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RESEARCH ARTICLE

DETERMINANTS OF ANTENATAL CARE UTILIZATION OF SCHEDULED CASTE WOMEN IN THIRUVARUR DISTRICT, TAMILNADU

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ABSTRACT

Objective: To evaluate the determinants of antenatal care utilization of scheduled caste women in Thiruvarur district, Tamilnadu.
Methods: Multistage stratified random sampling technique was applied to select the respondents from the Thiruvarur district for the research purpose. There were 1164 households with the target population. Totally 1203 women in the age group of 15-24 were identified in all the five blocks. Thus, in all, 661 respondents were selected following circular systematic random sampling technique. Of these 661 respondents, 605 completed the questionnaire, 32 respondents declined to participate and 24 respondents completed scheduled that had to be discarded of substantial inconsistency, yielding a response rate of 91.5 percent.
Results: Overwhelming majority of the SC women made at least one visit for the antenatal care service during their pregnancy episode (94.4 percent). Only ten percent of SC women received full ANC during their pregnancy period. As compared with illiterate women, women with higher education were about 16 times more likely to receive full ANC. The proportion of women who receive full ANC increased steadily and was positively associated with the wealth indexes, when compared to the poorest, the receiving pattern of full ANC on richest women 26 times higher.
Conclusion: Education of women, standard of living index, birth order, exposure to mass media, distance between health care facility and home were significantly associated received complete ANC in the study area. Hence, improving ANC services could be a good strategy to promote status of pregnant mother as well the new born child.

INTRODUCTION

The Indian caste system is a highly complex institution, though social institutions resembling caste in one respect or another are not difficult to find elsewhere, but caste is an exclusively Indian phenomenon. The "Scheduled Castes" is the legal and constitutional name collectively given to the groups which have traditionally occupied the lowest status in Indian society and the Hindu religion which provides the religious and ideological basis for an "untouchable" group, which was outside the caste system and inferior to all other castes. Today, untouchability is outlawed, and these groups are recognized by the Indian Constitution to be especially disadvantaged because of their past history of inferior treatment, and are therefore entitled to certain rights and preferential treatment. From a sociological point of view, apart from their increasing visibility the most significant contemporary fact concerning the Scheduled Castes is their growing political assertion and identity formation as 'Dalit'. As pointed out by Beteille, it is not easy to form a single consistent view of the present position of the Scheduled Castes because the regional diversity is so large and the balance between continuity and change so uncertain.

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Whereas in the past the social condition of the Scheduled Castes was governed strongly by the ritual opposition of purity and pollution, the calculus of democratic politics has become important today (Beteille, 2001). In 1994, at the ICPD, governments agreed to provide "universal access" to reproductive health by 2015 as part of a package for improvement of people's health and wellbeing, reduction of population growth, and promotion of sustainable development (UN, Report of ICPD, 1994). Practically, the burden of ill-health can be reduced only if access to affordable services that deliver high-quality sexual and reproductive health care becomes universal. The ICPD consensus was reaffirmed at the UN General Assembly Special Session in 1999 (UN, Key actions of ICPD, 1999), yet the central ICPD goal of universal access to reproductive health was excluded from the 2000 Millennium Declaration (UN, Millennium Declaration, 2000) and from the eight Millennium Development Goals (MDGs) formulated in 2001. (UN, Millennium Declaration, 2001). Care of mother and child occupies a paramount place in our health service delivery system. Sincere efforts are being made in the country to bring about an improvement in the health status of the mother and child. An important aim of the national health policy is to achieve 100 per cent ANC coverage (National Health Policy, 1985) Today, in developing countries, the mothers are illhoused, poorly nourished, and

largely ignorant of what is good for them and their babies. Until people prosper and economic benefits become widely spread, prenatal surveillance can provide the care needed to offset some of the harmful effects of large scale poverty and under development (Harrison, 1985). In support of this view, it has been almost universally observed that the vast majority of deaths in child birth occur among emergency admissions of women who had no previous care whatsoever. The national Child Survival and Safe Motherhood Programme of India has enunciated that a minimum of three ante-natal visits covering the entire period of pregnancy can be considered satisfactory and should be the target (MCH, 1994).

Systematic studies in developing countries like India show that ante-natal care is effective but it is, however, scarce. Hence, it has become necessary to understand factors influencing utilisation of ante-natal care services and quality of ante-natal care in different areas of the country. Utilization of reproductive health services is in turn related to their availability and socioeconomic, demographic and cultural factors such as women's age, education, employment, caste ant autonomy (Obermeyer, 1991; Stewart, Sommerfelt, 1991; Elo, 1992). There is general consensus that the health status of the scheduled caste population is very poor and worst (MOHFW, 1997). With this backdrop, this paper evaluates the determinants of antenatal care utilization of young married scheduled caste women in Thiruvarur district.

MATERIALS AND METHODS

Selection of the Taluks: Multistage stratified random sampling technique was applied to select the respondents from the Thiruvarur district for the research purpose. Selection of the taluk was the first step in the multistage stratified sampling techniques. Thiruvarur district had totally seven Taluks, which comprise 573 revenue villages and 430 panchayat villages. In the first stage, out of seven taluks, it was decided to select five taluks. These five taluks represent the geographical area of the study district namely,

Selection of the Sample Blocks: In the second stage, the purposive sampling technique was applied to select the blocks, for the convenience of research work. The selected blocks were Nannilam, Thiruvarur, Tiruturaipundi, Valangaiman, and Mannargudi.

Selection of the Sample Villages: The selected five blocks totally comprise 352 revenue villages. During the third phase, an attempt was made to find out the villages which had more than 50 percent of scheduled caste population. The total number of these villages was 87. These villages were spread as follows; the Nannilam block has 16 villages, Thiruvarur block comprises18 villages, Tiruturaipundi block has 16 villages, Valangaiman block and Mannargudi block have 18 villages, and 19 villages respectively. Out of the 87 villages, around one-third of the villages were selected from each of the blocks by lottery method. The total number of selected villages was 28.

Selection of the Sample Respondents: After identifying the villages in each block, house listing operation was carried out in each of the selected villages prior to the data collection to provide the necessary frame for selecting the households for the study. Totally 6376 houses were listed in all the five blocks. Identification of eligible married young women (15-24 years) in each household was the next step in the research. There were 1164 households with the target population (39 households had two couples in the same house). Totally 1203 women in the age group of 15-24 were identified in all the five blocks. These women were living with their husbands and had given at least one birth given one year prior to the survey. It was planned to select half of the population in each of the sample villages i.e., 601 was fixed as the sample size of the study. In order to take care of non-response due to various reasons, an extra 10 percent of respondents were included in the sample. Thus, in all, 661 respondents were selected following circular systematic random sampling technique. Of these 661 respondents, 605 completed the questionnaire, 32 respondents declined to participate and 24 respondents completed scheduled that had to be discarded of substantial inconsistency, yielding a response rate of 91.5 percent.

Pregnancy registration

The first visit or registration of a pregnant woman for ANC should take place as soon as the pregnancy is suspected. Every married woman in the reproductive age group should be encouraged to visit health provider or inform if she believes herself to be pregnant. The early registration of pregnancy is required to (RCH, 2002):

- Assess the health status of the mother and obtain baseline information on blood pressure (BP), weight, haemoglobin, etc.
- Screening for pregnant women for major health, nutritional and obstetric problems
- Identification of women with health problems/complications, providing prompt and effective treatment including referral wherever required
- Universal coverage of all pregnant women TT immunization
- Screening for anaemia and providing IFA tablets to prevent anaemia
- Advice on food, nutrition and rest
- Promotion of institutional and safe deliveries by
- trained personnel, etc.

Under this view, in the study area, the respondents were asked whether they registered their pregnancy or not. The detail of pregnancy registration is presented in Table 1. The Table 1 shows that overwhelming majority of women registered their pregnancy by visiting health care centre or at the home itself by the health workers (94.4 percent) and only six percent of women did not register their pregnancy. It can be concluded that either women were aware of the importance of registration of pregnancy or the village health workers played a vital role in the study area.

Antenatal Care (ANC)

Antenatal care is the systemic medical supervision of women during pregnancy. Its aim is to preserve the physiological aspect of pregnancy and labour and to prevent or detect, as early as possible, all that is pathological. Early diagnosis during pregnancy can prevent maternal ill-health, injury,

maternal mortality, foetal death, infant mortality and morbidity. Hence, the earlier in pregnancy a woman comes under the supervision of an obstetrician and the better utilization rate of the ANC service results in lowering the risk of maternal mortality (Kilpatrick and Sarah, 2002). Proper antenatal care ensures at the end of pregnancy, a healthy mother and a healthy baby. Ideally, the natal care should begin soon after conception and continue throughout the pregnancy. There was clear association between infant mortality rate and lack of or poor quality antenatal care and mothers who had not received good quality antenatal care were found to be more at risk of having low birth weight babies (Nair, et. al., 2000).

Antenatal Visit

Care of mother and child occupies a paramount place in our health service delivery system. Efforts are being made in the country to bring about an improvement in the health status of the mother and child. An important aim of the national health policy is to achieve 100 percent ANC coverage. A pregnant woman should receive the antenatal services by visiting a doctor/another health professional in a medical facility, or receiving at home visit by a health worker. Further, the National Child Survival and Safe Motherhood Programme of India has enunciated that a minimum of three ante-natal visits covering the entire period of pregnancy can be considered satisfactory and should be the target (MCH, 1994). With this view, the present study collected information about the ANC services in the study area and the same is analysed in the below section. The Table 2 documents that overwhelming majority of the SC women in the study area made at least one visit for the antenatal care service during their pregnancy episode (94.4 percent) and around six percent of these women did not made a single antenatal care visit during their pregnancy period. Again it proved that the SC women in the study area had more awareness about utilizing ANC services.

Table 3 shows the percentage of women who had received antenatal care during pregnancy period by place of first antenatal care received. The table reveals that only about four percent of women received the first antenatal service at their house itself and around 41 percent of women received their first antenatal service at the primary health centers. Just little above one-third of the SC women received the antenatal service from government hospitals (34 percent) and another one-fifth of women received antenatal care at the community health centre (21.2 percent). It can be concludes that all the SC women who had received the ANC services, were obtains the services from public health facilities and no one received ANC services from private sector.

Antenatal Care Services and Information

The effectiveness of antenatal care ensuring safe motherhood depends in part on the tests and measurements done and the advice given as part of antenatal care. In this study, the information was collected on this important aspect of antenatal care by asking women who received antenatal care whether they received each of several types of service or information at any time as part of their antenatal care. Table 4 shows the percentage of mothers who received selected services during antenatal care visit. All of these measurements and tests are part of essential obstetric care or are required for monitoring high-risk pregnancies. Among women receiving antenatal care for their most recent birth, cent percent of women went for urine and blood test and all of them undergone blood pressure test. It is found that the measuring of blood pressure and testing of urine and blood was quite familiar among the SC communities. With regard to measuring of weight and height of the pregnant women, comparatively more women's weight was measured (94.7 percent) than their height (61.8 percent) in the study area. It is also observed that about ninety percent of the women's abdomen was examined during ANC visit. The type of advices received by women during ANC visit for the last live birth is presented in the Table 5. The table shows that quite a significant proportion of SC women received advice on diet (81.4 percent), breast feeding (80.2 percent) and care for the new born babies (79.1 percent) during their pregnancy episode. During their contacts with health workers, pregnant women are expected to be told about the sign of pregnancy complications and where they should go if they have pregnancy complications. In this study, women who received antenatal care for the most recent birth were asked whether they were told about the signs of pregnancy complications and where to go if they experienced any of these signs. The table discloses that only around 70 percent of SC women received advice on delivery as well as the danger sign of pregnancy. It is also noticed from the above table that women were less likely to receive advice on family planning (67.8 percent). It can be concluded that in the study area, the respondents received much information/advice on their diet and breastfeeding than the family planning and other services.

Number and Timing of First Antenatal Visit

The number of antenatal care visits and the timing of the first ANC visit are important for the health of the mother and outcome of the pregnancy. The World Health Organization recommends that all pregnant women should receive at least four antenatal care (ANC) assessments by or under the supervision of a skilled attendant (WHO, 2006). In India, the Reproductive and Child Health program emphasizes the provision of at least three antenatal visits under the supervision of a skilled attendant (MOHFW, 1997). Studies on the timing of the initial antenatal check-up, however, show that even when antenatal care is initiated as late as the third trimester, there is a substantial reduction in perinatal mortality (Ramachandran and Prema 1992). With this backdrop, women who received ANC for the most recent birth asked about the total number of ANC visits they had during pregnancy and when they had their first ANC visit as presented in Table 6.

The Table 6 discloses that among scheduled caste married young women, almost half of respondents visited 4-5 times the antenatal care during their pregnancy period (49.2 percent) and another ten percent had more than 6 ANC visits. It is also observed that one-fifth of women had 1-2 visits for ANC (20.7 percent). It is concluded that quite a significant proportion of SC women had followed the RCH programme recommendation with regard to the number of ANC visits (79.3 percent). Table 7 explains the percentage distribution of women according to the timing of first antenatal visit. It is seen from the table that 3 percent of women made their first ANC visit in the first month of their pregnancy period. It is also observed Table 7 that 10 percent of women had visited during their second month of pregnancy. More than one-fifth of women made visit the first antenatal visit during the third

month of their pregnancy (21.7 percent). Overall, among the Scheduled Caste (SC) currently married young women, more than one-third of women made their first visit for antenatal care within the first trimester (34.7 percent) and another two-third of SC women made their first antenatal care visit only during second trimester of their pregnancy episode (65.3 percent). Little more than one-third of women made visit their first antenatal care visit in the fourth month (34 percent) and another one-fifth women made the visit in their fifth month of pregnancy (20.5 percent). Around eleven percent of women visited the health facility for the first time during the sixth month of their pregnancy for ANC services. It can be found that though the receiving pattern of ANC services is appreciable, their timing of receiving the ANC service is not much appreciable.

Components of Antenatal Care

Important elements of antenatal care include provision of two doses of tetanus toxoid vaccine, the iron supplementation for pregnant mothers and a drug to get rid of intestinal worms. The Reproductive and Child Health (RCH) programme recommends that as part of antenatal care, a woman should receive two doses of tetanus toxoid vaccine, to prevent nearly all tetanus infections in both mother and her newborn children (RCH, 2002b). According to the National Immunization Schedule, a pregnant woman should receive two doses of tetanus toxoid injection, the first when she is 16 weeks pregnant and the second when she is 20 weeks pregnant (Roy et al., 2004). With this background, this study made an attempt to collect information on number of TT injections received by the pregnant women. The Table 8 shows that in the study area, two-third of women received two doses of TT injection (67.1 percent). At the same time around 30 percent of women received only one TT injection. It is also observed that about 3 percent of women did not receive a single dose of tetanus toxoid injection during their pregnancy period. In general, the practice of receiving TT injection among the study area population is more appreciable and it is above the national average (66.6 percent - DLHS-3, 2007-08).

Iron Supplementation

Nutritional deficiencies in women are often exacerbated during pregnancy because of the additional nutrient requirement of foetal growth. Iron deficiency anaemia is the most common micronutrient deficiency in the world (UNICEF, 2008). It is a major threat to safe motherhood and to the health and survival of infants, because it contributes to low birth weight, lowered resistance to infection, impaired cognitive development, and decreased work capacity. The provision of iron and folic acid (IFA) tablets to pregnant women to prevent nutritional anaemia forms an integral part of the safe motherhood services offered as part of the reproductive and Child Health Programme in India. The Reproductive and Child Health (RCH) programme recommendation is that pregnant women should consume at least 90 tablets of IFA during their entire pregnancy period (MOHFW, 1998a). Table 9 shows the percentage of women who consumed iron folic acid tablets/syrup during pregnancy period. Overwhelming majority of the study population consumed IFA supplements (98.9 percent) and the remaining very negligible proportion of women did not consume any IFA supplements during their pregnancy episode (1.1 percent). In the study area, the women were further asked about their consumption pattern of IFA tablets/syrup (number of tablets during pregnancy episode). The above Table 10 highlights that only one fourth of women had consumed 90 or more tablets during their pregnancy period (24.4 percent) which is recommended by Reproductive and Child Health Programme, Government of India. And another 40.6 percent of women had consumed between 75-89 IFA tablets during their pregnancy period. It reveals that the consuming of IFA supplements is not much appreciable among the SC community.

Full/Complete Antenatal care

The Reproductive and Child health Programme recommends that as part of antenatal visit, pregnant women should receive two doses of Tetanus Toxoid vaccine, adequate number of Iron Folic Acid tablets (at least 90 tablets) to prevent and treat anaemia and at least three visits that included first visit in first trimester (MOHFW 1998b). Likewise, the DLHS-3 defines full ANC as "at least three visits for ANC check up, at least one TT injection received and 100 IFA tablets/syrup consumed". In this study the RCH definition for full/complete ANC was adopted. The collected information on full/complete ANC is presented in the Table 11. The Table 11 highlights that only ten percent of SC women received full ANC during their pregnancy period which is recommended by RCH, Government of India. However majority of the women in the study area received any one kind of ANC during their pregnancy period (84.0 percent). It is also noticed that around 6 percent of SC women in Thiruvarur district had not received any kind of antenatal care during their pregnancy period.

Determinants of Antenatal Care Utilization

This section examines, (Table 12) by means of a bivariate analysis, the relationships between the dimensions of antenatal care and the independent variables, representing age, education of women, occupation of women, standard of living index, age at marriage, birth order, exposure to mass media and distance to health centre.

Number of Antenatal care visit

As said in the previous section, the number of ANC visits is the important factors for the health of mother and outcome of the pregnancy. India's Reproductive and Child Health Program emphasizes the importance of provision of at least three antenatal visits under the supervision of skilled attendants. With this view, the below section discusses the number of ANC visits made by the SC women, according to their background conditions. Table 12 shows the percentage distribution of mothers who had a last live birth in the one year preceding the survey according to the number of ANC visits by SED characteristics. The proportion of women who had visited the ANC centre three or more times for the latest birth was higher among the 18-20 years age group women (87.2 percent) than among 24 age group women (59.2 percent). With regard to the proportion of mothers who had not visited health care centre during pregnancy for the most recent birth was higher among older mothers (10.2 percent- 24 years) than among younger women (3.2 percent among 18-20 years). The data suggest that the relationship between number

of ANC visit and age of women shows a negative association a with Chi-square value of 30.25 at p= .000. Further, the data discloses that the number of ANC visits sharply increases with the women's educational level. The proportion of women who had visited ANC center more than three times was three fold among women who had completed higher secondary and above (94.0 percent) than the illiterate women (31.2 percent). And this proportion for the women who had completed primary level of education was 55.4 percent and 78.2 percent for secondary level of women. Overall, women's education had a strong significant relationship with the number of ANC visit. The Chi-square results reveal that the number of ANC visit was statistically significant with the level of women's education with a Chi-square value of 59.59 at p= .000. The analysis of number of ANC visit for their latest birth and the women's occupation shows a substantial difference. More than three-fourth of women who were working in non-agricultural sector made at least three visits for the ANC (88.8 percent), whereas this proportion for women working in the agricultural sector was 72.7 percent and for non-working women was 65.9 percent. It is seen from the table that the number ANC visit was significantly associated with women's occupation with a Chi-square value of 30.77 at p= .000.

It is observed from the table that in the study area, the level of standard of living condition among the SC women shows strong association with the number of ANC visits. The finding indicates that the proportion of women in households in the high wealth quintile was more likely to visit three or more ANC visits (90.6percent) than women who in medium (87.1 percent) and in low wealth quintile (54.7 percent). Further, the table discloses that number of ANC visits was significantly associated with women's wealth index with a Chi-square value of 82.71 at p= .000. It shows that there was a consistent increase in the percentage of women who made three or more number of ANC visits with an increase in women's standard of living condition. It also explained that the age at marriage of women and the number of ANC visits made by the respondents had positive association. The women who married at later age (22 and above years) were more likely to visit three or more times for ANC (92.9 percent) than those who married at an early age (44.4 percent among less than 18 years; 67.4 percent among 18-19 years). As shown in table 12, the age at marriage was significantly associated with the number of ANC visits with a Chi-square value of 32.34 at p= .000. It is found that there were significant differences in the percentage of women by number of ANC visit with child birth order. The higher birth order pregnancies were less likely to visit three or more times for ANC (21.2 percent) than lower birth order pregnancies (89.6 percent). It is observed from the table that the birth order had a significant impact upon number of ANC visits with a Chi-square value of 36.78 at p= .000. The impact of mass media exposure of the respondents on number of ANC visits shows a strong positive association. The women who were exposed frequently to mass media visited three or more times the health care centers (84.1 percent) than less exposed women (68.3 percent). It is observed from the table that women's exposure to media had a strong association with the number of ANC visits with a Chi-square value of 20.3 at p= .000. The table discloses that quite a significant proportion of women (89.7 percent) residing within one Km radius of health care centers visited three or more times ANC centre more than women residing four Km away from health facilities (68.3 percent). It shows that the proportion of visiting number of ANC decreased when the distance between health facilities increased. The statistical finding shows that the distance between health facilities and place of residence had a significant association with the number of ANC visits with Chi-square value of 22.61 at p= .000.

Full/Complete antenatal care package

The Reproductive and Child health Programme recommends that as part of antenatal care, pregnant women should receive two doses of Tetanus Toxoid vaccine, adequate number of Iron Folic Acid tablets (at least 90 tablets) to prevent and treat anaemia and at least three visits that included first visit is in first trimester. This is called full ANC coverage or complete ANC coverage. Under this circumstance, in this section an attempt was made to analyze the percentage of women who received full/complete ANC package according to their background conditions which is presented in Table 13. The Table 13 explains that the relationship between the proportion of women who received full ANC package and age of women and it shows a positive association. It is seen from the table that the younger women (18-20 age group) were more likely than older women to receive full antenatal care package. The table discloses that women at the age of 18-20 years were more likely to receive full ANC package (11.1 percent) than those at 21-22 (10.8 percent) and 24 years (8.1 percent). The finding of Chi-square test shows a significant association with the age of women and receiving pattern of full ANC package with a Chi-square value of 9.43 at p= .051. When looking for the correlation between women's education and receiving pattern of full antenatal care package, it shows a positively association. The proportion of women who received full ANC was quite significant among women who had completed higher secondary and above education (30.0 percent) than the illiterate women (6.2 percent). And this proportion for women who completed primary level of education was only 8.8 percent and the women who completed the secondary level of education was also 8.9 percent. Overall, women's education had a strong significant relationship with receiving pattern of full ANC package. The Chi-square results reveal that the receiving pattern of complete ANC package was statistically significant with the women's education with a Chi-square value of 59.13 at p= .000. A substantial association was noticed between women's occupation and receiving of full ANC package. Around 16 percent of women who were working in non-agricultural sector received the full ANC services, whereas this proportion for women working in the agricultural sector was 9.5 percent and for non-working women was 7.3 percent. It is seen from the table that the receiving pattern of complete ANC services was significantly associated with the women's occupation with a Chi-square value of 31.57 at p= .000. The association between women's standard of living condition and receiving pattern of full antenatal care package indicates that women in households in the highest wealth quintile were more likely to receive full antenatal care package (50.9 percent) than women in household in the lowest quintile (3.5 percent). Further, the table shows that the receiving pattern of full ANC package was significantly associated with level of women's wealth index with a Chi-square value of 69.56 at p= .000.

The women who got married above the age of 22 years were more likely to receive full ANC package (31.0 percent) than married at less than 19 years (5.9 percent). It is also noticed that even a single woman who married before 18 years did not receive the full ANC package during their latest pregnancy episode. The receiving pattern of full ANC package had a strong and statistically significant association with the age at marriage with a Chi-square value of 34.08 at p= .000. Another demographic variable the birth order shows a significant impact on receiving pattern of full ANC services. Birth order had a negative impact on the receiving pattern of full ANC package. Women with first birth order were more likely to receive full ANC package (14.8 percent) than the second birth order (4.4 percent) and no one received the complete ANC for their third birth order. Further the Chi-square result reveals that birth order was strong and statistically significant with a value of 34.12 at p= .000. The data reveal that the proportion of women who received full ANC package was higher for women who were more exposed to media (18.2 percent) than less exposed women (4.8 percent). The result shows the association between women's exposure to media and receiving pattern of full ANC package with a Chi-square value of 29.32 at p= .000. The table reveals that a significant proportion of women residing within one Km radius of health care centers received full ANC package (16.7 percent) than women residing four Km away from health facilities (8.1 percent). It shows that the proportion of receiving pattern of full ANC package decreased when the distance to health facilities increased. The finding shows that the distance between health facilities and place of residence was significantly associated with receiving pattern of full ANC package with a Chi-square value of 13.45 and p= .009.

Table 1. Percentage distribution of women by Pregnancy registration

Pregnancy registration	Number of women	Percentage
Yes	571	94.4
No	34	5.6
Total	605	100.0

Table 2. Percentage distribution of women by Antenatal visit

Antenatal visit	Number of women	Percentage
Yes	571	94.4
No	34	5.6
Total	605	100.0

Table 3. Percentage distribution of women by Place of first antenatal visit

Place of first antenatal visit	Number of women	Percentage
Home	22	3.8
Primary health centre	234	41.0
Community health centre	121	21.2
Government Hospital	194	34.0
Total	571	100.0

Logistic Regression examining the effect of background characteristics on received full/complete ANC service

The logistic regression analysis results Table 14 shows that the odd ratios (Exp (B)) indicate the effect of each of the predictor

Table 4. Percentage distribution of women by Various checkups received during antenatal visit (Multiple responses)

Various check-ups received during antenatal visit	Number of women	Percentage
Blood pressure check	571	100.0
Blood test	571	100.0
Urine test	571	100.0
Weight measured	541	94.7
Abdomen examine	513	89.8
Height measured	353	61.8
Total	571	100.0

Table 5. Percentage distribution of women by Various advices received during antenatal visit (Multiple responses)

Various advices received during antenatal visit	Number of women	Percentage
Diet	465	81.4
Breast feeding practices	458	80.2
New born care	452	79.1
Delivery care	399	69.9
Danger sign of pregnancy	396	69.3
Family planning	387	67.8
Total	571	100.0

Table 6. Percentage distribution of women by Number of antenatal care visits

Number of ANC visits	Number of women	Percentage
One visit	25	4.4
Two visits	93	16.3
Three visits	113	19.8
Four visits	165	28.9
Five visits	116	20.3
Six or more visits	59	10.3
Total	571	100.0

Table 7. Percentage distribution of women by Timing of first antenatal visit

Timing of first antenatal visit	Number of women	Percentage
Within first trimester	198	34.7
First month	18	3.2
Second month	56	9.8
Third month	124	21.7
Second trimester	373	65.3
Forth month	194	34.0
Fifth month	117	20.5
Sixth month	62	10.8
Total	571	100.0

Table 8. Percentage distribution of women by Tetanus Toxoid vaccination received

Tetanus Toxoid injection	Number of women	Percentage
Received two or more	383	67.1
Received one injection	169	29.6
Not received TT injection	19	3.3
Total	571	100.0

Table 9. Percentage distribution of women by Consumed IFA tablets/syrup

Consumed Iron Folic Acid tablets/syrup	Number of women	Percentage
Consumed IFA tablets	565	98.9
Not consumed IFA tablets	6	1.1
Total	571	100.0

variables on the pattern of receiving complete ANC package, controlling other variables included in the model. The results of the multivariate analysis are presented in the form of regression coefficients and odds ratio. Estimates of odds less than 1.0 indicate that the not received complete ANC is less than that for the reference category of each variable and estimates of odds greater than 1.0 indicate that the receiving pattern of complete ANC is greater than that for the reference category. The results of the logistic regression model comprise the practices of receiving of complete ANC with those of not receiving complete ANC package (Not received complete ANC = 0; received complete ANC coverage= 1). The binary logistic regression analysis result shows that education of women, standard of living index, birth order, exposure to mass media, distance between health care facility and home were significantly associated with the dependent variable (received complete ANC) in the study area. The age of women, religion, occupation of women, type of family, duration of marital life, age at marriage, duration of marital life and age at first child were not shown to have any kind of statistical association with the dependent variable with the respective reference categories. As compared with illiterate women, women with higher education were about 16 times more likely to receive full ANC. The wealth index shows a strong positive association with the indicators of ANC service. The proportion of women who receive full ANC increased steadily and was positively associated with the wealth indexes, when compared to the poorest, the receiving pattern of full ANC on richest women 26 times higher. Table 14 shows that the birth order (OR= 0.771) had significant negative effect on the complete ANC coverage. The women who had more expose to mass media were more likely to receive complete ANC package than the less exposed women (OR= 3.797). Distance between home and the health facilities had significant negative effect on the pattern of receiving full ANC. When compared to women living within 1 Kilometer distance from health facility, the women living more than 4 kilometers away from the health facilities were less likely to receive the full ANC coverage (OR= 0.757). All other variables did not pose significant effect on full ANC package.

DISCUSSION

Every married woman in the reproductive age group should be encouraged to visit health provider or inform if she believes herself to be pregnant. The first visit or registration of a pregnant woman for ANC should take place as soon as the pregnancy is suspected. Here in this study region also, an overwhelming majority of women registered their pregnancy by visiting health care centre or at the home itself by the health workers (94.4 percent). Proving antenatal care is the next step to lead a healthy reproductive life which means systemic medical supervision of women during pregnancy. This effective antenatal care (ANC) can improve the health of the mother and give her a chance to deliver a healthy baby. Regular monitoring during pregnancy can help detect complications at an early stage before they become life-threatening emergencies. An important aim of the national health policy is to achieve 100 percent ANC coverage. In the study area, of the total 605 respondents, almost all the women made at least one visit for the antenatal care service during their pregnancy episode (95 percent) and it may be at primary health centers (41 percent) or at community health centre (21.2 percent) or at government hospitals (34 percent). Examination of urine and blood were most common obstetric care received during the antenatal care for their most recent birth. Majority of women's abdomen was also checked during their ANC visit. Similarly a significant proportion of SC women received advice on diet (81.4 percent), breast feeding (80.2 percent) and care for the new born babies (79.1 percent) during their pregnancy episode. Around 70 percent of SC women received advice on delivery as well as the danger sign of pregnancy. However, women are less likely to receive advice on family planning (67.8 percent). National Child Survival and Safe Motherhood Programme of India has enunciated that a minimum of three antenatal visits covering the entire period of pregnancy can be considered satisfactory and should be the target (MCH, 1994). However, in the study area, about one-fifth of women had 1-2 visits for ANC (20.7 percent). Though significant proportion of respondents made minimum of number of ANC visit, nearly two-third of SC women made their first antenatal care visit only during second trimester of their pregnancy episode (65.3 percent). Important elements of antenatal care include provision of tetanus toxoid vaccine, and the iron supplementation for pregnant mothers. According to the National Immunization Schedule, a pregnant woman should receive two doses of tetanus toxoid injection, nonetheless, among the study population two-third of women received two doses of TT injection (67.1 percent) and around 30 percent of women received only one TT injection. Though overwhelming majority of the study population consumed IFA supplements (98.9 percent). Only one-fourth of women had consumed 90 or more tablets during their pregnancy period (24.4 percent). As the national ealth policy of India recommends ANC coverage of 100 per cent, we therefore need to concentrate our efforts to improve literacy among women and also, adopt and implement social welfare schemes for socially disadvantaged caste groups (BCs & SCs/STs). Several studies (Shalini *et al.,* 1998: Erica and Sue, 1989; Adriasola *et al.,* 1977). The Reproductive and Child health Programme recommends that as part of antenatal visit, pregnant women should receive two doses of Tetanus Toxoid vaccine, adequate number of Iron Folic Acid tablets (at least 90 tablets) to prevent and treat anaemia and at least three visits that included first visit in first trimester (MOHFW, 1998). This coverage is treated as full/complete ANC coverage. In the study area only ten percent of SC women received full ANC during their pregnancy period. However, majority of the women in the study area received any one kind of ANC during their pregnancy period (84 percent). Though significant proportion of respondents made minimum of number of ANC visit, nearly two-third of SC women made their first antenatal care visit only during second trimester of their pregnancy episode (65.3 percent). In the study area only ten percent of SC women received complete ANC package for their latest pregnancy

- Government should extend its outreach activities like running mobile outreach clinics and conducting special camps for expectant deserving mothers in rural areas. The timings of these camps should be convenient to the local women
- Hence, improving ANC services could be a good strategy to promote status of pregnant mother as well the new born child

Table 10. Percentage distribution of women by Pattern of consumed IFA tablet/syrup

Consumed IFA tablet/syrup	Number of women	Percentage
Less than 60 tablets	10	1.8
60-74	187	33.2
75-89	230	40.6
90 and more tablets	138	24.4
Total	565	100.0

Table 11. Percentage distribution of women by Full/Complete ANC service package received

Full/Complete ANC service package	Number of women	Percentage
Received full ANC package	63	10.4
Received any one kind of ANC package	508	84.0
Not received any kind of ANC package	34	5.6
Total	605	100.0

Table 12. Percentage distribution of women by Number of Antenatal care visits according to their background characteristics

Background characteristics	Number of ANC visits			Total	X^2	*P*
	No ANC visit	2 or less visit	3 or more visit			
Age of women						
18- 20	3.2	9.6	87.2	94		
21- 23	4.4	17.0	78.6	364		
24 years	10.2	30.6	59.2	147	30.25	.000
Education of women						
Illiterate	18.8	50.0	31.2	32		
Primary education	8.9	35.7	55.4	56		
Secondary education	4.7	17.1	78.2	467		
Higher secondary and above	-	6.0	94.0	50	59.59	.000
Occupation of women						
Non-workers	13.0	21.1	65.9	123		
Agricultural labourers	5.2	22.1	72.7	348		
Non-agricultural labourers	-	11.2	88.8	134	30.77	.000
Standard of living index						
Low	8.5	36.8	54.7	234		
Medium	4.4	8.5	87.1	318		
High	-	9.4	90.6	53	82.71	.000
Age at marriage						
Less than 18 years	11.2	44.4	44.4	18		
18-19 years	7.5	25.1	67.4	307		
20-21 years	3.4	13.0	83.6	238		
22 -23 years	2.3	4.8	92.9	42	32.34	.000
Birth order						
First	2.5	7.9	89.6	365		
Second	10.6	31.9	57.5	207		
Third	9.1	69.7	21.2	33	36.78	.000
Exposure to mass media in weekly						
More frequently	4.4	11.5	84.1	252		
Less frequently	6.5	25.2	68.3	353	20.3	.000
Health care facility						
Within 1 Km	2.6	7.7	89.7	78	22.61	.000
2- 3 Km	2.9	15.2	81.9	171		
4 or more Km	7.6	24.7	68.3	356		
Total	5.6	19.5	74.9	605		

Table 13. Percentage distribution of women by Received full/complete antenatal care service package according to their background characteristics

Background characteristics	Full antenatal care package			Total	X^2	*P*
	Not received any kind of ANC	Received any one of ANC	Received full ANC care			
Age of women						
18- 20	5.3	83.6	11.1	94		
21- 23	4.4	84.8	10.8	364	9.43	.051
24 years	8.8	83.1	8.1	147		
Education of women						
Illiterate	18.8	75.0	6.2	32		
Primary education	8.9	82.3	8.8	56		
Secondary education	4.7	86.4	8.9	467	59.13	.000
Higher secondary and above	2.0	68.0	30.0	50		
Occupation of women						
Non-workers	13.0	79.7	7.3	123		
Agricultural labourers	5.2	85.6	9.5	348	31.57	.000
Non-agricultural labourers	-	84.3	15.7	134		
Standard of living index						
Low	8.5	88.0	3.5	234		
Medium	4.4	86.8	8.8	318	69.56	.000
High	-	49.1	50.9	53		
Age at marriage						
Less than 18 years	11.1	88.9	-	18		
18-19 years	7.5	86.6	5.9	307	34.08	.000
20-21 years	3.4	83.2	13.4	238		
22 -23 years	2.4	66.7	31.0	42		
Birth order						
First	2.5	82.7	14.8	365		
Second	10.6	85.0	4.4	207	34.12	.000
Third	9.1	90.9	-	33		
Exposure to mass media in weekly						
More frequently	4.8	77.0	18.2	252		
Less frequently	6.2	89.0	4.8	353	29.32	.000
Health care facility						
Within 1 Km	2.6	80.7	16.7	78		
2- 3 Km	3.5	84.2	12.3	171	13.45	.009
4 or more Km	7.3	84.6	8.1	356		
Total	5.6	84.0	10.4	605		

Table 14.Logistic Regression examining the effect of background characteristics on received full/complete ANC service

Variables	Logistic Coefficient (β)	Significant value (p)	Odds Ratio Exp(β)
Age of women			
18 - 20 (ref)		1.000	
21- 23	.755	.101	2.128
24 years	.672	.350	1.958
Religion			
Hindu (ref)		1.000	
Christian	-.383	.203	.682
Education of women			
Illiterates (ref)		1.000	
Primary education	.365	.768	1.440
Secondary education	1.397	.012	4.044
Higher secondary/above	2.772	.002	15.985
Occupation of women			
Non- workers (ref)			1.000
Agricultural labourers	.191	.528	1.211
Non- agricultural labourers	.201	.846	5.468
Type of family			
Nuclear Family (ref)	1.000		
Joint family	.397	.687	2.907
Standard of living index			
Low level (ref)	1.000		
Medium level	1.994	.000	7.342
High level	4.462	.000	26.662
Age at marriage			
18 or less years (ref)	1.000		
19 - 20	.960	.434	2.611
21 or more	.212	.903	1.236
Duration of marital life			
1 - 2 years (ref)	1.000		
3 - 4 years	-.358	.307	.699
5 - 6 years	-.295	.684	.744
Age at first birth			
19 or less years (ref)	1.000		
20 - 22	.698	.379	2.010
23 or more	.954	.475	2.595
Birth order			
First birth (ref)	1.000		
Second birth	-1.477	.000	.828
Third birth	-2.923	.001	.771
Exposure to mass media in weekly			
Less frequently (ref)	1.000		
More frequently	.586	.003	3.797
Distance of health care facility			
Within 1 Km (ref)	1.000		
2 - 3 Km	-.026	.941	.827
4 or more km	-.279	.007	.757
Constant	-3.454	.003	.032

-2 log likelihood = 1290.311

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