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Utilisation of Antenatal Care (ANC) Service by the Scheduled Tribes in India

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ABSTRACT As a response to the Alma-Ata slogan of "Health for all by 2000", the safe motherhood emerged as one of the priority areas of the MCH programmes. The universal provision of antenatal care (ANC) to all expectant mothers has been set a goal by the Indian family welfare programme. The scheduled tribes in particular, being relatively at the lowest level of social and economic development, have not been able to cope with the strategies in this line. Hence, here is an endeavour to examine the background characteristics of the scheduled tribe women to find out the possible determinants of the under-utilisation of ANC service by them. For this, multivariate technique has been used over the data regarding scheduled tribe women of India from the National Family Health Survey, 1992-93. The supply and demand factors associated with utilisation of ANC service by women were examined. The result showed that factors like education atleast upto certain optimum standard such as middle school and high school, increase of living standard and exposure to mass media are able to provide sufficient awareness and affordibility to women for going for ANC service.

INTRODUCTION

In the scenario of demographic development the very assurance of safe motherhood has got its prime position in terms of the Indian family welfare programme strategy at present. The provision of antenatal care (ANC) is one of most important steps in this line. Literally, antenatal care is the care of women during pregnancy. The primary aim is to achieve at the end of a pregnancy a healthy mother and a healthy baby. Ideally this care should begin soon after conception and continue throughout pregnancy. The objectives of the antenatal care are to protect and maintain the health of mother, to take care of 'high risk' cases and complications, to enlighten expectant mothers about the elements of child care, nutrition, personal hygiene and environmental sanitation etc. The components of antenatal care includes checking of health history, physical examination and certain laboratory examinations like serological tests, urine and stool tests, iron and folic acid supplementation, immununisation against tetanus. The central purpose of antenatal care is to identify "high risk" cases as early as possible from a large group of antenatal mothers and arrange for them skilled care, while continuing to provide appropriate care for all mothers.

Home visiting is the backbone of all MCH services. Even if the expectant mother is attending the antenatal clinic regularly, it is suggested that she must be paid at least one home visit by the health worker female or public health nurse. The home visits provide an opportunity to observe the environmental and social condition at home and also an opportunity to give prenatal advice. More visits are required if the delivery is planned at home. In this line the Indian Family welfare programme has implemented the formal provision of home visit by the health personnel for providing ANC services to all the expectant mothers counselling simultaneously for attending the antenatal clinics regularly. The scheduled tribes having been in the lowest rung in terms of social and economic status are often found to be deprived of or be underutilising the antenatal services as compared to non-tribals, a much higher proportion (52.3 per cent) of tribal women do not get antenatal care at all (NFHS : India, 1993). The reason may it be whatever but the consequences are certainly hazardous. So for making a strategic move, the elementary need is to find out the determinants of the under-utilisation of the ANC by the scheduled tribe women. Against these backdrops, here is an endeavour to examine the socio-demographic background of the said people at different levels of ANC utilisation.

There have been some attempts to study the differentials in the utilisation of the health services in India. In that continuum the health care

utilisation among scheduled tribes, comparatively a delicate section of the society has also been in the priority area of research. Banerjee (1982) has argued that health culture in India is influenced by poverty and class. A study by Amar Singh et al. (1993) shows that as compared to other castes, the neo-natal mortality in scheduled tribes is high and only 2 per cent of the deliveries of the scheduled tribes were attended by ANMs or trained *dais*. Bhatia and Cleland (1995) in their study in a region of South India found that education and economic status lead to the seeking of ANC service from even private health centres. Particularly women living in rural areas, belonging to lower castes and those having higher pregnancy order, were found to have lower level of antenatal check-up. Audinarayana (1997) in his study based on census data inferred that education and awareness through mass media channels may lead to better utilisation of maternal immunisation. Khan et al. (1997) in their study found husband's education and children ever born having significant positive relationship with the women's acceptance of ANC service.

DATA AND METHODOLOGY

The data for this paper is obtained from the National Family Health Survey, India, 1992-93. The total number of women interviewed in the country for the survey is 89,777. But, the relevant information for the present analysis have been extracted only for the scheduled tribe women in India who have given birth to at least one child in the last four years preceding the survey.

Antenatal care (ANC) service may be provided by doctor or professional health worker in health centre, or during home visits or both. For this analysis, the utilisation of antenatal care service (dependent variable) by women for all the births occurred to them during the last four years of survey has been categorised into

(a) those did not receive any kind of antenatal care services during pregnancy;

(b) women received antenatal care service from health worker only at home;

(c) those received antenatal care service outside home.

This exercise has been undertaken to examine the supply and demand factors associated with the ANC service utilisation and to look into the health workers' performance in rendering the services to the people. The main aim of studying these factors is to test the efficiency of the services to develop suitable strategy for universal ANC service provision. To know the causal association of covariates with the provision of antenatal care services in home as well as outside home over the nonuse of ANC by women, the Multinomial logistic regression technique has been used in the backdrop of said trichotomy of ANC utilisation variable.

Multinomial Logit Model

In this model the response (dependent) variable is mutually exclusive and exhaustive.

The Multinomial Logit Model can be given as

$$\text{Log } P_1/P_3 = a_1 + \sum b_{1i} X_i \quad ; i = 1, n ;$$
$$\log P_2/P_3 = a_2 + \sum b_{2i} X_i \quad ; i = 1, n;$$
$$P_1 + P_2 + P_3 = 1$$

where a_1, a_2 are constants,

b_{1i}, b_{2i} are the coefficients of X_i's.

For example in the above case, P_1 is the estimated probability of obtaining of ANC care from health worker, P_2 denotes the estimated probability of ANC service acceptance from outside home and P_3 is the probability of no ANC. Here P_3 is the reference category.

ANALYSIS

1. Socio-Demographic Profile of Scheduled Tribe Women with Respect to Utilisation of Antenatal Care Service, in India

It has been found that a much higher (80 per cent) proportion of scheduled tribe women in India are living in rural area and are illiterate and most of them are at a lower standard of living. Almost 70 per cent of the women are working as agricultural labourers. More than half of all women are having 3 or more number of children (Table 1).

A study of differentials in the utilisation of ANC by background characteristics reveals (Table 1) that more than half of all scheduled tribe women do not utilise ANC service at all and only 18 per cent of all women could get the ANC service from health workers, at home. More than two-third of all women living in urban areas visited health centres for ANC or received from health workers visiting home, but it is

Table 1: Socio-demographic profile of scheduled tribe women of India in terms of Antenatal care (ANC) service utilization, 1992-93

Background characteristics	Level of Antenatal care: No ANC	Health worker	Outside home	Number of women
Socio-economic Variables				
Place of Residence				
Urban	22.5	2.6	77.9	778
Rural	55.3	13.6	31.3	5638
Respondents Education				
Illiterate	61.1	15.9	23.0	4443
Literate	37.1	4.8	58.1	1147
Middle +	18.5	3.0	78.5	826
Religion				
Hindu	54.7	18.5	26.8	3904
Non-Hindus	46.0	2.6	51.4	2512
Husband's Occupation				
Agriculture	56.3	14.6	29.1	4934
Non-Agriculture	34.1	4.4	61.5	1326
Not Working	41.4	5.0	53.6	156
Respondents Occupation				
Agriculture	56.5	17.2	26.3	2558
Non-agriculture	26.3	4.5	69.2	336
Un-employed	50.0	9.3	40.7	3522
Mass Media				
No exposure	60.3	14.2	25.5	4266
Partial exposure	34.3	8.4	57.3	2012
Full exposure	21.2	7.9	70.9	137
Standard of Living				
Low	58.3	14.1	27.6	4375
Medium	40.2	9.3	50.5	1765
High	11.4	2.1	86.5	276
Demographic Variables				
Birth Order				
1	45.2	11.7	43.1	1663
2	48.6	11.8	39.6	1465
3	49.5	15.3	35.2	1143
4 and more	58.9	11.3	29.8	2145
Birth Interval				
< 18 months	43.9	10.5	45.8	1260
19 - 30 months	51.7	11.8	36.3	2176
> 30 months	54.2	13.3	32.5	2979
Age of Respondent				
13-19 years	52.4	14.9	32.7	592
20-29 years	48.8	12.9	38.3	4135
30 + years	57.2	9.6	33.2	1689
Children Ever Born				
1 and 2	45.6	12.0	42.4	2683
3 and 4	51.1	13.5	35.4	2224
5 and above	61.8	10.7	27.5	1508
Total	51.4	12.2	36.4	6416

shocking enough that more than half of all women of rural area are not utilising at all or deprived of the ANC service. In both urban and rural areas the home visit of health workers for ANC service is very much negligible in proportion, though there is a proportionately higher utilisation in rural area. Similar trend is observed in terms of women's educational status. Compared to the literates a very higher proportion of illiterate women did not get ANC. With the development of educational status the receive of ANC directly from health worker-visiting-home shows a declining trend and acceptance from outside home increase. Though overall magnitude of ANC utilisation do not very much by religion, comparatively the proportion of non-Hindu women getting ANC service from health worker visiting home is much less and that from health centres *i.e.*, outside home, is more than the Hindu women. The occupational category of the women and their husbands create an impression that more than half of the people who are in agricultural occupations and little less than this, people who are not working do not avail ANC. However most of the people who are in non-agricultural occupations are found to go for ANC service from outside home and not getting from health worker visiting home. The impact of mass media exposure seem to be considerable from the analysis showing a very higher proportion of people who are not exposed to media are poor acceptors of ANC. The magnitude of media exposure reflects the relative acceptance of ANC from health workers outside home. Similar trend is observed in case of the level of living standard of the people. The demographic characteristics of the women like birth order, birth interval, age and children ever born did not show much differential in the utilisation of ANC except merely weak proportional relationships. Again, more than half of all women of rural areas are not utilising/deprived of the ANC services. In both urban and rural area the home visit of health workers for ANC services is much less. Similar trend was observed in terms of women's educational status. A very higher proportion of illiterate women did not avail ANC, compared to those with medium level educational status.

2. *Determinants of Utilisation of Ante-natal Care Service*

In order to substantiate these findings and to find out the determinants of utilisation of ANC service by scheduled tribe women, a multinomial logit regression was applied to the data, because of the trichotomy of the dependant variable. A set of socio-demographic variables were

regressed as independent variables. The results are shown in table 2.

2.1. Availability of Antenatal Care Service from Health Worker, At Home

The findings revealed that the educational level of high school and above has a significantly positive association with the availability of ANC at home from health workers. The odds value of this (ratio of those got ANC service at home *vis-a-vis* those who did not get ANC at all) is higher for women educated upto high school and above as compared to illiterate women. The women living in rural area were found more likely to get ANC service at home from health worker. By religion, non-Hindus are found to have a significant negative association with ANC service availability from health worker at home. The odds of ANC service availability at home in case of non-working (unemployed) women was found lower than those engaged in agriculture. With regard to demographic characteristics, women with birth interval of two and half years or more were found less likely to get ANC service as compared to those with birth interval of less than 18 months. Other socio-demographic variables like standard of living, exposure to mass media, non-agricultural occupation, age of the mother, family size and birth order did not manifest any significant association with the availability of ANC service at home from health worker.

Table 2 : Determinants of utilisation of ANC service* by scheduled tribe women (Summary results of Multinomial Logistic Regression analysis)

	ANC at home/ no ANC		*Outside home/ No ANC*	
Background Characteristics	*b-coeff.*	*Odds Ratio*	*b-coeff*	*Odds Ratio*
Place of Residence				
Urban (Ref)				
Rural	0.75[3]	2.11	- 1.05[3]	0.35
Education of the Respondent				
Illiterate (Ref)				
literate-upto middle	0.04	1.05	1.10[3]	3.00
High school +	0.42[1]	1.52	1.43[3]	4.18
Caste of the Respondent				
Hindu (Ref)				
Non-Hindu	-1.91[3]	0.15	-0.03	0.97
Standard of Living				
Low (Ref)				
Medium	0.10	1.11	0.29[3]	1.34
High	-0.30	0.74	1.22[3]	3.38
Mass Media Exposure				
No exposure (Ref)				
Partial expos.	0.19[1]	1.21	0.57[3]	1.77
Full exposure	0.30	1.35	1.27[3]	3.58
Occupation of the Respondent				
Agriculture (Ref)				
Non-agriculture	0.01	1.00	0.37	1.45
Not working	-0.39	0.68	0.01	1.00
Husband's Occupation				
Agriculture (Ref)				
Non-agriculture	-0.15	0.86	0.34[3]	1.40
Not working	-0.50	0.61	-0.21	0.81
Age of the Respondent				
13-19 years (Ref)				
20-29 years	0.06	1.06	0.16	1.17
30 + years	-0.26	0.77	0.15	1.16
Birth Interval				
< 18 months (Ref)				
19-30 months	-0.14	0.87	-0.25[3]	0.78
31 + months	-0.20[1]	0.82	-0.18[2]	0.84
Birth Order (Continuous)	0.06	1.06	0.06	1.06
Children Ever Born				
< 3 children (Ref)				
3 or 4 children	0.03	1.03	-0.38[3]	0.69
5 + children	- 0.27	0.76	-0.67[3]	0.51

1. indicates significant at 10% level
2. indicates significant at 5% level
3. indicates significant at 1% level

*0- No ANC 1 - ANC at home from heath worker 2 - ANC from outside home

2.2. Utilisation of ANC Service from Health Workers Outside Home

The multinomial logit regression analysis showed that socio-economic variables like education, religion, place of residence, work status and media exposure have significant impact on the utilisation of ANC from health centres or workers outside home, by the scheduled tribe women. By breakdown of educational level, the impact of both higher education *i.e.*, high school and above, and middle school education, his significantly positive with reference to no education (illiterates) as the odds of utilisation status of ANC is found much higher for literate categories than for illterates. By place of residence, women living in rural areas were found less likely to go for ANC from health workers outside home as compared to women living in urban area. The difference was found statistically significant. The higher and middle standard of living of women were found to have significant positive impact on ANC utilisation with reference to low standard of living. The odds value of the utilisation of ANC from outside home is found higher in case of women who are partially as well as fully exposed to mass media as compared to those not

exposed at all. This difference was also found significant. Likewise, all the non-working women reported more acceptance of ANC from health worker outside home than those engaged in agricultural occupation. The women having birth interval of 19 to 29 months and those with more are more likely to utilise ANC service than women with lower birth interval of one and half year which is manifested by a negatively significant difference and lower odds value. Women with three or more children showed similar behaviour with reference to those having one or two children.

2.3. Reasons for not Seeking Antenatal Care

After going through the determinants of the utilisation of ANC service by scheduled tribe women, with reference to nonacceptance a need to examine the reasons of the later is felt necessary. Taking various demand and supply factors of ANC service utilisation into account, this was tested by place of residence. It seemed that (Table 3) for women of both rural as well as urban areas, the demand for this service itself is very low, as factors like lack of knowledge of service, feeling of not necessary and customary of ANC, inconvenience to accept, no time and permission to go for ANC, comprise for about 90 per cent of births to non-acceptors of ANC in rural areas and 82 per cent of such in urban areas. Problems like un-affordibility to financial cost of ANC service, poor quality of service and others did not prompt rest of the non-acceptors for ANC service utilisation.

Table 3: Percentage distribution of live births during the four years preceding the survey, to mothers who did not go for antenatal care outside home, by main reasons for not seeking antenatal care and residence in India, 1992-93

Reason	*Place of Residence*	
	Urban	*Rural*
Lack of knowledge of services	11.3	13.1
Not necessary	60.1	51.8
Not Customary	2.9	3.2
Financial Cost	12.2	5.7
Inconvenient	2.9	2.6
Poor quality service	2.1	2.7
Health Staff visit at home	2.9	9.3
No time to go	3.1	7.1
Not permitted to go	1.0	2.5
Other	1.4	2.0
Percentage of women not received ANC	22.5	55.3

CONCLUSION

From the present analyses, it may be observed that, women's education atleast upto high school and above has an association with the ANC availability from health worker at home. The getting of ANC service at home is lesser in case of non-working women in contrast to those engaged in agricultural occupation. Same is the condition for women having birth interval more than 30 months in contrast to those with such less than 18 months. The differential in ANC service availability may by due to the fact that women specifically illeterates or less educated, living in rural area and non-working women at lower standard of living do not show any interest in and often do not utilise ANC service provided at home, discouraging the provider in service delivery. Other reasons may be the absence of a conducive environment for service delivery *viz.*, difficulty in approaching the respective households because of the geo-physical problems in communication. But certainly the presumptions remain unexplained until proved and hence call for further indepth study to find out the unexpected difference in ANC service delivery at the door step.

Even in the case of utilisation of ANC service from health worker outside home, the education, particularly of middle and high school standard were found to be more important. In addition middle and higher standard of living and exposure to mass media has a positive impact on women providing sufficient awareness and affordibility to them for ANC acceptance from health workers outside home. However, women with higher birth interval and birth order were found less likely to go for ANC service outside home. These kind of findings may be the product of a phenomenon or mechanism of "better the educational and economic status more the awareness and utilisation of health care services". The reasons perceived regarding non-acceptance of ANC, found more of a problem in demand factor rather than supply.

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