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Original Research Article

Assessment of antenatal care services and nutritional status of pregnant women-a cross sectional study in tribal blocks of Nanded district

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ABSTRACT

Background: Maternal and child healthcare is one of the eight basic components of primary healthcare (PHC) in the declaration of Alma-Ata. There is an excellent system of primary health care services for the delivery of maternal and child health services through a network of sub-centres and PHC centres in rural India. Aim and objectives of the study to assess antenatal care (ANC) care services and MCH schemes given to tribal women in Nanded district. Objectives- To study status of ANC care services among tribal ANC mothers. To assess various schemes associated with mother and child health in tribal area.
Methods: Study design was a cross-sectional study. Study conducted at tribal blocks in Nanded district. Sampling and sample size: Convenient purposive sampling was used. Study population was 100 ANC mothers of tribal blocks in Nanded district.
Results: Total number of families belonging to BPL category were 67% and families belonging to APL were 33%. Maximum of 60% were housewives, 39% of ANC mothers were working in the farm, while only 1 ANC mother was Govt. servant.
Conclusions: Addressing the physical and financial barriers of tribal women to access maternal health services, catering the services to their socio-cultural needs, building in trust between beneficiaries in the community and health care delivery system should be the priority.

Keywords: ANC, Maternal health, Pregnant women, Tribal block

INTRODUCTION

Maternal and child healthcare is one of the eight basic components of PHC in the declaration of Alma-Ata.[1] There is an excellent system of primary health care services for the delivery of maternal and child health services through a network of sub-centres and PHC centres in rural India. Despite considerable improvements in health service delivery for pregnant women in India, maternal mortality rate is still high (254 per 100 000 live births).[2] Poor access and utilization of antenatal and other health services continue to contribute to high maternal mortality rate along with other socioeconomic factors. Maternal, infant and child mortality rates are higher among the tribes, and these higher rates are attributed, in larger part, to the lack of or underutilization of healthcare services.[3]

The 47% of maternal mortality in rural India is due to excessive bleeding and anemia resulting from poor nutritional practices.[4] In addition inadequate referral facilities to provide emergency obstetric care, scarcity of resources, and lack of awareness among beneficiaries also contribute to high morbidity and mortality.[5] It was estimated that in 2015, roughly 303 000 women died during and following pregnancy and childbirth. Almost all of these deaths occurred in low-resource settings, and

most could have been prevented.[6] As part of the sustainable development goal, the target is to reduce the global maternal mortality ratio to less than 70 per 100000 live births globally by 2030, with no individual country having a maternal mortality ratio of more than 140 maternal deaths per 100 000 live births.[7] ANC has a significant role in reducing maternal mortality and ANC visit is an important component of maternal health care on which the health of mothers and new-borns depend.[8]

In 1992-93, the child survival and safe motherhood programme (CSSM), now become the part of reproductive and child health programme; includes early registration of pregnancy, minimum three antenatal visits, universal coverage with tetanus toxoid vaccine and iron and folic acid tablets, referral services of at risk mothers, encouragement of institutional deliveries by trained birth attendant, family planning measures and emergency obstetrical emergencies.[9] In 1997, safe motherhood and child health services were incorporated into the Reproductive and child health programme as RCH phase-I and in April, 2005 as RCH phase-II. The major objectives of the programme is to bring about change in mainly three indicators i.e. Reducing total fertility rate, infant mortality rate and maternal mortality rate.[10]

In Maharashtra, the utilization of health care services varies regionally, particularly between tribal and rural areas. A majority of tribal and rural populations heavily depend on government health sector for various health care services. This study reports the utilization of ANC services among women living in tribal areas of Nanded district in Maharashtra.

Aim and objectives

Aim of the study is to assess ANC care services and various MCH related schemes provided to tribal women residing in tribal blocks of Nanded district.

Objectives were to study status of ANC care services among tribal ANC mothers and to assess current status of various schemes related to mother and child health in tribal area.

METHODS

Community based cross-sectional study done in tribal blocks in Nanded district, Maharashtra by using convenient sampling. Total 100 ANC mothers residing in tribal blocks of Nanded district were selected randomly as per available information at respective PHCs in selected blocks. ANC mothers registered at PHC in respective tribal PHC blocks and those given consent for interview.

Study plan

Study was undertaken in ANC mothers in Mahur and Kinwat blocks of Nanded district in month of October and November 2021. Data collection was assigned to 4 teams and information was sought from the respective villages under selected PHCs. The subjects were interviewed face to face (Marathi/Hindi questionnaire) using predesigned and pretested semi structured proforma. The questionnaire includes topics related to socio-demographic information like age, religion, education, occupation of the patient. Thorough history regarding ANC profile, investigations, dietary patterns, calorie and protein deficit, food taboos & prejudices, consumption of IFA and Calcium tablets, addiction during ANC period was recorded. Details of various Govt. schemes regarding eligibility and benefits taken by ANC mothers were also noted. For statistical analysis, MS-excel 2010 was used for data entry and data interpretation. Quantitative data was presented and analyzed as a frequency and percentages of the total. Appropriate tabular and graphical presentations was displayed wherever necessary.

RESULT

In present study, it was seen that 38% of the women consumed IFA tablets, whereas 35% and 27% mothers partially consumed 100 IFA tablets and rest of the mothers had not consumed IFA tablets respectively. Table 1 shows that, total number of families belonging to BPL category were 67% and families belonging to APL were 33%. Maximum of 60% were housewives, 39% of ANC mothers were working in the farm, while only 1 ANC mother was govt. servant. Maximum of 92% women were belonging to Hindu religion. Six percentages women were illiterate, while maximum 32% mothers were studied upto high school.

In present study, 60% antenatal mothers who were housewives significantly utilized full ANC. It was found that, overall, in tribal blocks, calorie deficit was found in 27%, while protein deficit was observed in 30% of the ANC mothers. When asked about addiction, of the total 21% mothers were addicted to some sort of tobacco or tobacco products. In ANC clinic, weight of 80% mothers and height of 64% of the mothers were recorded, while rest of women were not recorded with these parameters.

Haemoglobin estimation was done in maximum of 81% cases. Haemoglobin of 65% of the mothers was in the range of 9-11 gram/dl, in 17% of women Hb was in the range of <9 gm/dl, while one woman was having Hb <7 gm/dl. Complete IFA consumption as per doses prescribed was 38%, 35% of women partially consumed IFA tablets while IFA was not at all consumed by 27% mothers. Complete calcium consumption was found in only 20% of women, incomplete calcium consumption was seen in 21%, while 59% of mothers were not prescribed with calcium tablets. Investigations included in ANC profile were not done by HLL (Mahalab) in about 60% of cases. Strikingly it was found that, free USG for pregnant women was not done in 74% of routine ANC cases. ANC mothers were getting ICDS benefit in 64% of the cases.

Table 1: Distribution as per sociodemographic factors, dietary deficit and ANC services delivered to the participants.

Variables		Blocks (%)		Total (%)
		Block 1-Mahur	Block 2-Kinwat	
ANC service to mothers	Total ANC mothers	61 (61)	39 (39)	100
Poverty line of family	Above poverty line (APL)	33 (54.46)	7 (18.07)	40
	Below poverty line (BPL)	28 (46.03)	32 (82.14)	60
Religion	Boudha	1 (1.63)	6 (15.38)	7
	Hindu	59 (96.72)	33 (84.61)	92
	Muslim	1 (1.63)	0 (0)	1
Education	Illiterate	4 (6.55)	2 (5.12)	6
	Primary (1-4)	10 (16.39)	3 (7.69)	13
	Middle school (5-7)	6 (9.83)	12 (30.76)	18
	High school (8-10)	21 (34.42)	11 (28.20)	32
	Graduate	19 (31.14)	11(28.20)	30
	Post graduate	1 (1.63)	0 (0)	1
Occupation	Housewife	43 (70.49)	17 (43.58)	60
	Laborer/farm worker	17 (27.86)	22 (56.41)	39
	Govt servant	1 (1.63)	0 (0)	1
Weight record	Recorded	51 (83.60)	29 (74.35)	80
	Not recorded	10 (16.39)	10 (25.64)	20
Height record	Recorded	36 (59.01)	28 (71.79)	64
	Not recorded	25 (40.98)	11(28.20)	36
Hemoglobin (gm/dl)	Measured	49 (80.32)	32 (82.05)	81
	Not measured	12 (19.67)	7 (17.94)	19
Other investigations done by Mahalab	Reports prepared	8 (13.11)	32 (82.05)	40
	Reports not prepared	53 (86.88)	7(17.94)	60
Tab. IFA	Complete dose	23 (37.70)	15 (38.46)	38
	Incomplete dose	18 (29.50)	17 (43.58)	35
	Tab. not consumed	20 (32.78)	7 (17.94)	27
Tab. calcium lactate	Complete dose	11 (18.03)	9 (23.07)	20
	Incomplete dose	7 (11.47)	14 (35.89)	21
	Tab. not consumed	43 (70.49)	16 (41.02)	59
Tab. folic acid	Not prescribed	0	0	0
Calorie deficit	Caloric deficit	16 (26.22)	11 (28.20)	27
	No deficit	45 (73.77)	28 (71.79)	73
Protein deficit	Protein deficit	17 (27.86)	13 (33.33)	30
	No deficit	44 (72.13)	26 (66.66)	70
Addiction of tobacco and tobacco products	Yes	13 (21.31)	8 (20.51)	21
	No	48 (78.68)	31 (79.48)	79
Total		61	39	100

Note- Figures in the parenthesis indicates percentages.

Table 2: Distribution of study subjects as per utilization of govt. MCH schemes.

Govt. MCH schemes		Blocks (%)		Total (%)
		Block 1- Mahur	Block 2-Kinwat	
PMSMA	Eligible	61	39	100
	Benefit taken	30 (49.18)	11(28.20)	41
JSY	Eligible	34	33	67
	Benefit taken	20 (58.82)	18 (54.54)	38
PMMVY	Eligible	40	31	71
	Benefit taken	36 (90)	18 (58.06)	53
JSSK-free USG	Eligible	61	39	100
	Benefit taken	11(18.03)	23 (58.97)	34
Matrutva Anudan Yojana (MAY)	Eligible	34	33	67
	Benefit taken	17 (50)	21(63.63)	38

Continued.

Govt. MCH schemes		Blocks		Total (%)
		Block 1- Mahur	Block 2-Kinwat	
ICDS services	Eligible	61	39	100
	Benefit taken	36 (59.01)	28 (71.79)	64
Nav-sanjivani Yojana	Eligible	0	1	1
	Benefit taken	0	1	1
Dr. APJ Abdul Kalam Amrut Aadhar Yojana	Eligible	1	0	1
	Benefit taken	1	0	1
Total		61	39	100

Note-Figures in the parenthesis indicates percentages.

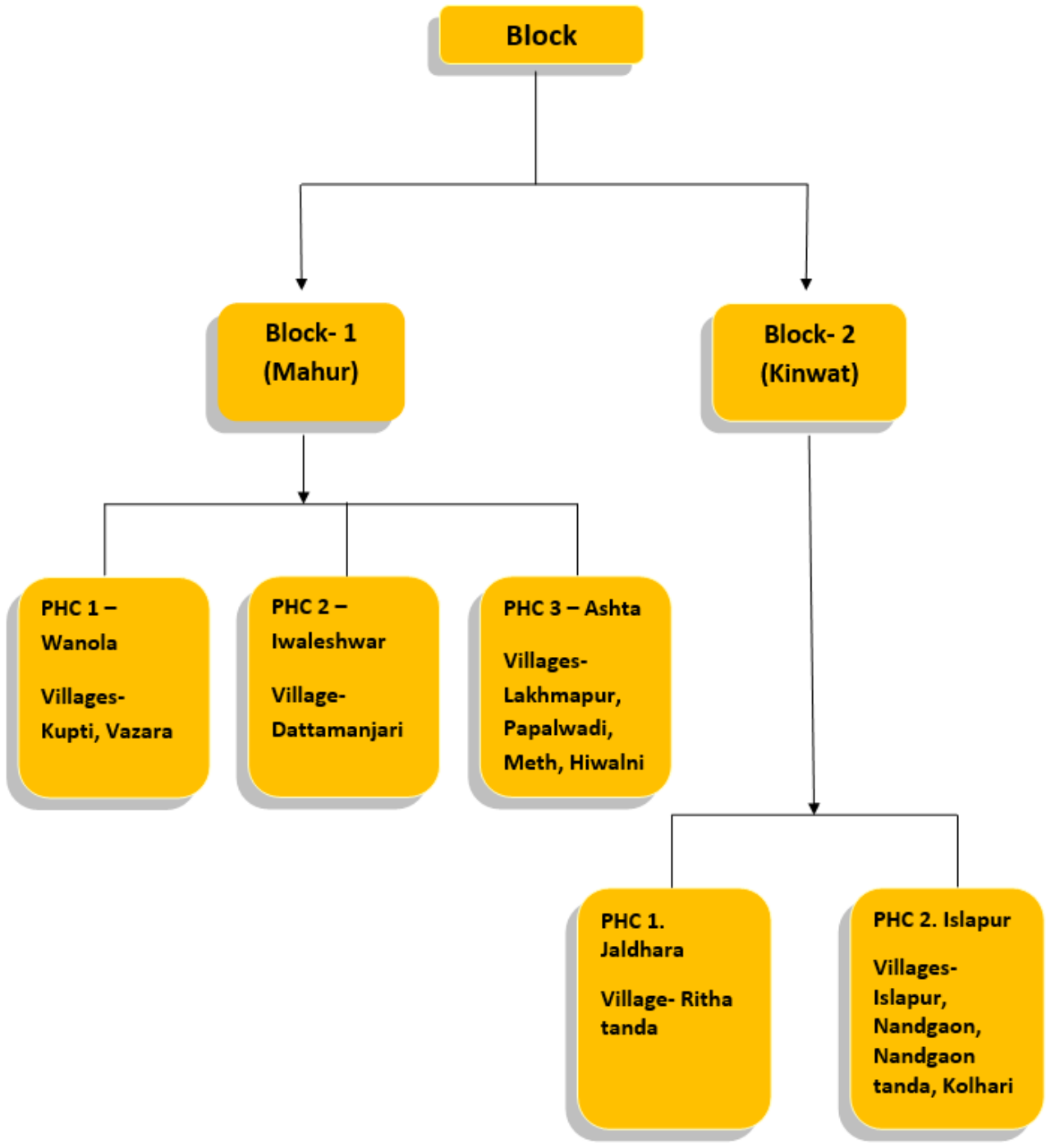

Figure 1: Methodology flow chart-selected blocks, PHC and included villages in.

DISCUSSION

This study was carried out among 100 ANC mothers with the objective to assess the utilization of ANC services in tribal area and to study various govt. schemes associated with mother and child health.

In this study, it was observed that, total 38% of the women consumed IFA tablets which is not comparable to study conducted at Karnataka, and Kakati, whereas 35% and 27% mothers partially consumed 100 IFA tablets and rest of the mothers had not consumed IFA tablets respectively.[11,12] Moreover, NFHS-4 Maharashtra fact sheet revealed that, total 37.9% mothers from rural area consumed iron folic acid for 100 days or more when they were pregnant.[13]

Table 1 shows that, total number of families belonging to BPL category were 67% and families belonging to APL were 33%. Maximum of 60% were housewives, 39% of ANC mothers were working in the farm, while only 1 ANC mother was govt. servant. Hence, most ANCs of tribal block were working women in their own or others farm as a farm worker / laborer. Maximum of 92% women were belonging to Hindu religion. Six % women were illiterate, while maximum 32% mothers were studied upto high school.

In present study, 60% housewife antenatal mothers significantly utilized full ANC, similar finding were reported in other studies.[14,15] The poor utilization of ANC by working women might be due to the fact that they couldn't afford to lose their wages; due to increased daily work, ultimately increasing daily caloric demand, but their diet contains less calories and proteins, hence more caloric and protein deficit during pregnancy. Due to continuous work or ignorance, most ANC mothers were not continuing timely ANC care. Also due to workload they are unable to take afternoon rest. It was found that, overall in tribal blocks, calorie deficit was found in 27%, while protein deficit was observed in 30% of the ANC mothers.

When asked about addiction, of the total 21% mothers were addicted to some sort of tobacco or tobacco products. Late ANC registration was of critical concern in tribal ANC women. There was no tracking system for women with missed menstruation period hence most ANCs were registered after 12 weeks of gestation. In ANC clinic, weight of 80% mothers and height of 64% of the mothers were recorded, while rest of the women were not recorded with weight and height.

Tablet folic acid and to some extent tab. calcium was not available at some of the sub-centres, hence women were not taking these tablets regularly. Investigations included in ANC profile were not done by HLL (Mahalab) in about 60% of cases. Strikingly it was found that, free USG for pregnant women was not done in 74% of routine ANC cases. ANC mothers were getting ICDS benefit in 64% of cases, while 36% of women were not getting ICDS benefits**.** Due to late ANC registration, there is delay in getting diet to ANCs under ICDS scheme. Counselling of ANCs about nutritious diet was not done in village health and nutrition day (VHND).

Key findings in health care services and Govt. schemes delivered in tribal area

Most ANCs are registered after 12 weeks of pregnancy; hence, ANC care was delayed. Stock of tab. folic acid was not available at visited health facilities viz. AWC, sub-center and with ASHA worker, hence tab. folic acid was not consumed by most of ANCs; hence ANCs becoming anemic or they were approaching private clinic for treatment forcing them for out-of-pocket expenditure. In many cases, weight of ANC mother was being recorded but there was negligence about height recording that is why high-risk mothers with short stature were not detected early. At some health facilities HB, BP, Height, Weight actually not taken but written on ANC card. Most ANCs had addiction of tobacco chewing and snuffing who were belonging to one of the specific communities which affects both mother and her fetal health outcome.

Misconception about food was prevalent in ANC mothers; food taboos were present overall in 11.67% of cases. Ex. Consumption of Jaggery and Ground nut causes sticky layer around baby which causes difficulty in delivery. Banana consumption in pregnancy delivers handicapped child as narrated by one of the mother. While some prejudices about consumption of IFA tablets was present in 16% of cases e. g., Consumption of tab. IFA during pregnancy causes macrosomia which always needs C-section.

Out of total, 41% ANC mothers were registered under Pradhan Mantri Surakshit Matritva Abhiyan (PMSMA) scheme and getting the benefits of this scheme. Due to delay in ANC registration, timely diagnostic services, care of undernourished ANC mother was not taken properly and thus there is difficulty in identifying high risk ANCs. Due to non-availability of self-bank accounts and lack of Aadhar number updation with accounts most eligible ANCs were unable to take cash assistance benefit of Janani Suraksha Yojana **(**JSY). Due to non-availability of bank accounts and lack of Aadhar number updation, most eligible ANCs were unable to take timely benefit of Pradhan Mantri Matrutva Vandan Yojana **(**PMMVY) scheme. Ambulance facility was not provided to 26% ANCs for free USG check-up at distant centers. Awareness about free emergency referral services for infant's upto 1 year need to be stressed among beneficiaries under Janani Shishu Suraksha Karyakram (JSSK).

Nav-sanjeevani Yojna was only implemented in one of the villages out of all two tribal blocks which is the striking finding. Out of 67 eligible ANC women, 29 (43.29%) ANC women were not benefitted from this

Matrutva Anudan Yojana (MAY). Strikingly, utilization of Dr. APJ Abdul Kalam Amrut Ahar Yojana was very poor in almost all the villages in this tribal area.

CONCLUSION

We concluded that, in tribal and difficult to reach area, significant factor that affected women decision whether to choose institutional care was that of others' or their own notable experiences about ANC services. There is no tracking of women with missed menstruation period; most ANCs have been registered after 12 weeks of pregnancy; hence, their ANC care was delayed. In many of the centres, ANC check up and children immunization was carried out on the same day; so, timely care to ANC mothers was hampered. Most probable cause of anemia in tribal block ANCs includes, big calorie and protein deficit due to dietary insufficiency. We also concluded, insufficient stock of iron folic acid tablets in most of the PHCs/ SCs may also be a cause of anemia among mothers; hence ANCs becoming anemic or they were visiting to private clinic for treatment forcing them for out-of-pocket expenditure. Based on the results of the study, it was concluded and suggested that, immediate action and a systematic review of approach is required for strengthening health care delivery system to address maternal health care services catered for tribal community on urgent basis.

Recommendations

ANC tracking of all ANC mothers with maternal and child tracking system (MCTS) under established HMIS at the earliest to avoid late ANC registration and lost to follow up ANC cases. All laboratory investigations for ANCs should be done at sub-centre level also. ANC examination by experts like medical officer or specialist Gynaecologist to deliver quality ANC services should be arranged at nearby health facility at regular intervals. 24 hr Govt. ambulance services for emergency care should be made available to all ANCs. On large scale, food fortification of food items should be done, viz. fortification of rice with iron which is a staple food in most of the tribal area. Proposal of supplementation of at least 1 additional meal with high calorie and protein content to all ANCs at Anganwadi centres should be implemented. Also, to encourage supplementation of Chikky, Jaggery with groundnut laddu in anganwadi centres to all adolescents, ANCS and PNCs under ICDS scheme.

Village-wise banking camps should be arranged for Aadhar updation with bank accounts and opening new bank accounts for getting the benefits of MCH related national health schemes. Importance of timely utilization of health care services should be stressed through intense information, education, communication (IEC) and behaviour, change and communication (BCC) activities among mothers and decision makers in the family. Addressing the physical and financial barriers of tribal women to access maternal health services, catering the services to their socio-cultural needs, building in trust between beneficiaries in the community and health care delivery system should be the priority.

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