consumption to be 48%. The reason for low

IFA tablets consumption could be attributed to low literacy level among mothers of rural areas and minor effects of the drug like metallic taste. The high proportion of mothers with at least one tetanus toxoid immunization can be achieved even in a single visit during any trimester. In contrast, 100 days of IFA consumption is possible only if multiple visits are and lower number of visits may be a reason for low utilization for 100 days of IFA. The institutional delivery rate was found to be almost similar to the state estimates. The result was better in comparison to Vikram K et al²² institutional delivery rates was found to be 71% and also Nazil K et al²³ where 68.6% women had institutional deliveries. Further continuation of this study in the form of follow up would reveal the outcome of service utilization. Awasthi et al¹⁴ revealed that age ($p=0.001$), education levels of respondents ($p=0.001$), and type of family of respondents ($p=0.001$) were strongly associated with utilization of the ANC services. Also, in Vikram K et al²² the women belonging to Hindu religion and having more than six ANC visits during pregnancy were significant predictors of women availing antenatal care benefits. This study also showed that being educated, Hindu religion, general caste and non-working had more odds of availing antenatal care services as well as institutional deliveries as shown in the regression model (Table 1, 2) these findings are consistent with the study of Lim et al²⁴, which showed that the poorest and least educated women did not have the higher odds of receiving antenatal services, JSY benefits and stressed on the need to target these women. Keeping institutional delivery as dependent variable the odds of undergoing institutional delivery was more in nuclear family type, working, literate and Hindu religion. Similar findings have been in picture since an era of time and improvement in the same regards is just on papers.

CONCLUSION:

Utilization of antenatal services in terms of antenatal checkups was quite low as only one-third of the study participants had minimum Antenatal checkups. Institutional deliveries were seen among most of the participants while all were attended by skilled birth attendant at home. Utilization of Antenatal service utilization still needs improvement in the concerned study area. The significant variables found in this study like family type and religion indicates the priority groups to receive health awareness and the rest variables require overall development to improve the health status of women in this country.

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Figure 1: Depicting number of antenatal checkups in the study participants (N=250)

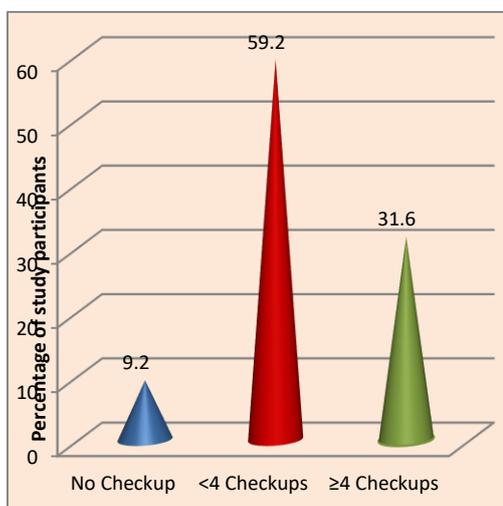
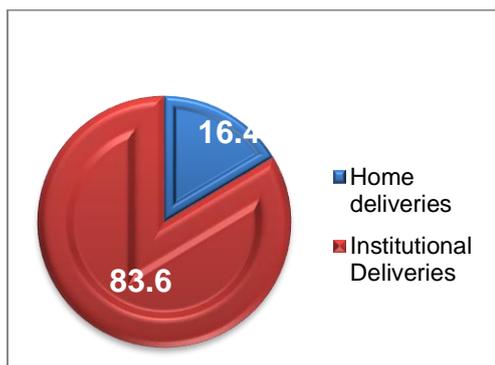


Figure 2: Pie chart showing percentage of institutional deliveries among the study participants



Socio-demographic characteristics of study participants revealed majority age group of 25-30 years (52.8%) with majority belonging to joint families (69.2%) and Hindu religion (75.6%), General caste (52%), educational status shows majority being illiterate 47.2% while nearly one fourth of mothers had education of high school and above. Socio-economic status showed majority towards lower middle and middle class.

Table 1: Multivariate analyses showing relationship between various socio-demographic factors and antenatal checkups (N=227)

Factor		N (%)	Odds	95% CI	P value	B
Education	Literate	129 (57)	7.2	1.73-4.7	0.0001	0.976
	Illiterate	98 (43)	1	---		
Caste	General	123 (54.1)	1	---	0.421	1.06
	Others	104 (45.9)	0.82	0.21-3.72		
Work status	Working	20 (8.8)	0.72	0.17-3.07	0.342	-1.32
	Not working	207 (91.2)	1	---		
Religion	Hindu	172 (75.7)	1	---	0.0001	-14.89
	Muslim	30 (13.2)	0.69	1.65-9.34		

Table 2: Multivariate analyses showing relationship between various socio-demographic factors and institutional deliveries. (N=209)

Factor		N (%)	Odds	95% CI	P value	B
Family type	Joint	163 (78)	0.63	1.48-10.3	0.006	-5.724
	Nuclear	46 (22)	1	---		
Education	Literate	119 (57)	3.9	0.94-6.65	0.562	-12.547
	Illiterate	90 (43)	1	---		
Work status	Working	16 (7.6)	2.1	1.46-4.86	0.007	-19.831
	Not working	193 (92.4)	1	---		
Religion	Hindu	177 (84.6)	1	---	0.0001	0.188
	Muslim	15 (7.17)	0.59	0.23-1.5		
	Others	17 (8.14)	0.76	0.34-1.82		

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