Original Research Article

"Evaluation of Post-Natal Services among Tribal Population in East Godavari District, Andhra Pradesh – A cross sectional study"

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ABSTRACT:

Background: The postnatal period (or called postpartum, if in reference to the mother only) is defined by the WHO as the period beginning one hour after the delivery of the placenta and continuing until six weeks after the birth. During this period, the woman's body attains the pre-pregnancy state while the baby is adapting to the extra-uterine environment. The period extends up to six weeks after delivery.

Aim: To evaluate the availability, delivery and utilization of Post-natal services in the tribal areas of East Godavari district, Andhra Pradesh.

MATERIAL & METHODS: Study Design: Community based cross sectional study **Study area:** Tribal areas of East Godavari district. **Study Period:** 1st Oct 2017 – 30th Sep 2018 (1 year). **Study population:** Post-natal women, Mothers of Infants, Post-natal Service Providers. (ANMs, AWWs and ASHA workers). **Sample size:** study consisted a total of 404 study subjects. **Sampling method:** Systematic random sampling method. **Study tools and Data collection procedure:** As per Census 2011 data, East Godavari District is the second most populous district in AP with a population of 5,154,296 of which male and female were 2,569,688 and 2,584,608 respectively. The population of Post-natal women in the District was 37, 360 and in the study area of tribal division it was 3891. The 11 mandals in the only tribal division have been divided into under ICDS Scheme. All the 11 mandals with 8 ICDS Project areas were included in our study.

Results: Most of the post-natal women, more than 50% in many aspects, had knowledge about the post-natal services available in the health care centers and most of the post-natal women, more than 50% in many aspects, utilized (practice) the post-natal services available in the health care centers. In each aspect, it was also found that the relation between knowledge and practice is highly statistically significant. Mean knowledge score is 16.7 and mean practice score is 14.3.

CONCLUSION: It was found that utilization of postnatal services was significantly high among the literate postnatal women than among illiterate postnatal women. Similarly, utilization of postnatal services was significantly high among the postnatal women belonging

to Lower middle class followed by Upper lower class than among other Socio-economic classes.

Keywords: tribal population, post-natal services, utilization

INTRODUCTION:

A woman's reproductive process is broadly divided in to Ante-partum, Intra-partum and Post-partum. Pregnancy is a period when women's bodies go through serious physiological changes which may be entirely normal throughout pregnancy, childbirth, and postpartum period. However, this normal process may sometimes be overcome by serious complications which may affect the life of mothers and new-borns contributing to maternal mortality and morbidity to the highest level.¹

Conventionally, the first 42 days (six weeks) after delivery are considered the post-partum period. The first 48 hours of the post-partum period, followed by the first one week, are the most crucial period for the health and survival both the mother and her newborn. Most of the fatal and near-fatal maternal and neonatal complications occur during this period. Evidence has shown that more than 60% of maternal deaths take place during the post-partum period. The postnatal period (or called postpartum, if in reference to the mother only) is defined by the WHO as the period beginning one hour after the delivery of the placenta and continuing until six weeks after the birth. During this period, the woman's body attains the prepregnancy state while the baby is adapting to the extra-uterine environment. The period extends up to six weeks after delivery.

Traditionally ante-partum and intra-partum care were given highest priority by both beneficiaries and providers. It is recently dawning on the public health cadres that the post-partum period cannot be neglected as it can give rise to the following complications. Puerperal sepsis, Post-partum hemorrhage, Eclampsia, Urinary Tract Infections, Mastitis, Pelvic atonia leading to back pain and thrombo-embolism. Post-natal period is the time of one year from the date of delivery. During this period the child's immunization, Exclusive Breast feeding for six months, weaning from six months on wards with the supply of supplementary nutrition starts. This period is more important in the child's physical and mental development.

It is an accepted fact that the most of the rural areas in India suffer from perilous atmosphere and abysmal living conditions. They are fighting a constant battle for survival and health. Post-natal period is a vulnerable time, because most maternal and new born deaths occur during this period, especially immediately after childbirth. Postnatal care in the first hours and days after childbirth could prevent the great majority of these deaths. Post-natal care is care given to meet the needs of the mother and the baby from birth to 6weeks after delivery, to reduce the risk of complications and deaths as well as to promote the health of the mother and baby. 6

Therefore, postnatal care is most important maternal health care intervention for prevention of impairments, disabilities and also reduction of maternal mortality. Maternal mortality is a major concern of maternal health in developing countries like India. In Andhra Pradesh, maternal mortality ratio (MMR) in 2009 was 134 as compared to 212 per 100,000 live births in India. The early postpartum period is a time of heightened risk for both mothers and newborns. For the prevention of maternal morbidity and mortality, WHO recommends

postnatal visits within six to 12 hours after birth, three to six days, six weeks, and at six months (6-6-6-6 model) in order to ensure women's physical and mental well-being.³

The tribal population is an integral part of India's social fabric and has the second largest concentration after that of the African continent. It is more than the total population of France and Britain and four times that of Australia. Tribal areas have been the inseparable parts of our community and country although they have always resided separately far away from mainstream habitats in aspects of culture, health, education, services and almost everything. The national, state and local governments have always attempted to promote equality to the tribal on par with the mainstream population in all possible aspects.

Even though MCH services are improved all over and many studies on post-natal services have been conducted earlier, still lacunae exist, especially among the tribal population. Therefore, the present study was undertaken to evaluate the post-natal service status and their utilization pattern among women in the Tribal areas of East Godavari District, Andhra Pradesh, India since this population is underserved and deprived of the MCH services, especially the postnatal services.

Aim: To evaluate the availability, delivery and utilization of Post-natal services in the tribal areas of East Godavari district, Andhra Pradesh.

OBJECTIVES:

- 1. To study the knowledge& practice about post-natal services among post-natal women.
- 2. To assess the utilization of post natal services among the beneficiaries.
- 3. To determine the socio cultural factors relating to post-natal care in the tribal area.

MATERIAL & METHODS:

Study Design: Community based cross sectional study

Study area: Tribal areas of East Godavari district.

Study Period: 1st Oct 2017 – 30th Sep 2018 (1 year).

Study population: Post-natal women, Mothers of Infants, Post-natal Service Providers.

(ANMs, AWWs and ASHA workers).

Sample size: study consisted a total of 404 study subjects.

Sampling method: Systematic random sampling method.

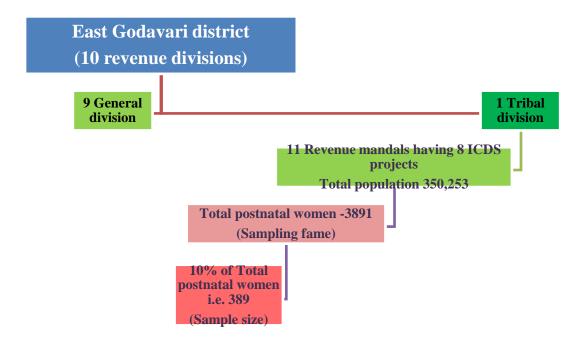
Inclusion criteria: Postnatal Women, mothers of infants who are registered under ICDS and who were willing to participate in the study.

Exclusion criteria: Women who have registered under ICDS but migrated out., seriously ill postnatal women and mothers of infants, those who didn't give consent.

Ethical consideration: Institutional Ethical committee permission was taken prior to the commencement of the study.

Study tools and Data collection procedure:

As per Census 2011 data, East Godavari District is the second most populous district in AP with a population of 5,154,296 of which male and female were 2,569,688 and 2,584,608 respectively. The population of Post-natal women in the District was 37, 360 and in the study area of tribal division it was 3891. The 11 mandals in the only tribal division have been divided into under ICDS Scheme. All the 11 mandals with 8 ICDS Project areas were included in our study.



From each of the 8 ICDS Project areas, 10 percent of the total postnatal women were sampled using the Probability Proportional to Size sampling technique.

The Anganwadi centres were approached to get the sampling frame of each ICDS Project area. The list of postnatal women was obtained from the register in the anganwadi centres. They were numbered and systematic random sampling was done to get the desired 10% sample of postnatal women. With the help of Anganwadi workers in the respective project areas the selected postnatal women were approached in their households and data was collected by interview method with their voluntary will after an Informed verbal consent was obtained. If any of the participant was absent for any reason after three consecutive visits, the next person from the sample frame was contacted. Some of the information was confirmed by personal observation also. The participants were explained that the purpose of the study was purely for research, Personal information would be preserved securely and confidentiality was assured to the participants. The components of the questionnaire were explained clearly in the local vernacular language in understandable manner. The participants were free to withdraw from the study anytime they wanted to withdraw. Data was collected personally by interview method, asking questions from the questionnaire to the service providers and postnatal women. Some of the components were also confirmed by personal observation.

Statistical analysis:

The data was entered in the Microsoft excel sheet and double checked for errors. Analyses were done using Epi info 3.5.2 and SPSS Software trial version-21 and MS Excel 2013. Results are presented as percentages, mean and Standard Deviation. A p value of <0.05 is considered statistically significant and <0.01 or 0.000 as highly statistically significant.

OBSERVATIONS & RESULTS:

The study area is the Tribal division, Rampa Chodavaram consisting of eleven mandals grouped into eight ICDS Project areas with a total population of 3, 50,253.

Table 1: Health care delivery centers in the study area:

Health facilities of study	Number	Ratio with total	Population norms per
area		population	centre
Area Hospitals	1	3,50,253	
Community Health	4	87,564	1,20,000 in Plains
Centers			80,000 in tribal areas
Primary Health Centers	26	13,471	30,000 in plains
			20,000 in tribal areas
Sub centers	141	2,484	5,000 in plains
			3,000 in tribal areas
Anganwadi centers	946	386	1000 in plains
			700-800 in tribal areas

There was one area hospital for the entire tribal division covering the total population of 3.5 lakhs. There were 4 community health centers and 26 primary health centers with 141 subcenters. The number of AWCs is 946.

TABLE 2: Anganwadi centres and anganwadi workers in the study area

		Physic	cal infras	tructure				D. C.
ICDS project area	AWCs	Govt. building	Leased	Private rent free	AWWs Sanctioned	AWWs Posted	Filled (%)	Defici ency %
VR puram	88 (Mini 27)	46	40	2	88	88	100	Nil
Gangavar am	53 (Mini 8)	28	25	Nil	53	49	92.4	7.5
Chinturu	137 (Mini 64)	71	53	13	137	121	88.3	11.6
Rajavom mangi	121 (Mini 17)	53	65	3	121	120	99.1	0.8
Rampa chodavara m	107 (Mini 16)	80	19	8	107	105	98.1	1.8
Maredumi lli	109 (Mini 27)	57	39	13	109	104	95.4	4.5
Kunavara m	197 (Mini 72)	112	76	9	197	186	98.8	1.1
Addathee gala	134 (Mini 46)	69	57	8	134	134	100	Nil
TOTAL	946 (Mini 197)	516 (54.5	374 (39.5	56 (6%)	946	907	95.8	4.1

%)	%)			

There were nine hundred and forty-six (946) anganwadi centers in the tribal division. Out of which 54.5% (516) were in Government buildings and 39.5 % (374) were in private rented buildings where as 6 % (54) were in rent free private buildings, courtesy of some voluntary groups. A total of 907 (95.9 %) AWWs were at post.

TABLE 3: Demographic profile of Post-natal women (n=404)

Demographic characters	Frequency	Percentage
Age		
< 18 Years	34	1.3
18 -20 Years	75	18.6
21 -24 Years	118	29.2
25 -29 Years	90	22.3
30 -34 Years	58	14.3
>34 Years	29	7.2
Literacy status		
Illiterates	95	23.4
Primary Education	25	6.1
Middle Level	106	26.3
Secondary Education	126	31.2
Intermediate	34	8.5
Graduation	13	3.3
Post- graduation	5	1.2
Marital status		
Single	Nil	Nil
Married	396	98.02
Divorced	6	1.49
Widowed	2	0.49
Religion		
Muslim	11	2.70
Christian	36	8.91
Hindu	357	88.39
Caste		
Scheduled tribes	370	91.7
Others	34	08.3

Out of 404 Post-natal women 283 (70.1%) were in the age group of 18 - 29 years, 58 (14.3%) were in the age group of 30-34 years, 29 (7.2%) are above 34 years and 34 (1.3%) are below 18 years' age.

Of the total, 76.6% were literates and 23.4% are illiterates. Among 404 PNW 126 (31.2%) had secondary level education, 25 (6.1%) had Primary level and 106 (26.3%) middle level education making a total of 63.6% having secondary or lower level education. Only 52 (13%) had above secondary school level education including Intermediate level 34 (8.5%), graduation 13 (3.3%) and post-graduation 5 (1.2%). Most of the women 396 (98.02 %) are married, 6 (1.49 %) divorced and 2(0.49 %) widowed.

Out of 404 PNM, majority of them 357 (88.39%) were Hindus followed by 36 (8.91%). Out of 404 post-natal women 370 or 91.7 % belong to Scheduled Tribes. Only 34 (08.3 %) were others.

Table 4: Knowledge and Practice of Post-Natal Women regarding Post-Natal Services (n = 404)

Postnatal service	Adequate Knowledge No. (%)	Adequate Practice No. (%)	p value
Nutrition and health education	361 (89.35)	340 (84.15)	0.000
Post-natal visits	223 (55.19)	205 (50.74)	0.000
Referral Services	284 (70.29)	234 (57.92)	0.000
Family Planning Methods	247 (61.13)	237 (58.66)	0.000
Child Health	373 (92.32)	234 (57.92)	0.000

Most of the post-natal women, more than 50% in many aspects, had knowledge about the post-natal services available in the health care centers and most of the post-natal women, more than 50% in many aspects, utilized (practice) the post-natal services available in the health care centers. In each aspect, it was also found that the relation between knowledge and practice is highly statistically significant. Mean knowledge score is 16.7 and mean practice score is 14.3.

TABLE 5: Obstetric characteristics of Post-natal women

Obstetric characteristics	Frequency	Percentage				
Parity						
One	53	13.12				
Two	251	62.13				
Three	83	20.55				
Four and above	17	4.20				
Place of delivery						
Home	17	4.2				
Health institution	387	95.8				
Mode of delivery	Mode of delivery					
Spontaneous vaginal delivery	282	69.80				
Assisted vaginal delivery	10	2.47				
Caesarian section	112	27.73				
Condition of the neonate at birth						
Normal / alive	397	97.79				

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Abnormal / diseased	3	0.73
Dead	6	1.48
Delivery conducted by		
Untrained person / relative	Nil	Nil
Trained Dai	17	4.20
ANM	36	8.92
Doctor	141	34.90
Nurse	210	51.98
Experience of Complications		
Obstetric complications	59	14.6
Others (Anaemia, headache, heart	177	43.8
disease, convulsions etc)		
Total	236 / 404	58.4

Majority 251 (62.13%) of the women were of 2ndparity, 83 (20.55%) are of 3rdparity, 17 (4.2%) were of para 4 or more and only 53 (13.12%) are primipara. Majority 387 (95.8%) of the postnatal women have had institutional deliveries only 17 (4.2%) having delivered at home. Majority 282 (69.8%) had spontaneous vaginal delivery 112 (27.73%) Caesarian Sections and only 10 (2.47%) had Assisted Vaginal Delivery out of which two were twin deliveries. Majority 397 (97.79%) of the new born babies were normal while 6 (1.48%) still births and 3 (0.73%) abnormal / diseased babies. Out of 404 deliveries 210 (51.98%) were conducted by Nurses followed by 141 (34.9%) conducted by Doctors and 36 (8.92%) by ANMs and only 17 (4.2%) by Trained Dai. A total of 236 (58.4%) women out of 404 experienced post-natal complications. Among these women 59 (14.6%) experienced obstetric complications and 177 (43.81%) experienced other complications including Anemia, head ache, heart disease convulsions etc.

TABLE 6: Type of Obstetric Complication (n= 59)

Type of Complication	Frequency	Percentage
PPH	5	8.47
Puerperal sepsis	9	15.26
Thrombo-phlebitis	Nil	Nil
UTI	27	45.76
Mastitis / breast related	7	11.86
Sub-involution of uterus	11	18.65
TOTAL	59	100

Out of 404 Post-natal women 59 (14.6%) women had experienced obstetric complications during their post-natal period. Most common complication was Urinary Tract Infections experienced by 27 (45.76%) post-natal women followed by Sub involution of uterus in 11 (18.65%), puerperal sepsis in 9 (15.26 %) women, mastitis in 7 (11.86%) and PPH in 5 (8.47%) women.

Management	Number	Percentage
Treatment at the place of delivery	158	66.9
Referred to Higher Centre	78	33.1
No treatment received	0	0
Total	236	100.0

TABLE 7: Management of post-natal complications (n = 236)

Among 236 post-natal women who had complications, 158 (66.9%) of the cases (may be mild anaemia cases, common headache, respiratory tract infections) amenable to treatment at the lower level health centers were treated at the place of postnatal follow up and 78 (33.1%) were referred to higher centre for specialist care.

Table 8: Factors for non-utilization of Post-Natal Services by PNW (n = 404)

Factors	No	%
Not necessary	4	1.0
Not customary	11	2.8
Cost too much (Expenses for accompanying person)	151	37.3
4Too far /No TRANSPORT (lack of accessibility	124	30.6
Poor Quality of Services	16	3.9
No time to go	27	6.7
Family did not allow	11	2.8
Feel care is better at home	41	10.2
Lack of knowledge	14	3.5
Rude and unfriendly behavior of staff	5	1.2

Most common problem perceived by the post-natal women for utilization of post-natal services was too much cost as told by 151 (37.37%) women. They could not afford the expenses on the person accompanying to care of them, although the services were free for post-natal women. Other major problem was the distance of the health facility from residence 124 (30.69%)

It was found that utilization of postnatal services was significantly high among the literate postnatal women than among illiterate postnatal women. Similarly, utilization of postnatal services was significantly high among the postnatal women belonging to Lower middle class followed by Upper lower class than among other Socio-economic classes.

DISCUSSION:

Postnatal services have always been one of the most important component of Maternal and Child Health programs under various Health programs such as CSSM, RCH, NRHM programs. However, they have been neglected most of the times resulting in Increased morbidity and mortality among mother and child. Postnatal period is a very crucial period during which, if proper care is provided, high proportion of morbidity and mortality among mother and child can be prevented. Such care also has implications on the future health of the mother and child, family, community and the nation by large.

Despite this fact, the postnatal services are not delivered and utilized as expected and required, due to various reasons. Even after the era of the MDGs, such a situation is still prevalent in many parts of the country, especially in the rural and tribal areas of India. Though interwoven with the country's fabric, tribal areas have been segregated from the mainstream society due to various factors. Maternal and child health is one such component which is still having a high lacuna in tribal areas. Hence, through this study, we are throwing light on few aspects of the subject through evaluation of postnatal services in the tribal division of East Godavari district.

In our study out of 404 Post-natal women, majority 71.4% were in the age group of 18 – 29 years and 1.3% are less than 18 years of age where as 14.3 % were in the age group of 30-34 years and 7.2 % women were more than 34-year age group. In a similar study by Gedefa Amenu et al ¹ most (28.9 %) of the women belonged to the age group of 20- 24 years followed by 25-29 years (27.4%), 30-34 years (24.2%), above 35 (10.6%) and only 8.9 % were in 15- 19-year age group, where as in a study by A Sathya Susuman among tribal postnatal women in Chhattisgarh majority (68 %) belonged to 20-34 years, 25 % above 35 years and only 7 % belong to below 20-year age.

Our study reported that 76.6 % Post-natal women were literates and 23.4 % illiterates. Among 404 PNW 31.2% had secondary education, 32.4 % had primary and 26.3% middle level education making a total of 77% having secondary level and lower education. Only 52(13%) had above secondary school level education including intermediate level 8.5%, graduation 3.3% and post-graduation 1.2%. In contrary to our findings, majority of the tribal post-natal women were illiterates (74.4%) in a study by A Sathiya Susuman. Among literates below high school level were 22.2 % and only 3.3% had high school and above level education.

In our study, most of the women 98.02 % (396) were married, 1.49 % divorced and 0.49 % were widowed. Similar findings were reported from a study by Gedefa Amenu et al ¹ in which 94.6 % were married, 1.5% were divorced and 1.7% were widowed.

In our study among 404 PNWs 58.2 % women were unskilled laborers followed by18.06 % women involved in farming / shop keeping / clericaljobs, 10.39% were semiprofessional and only 0.49 % were professional. A study by Gedefa Amenu et al ¹ showed that 22.2 % were Government employees and 29.1 % were involved in farming / Traders and 5.9 % were

others. Husbands of 55.69 % Post-natal Women were unskilled workers. Only 8.16 % were semi-skilled and only 0.49 % were professionals. House wives utilized post-natal care more as compared to those who were working women in our study similar to the findings of Sana Ejaz. 10

SES was classified based on B G Prasad Classification. Among 404 postnatal women, most 68.83% belong to Upper Lower class, 15.58% belong to Lower class, 10.14% to Lower Middle class, 3.22% to Upper Middle class and 2.23% to Upper class. Similarly, A Sathiya Susuman et. Al ⁹ showed in their study that most 84% of them belonged to lower socioeconomic class. More number of women in low socio-economic groups may be because of low level of education and henceforth lower occupational status, which in fact implies the income levels, altogether contributing to the socio-economic status levels.

In our study, majority 62.13 % of the women were of para 2, 20.55% were of para 3, 4.2% were of para 4 or more and only 13.12% were of 1st parity. A study by A Sathiya Susuman⁹ revealed that most common were women with third parity (36.9%), para 1 were 20.4%, para 2 were 23.8% and para 4 were18.9%.

Institutional deliveries constitute 95.8 % and only 4.2 % were home deliveries better than the findings of A Sathiya Susuman¹⁰⁸ showing only 47.5 % of the deliveries are institutional deliveries and 52.5% were non-institutional deliveries. Our study also revealed that majority 69.8 % of the deliveries were spontaneous vaginal deliveries and 27.73 % were Caesarian Sections and only 2.47 % were Assisted Vaginal Deliveries which is similar to the results of Charul Purani et al ¹¹ showing72% mothers delivered vaginally, and the caesarean section was done in 28% of them.

In our study 97.79% of the new born babies were normal. There were 1.48 % still births and 0.73% abnormal / diseased babies. A study by Gedefa Amenu et al ¹ also comparably showed that most 82.5 % of the newborn babies were normal / alive babies,13.3% were abnormal or diseased and 4.2 % were dead.

Our study revealed out of 404 deliveries 51.98 % were conducted by Nurses followed by 34.9 % conducted by Doctors and 8.92 % conducted by ANMs. Trained Dai attended 4.2 % deliveries. Our results are better than the findings of A Sathiya Susuman⁹ whichshowed only 3.3% deliveries conducted by Doctors, 4.5% by ANMs,15.3% by Trained Dai, 53.4% by Untrained Dai, 23.2 % by relatives / friends and 0.5 % by none.

Prevention of postnatal complications is one of the most important objectives of postnatal period and they should be recognized early and dealt with promptly to reduce the effects of the complications. A total of 58.4 % women out of four hundred and four experienced postnatal complications. Among these women 14.6% experienced obstetric complications and 43.8 % experienced other complications including Anemia, head ache, heart disease, convulsions etc. Most common complication was Urinary Tract Infections experienced by 45.76 % post-natal women followed by Sub involution of uterus in 18.65 %, puerperal sepsis in 15.26 % women and PPH in 8.47 % women.

One of the studies in Delhi ¹² revealed that the postnatal complications were seen only in 5.6% of postnatal women, the most common complication being UTI, 1.7% which is also the most common complication in our study.

Among 236 post-natal women who had complications, 66.9% of the cases, (may be mild anaemia cases, common headache, respiratory tract infections) amenable to treatment at the

lower level health centres were treated at the place of postnatal follow up and 33.1% were referred to higher centre for specialist care.

Fikirte Tesfahun et al ¹³ in their study revealed that Six hundred ninety-two (84.39 %) of mothers were aware that they should receive PNC services after delivery. Those women who were aware of the need for PNC cited the following reasons for attending a clinic in the postnatal period: 97.69 % of women mentioned the need to receive vaccinations; 42.49 % to be counseled on family planning; 37.57 % to prevent and treat delivery related problems; 22.98 % to receive nutritional advice; 7.08 % to discuss breastfeeding; 1.16 % to receive advice on danger signs of pregnancy.

In our study, the literacy status, socio-economic status and occupational status were found to influence the utilization of postnatal services significantly. Literate women, women with higher socio-economic status and housewives utilized the postnatal services better than their counterparts similar to the findings of Jose et. al, ¹⁴ Dilip and Mishra ¹⁵ and Singh P et al. ¹⁶ showing that Education of woman emerged as an important factor affecting utilization of maternity care services by tribal women. Level of education of the tribal women who did not utilize full services was significantly lower than those who utilized.

CONCLUSION:

It was found that utilization of postnatal services was significantly high among the literate postnatal women than among illiterate postnatal women. Similarly, utilization of postnatal services was significantly high among the postnatal women belonging to Lower middle class followed by Upper lower class than among other Socio-economic classes.

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