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RESEARCH ARTICLE

DIFFERENTIALS OF UTILIZATION OF MATERNAL HEALTH CARE IN TAMIL NADU, INDIA

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ABSTRACT

Objectives: To examine the existing pattern of maternal health care and the factors associated with the utilization of such care in Tamil Nadu state, India.

Methods: This study uses the data obtained through District Level Household Survey-Reproductive Child Health. Besides, performing chi-square tests to see the association of the relevant individual and household characteristics, logistic regression was also carried out to measure the effect of these characteristics on the use of maternal health care.

Results: Maternal health care, measured as mean score is 77.8 for the whole Tamil Nadu. It varies across the districts in this state. Among social variables, religion, caste and education of women and their husband are significantly associated with the utilization of maternal health care. Variables like standard of living, age of women, age at marriage of women, order of pregnancy, and exposure to electronic media are also significantly associated with the maternal health care. However, women with 4 or more gravida, low standard of living, and not exposed to electronic media are less likely to utilize this service.

Conclusion: In the state of Tamil Nadu regions make the difference in the observed significant association between the utilization of maternal health care and independent variables at the state level. Though religion and age of women are significantly associated with maternal health care at the state level, it is not so in each region. The status of district in terms of human development index is positively associated with the utilization of maternal health care in Tamil Nadu.

INTRODUCTION

According to WHO (2007) estimation approximately 536000 maternal deaths occur annually, of which 95 per cent occur in sub-Saharan Africa and Asia. In any community, mothers and children constitute a priority group. In sheer numbers, they comprise approximately 70 per cent of the population of the developing countries. In India women of the child-bearing age, (15 to 44 years) constitute 19 per cent and children less than 15 years of age constitute about 40 per cent of the total population. Together they constitute nearly 59 per cent of the total population. By virtue of their numbers, mothers and children are the major consumers of health services, of whatever form**.** In developing countries, the use of modern health care such as maternal health services can be influenced by the socio-demographic characteristics of women, the cultural context, and the accessibility of these services. Maternal education has been shown repeatedly to be positively associated with the utilization of maternity care services (Addai, 2000; Celik and Hotchkiss, 2000). Utilization of maternal health services is associated with improved maternal and neonatal health outcomes. Babalola and Fatusi (2009) in a study in Nigeria found that education is the only individual-level variable that is consistently a significant predictor of service utilization, while socio-economic level is a consistent significant predictor at the household level. Factors influencing maternal health services utilization operate at various levels- individual, household, community and state. Depending on the indicator of maternal health services, the relevant determinants vary. Although, in general, women in higher socio-economic groups tend to exhibit patterns of more frequent use of maternal health services than women in the lower socio-economic groups, factors such as education appear to be important mediators (Addai, 2000). Magadi et al. (2007) conducted a comparative analysis of the use of maternal health services between teenagers and older mothers in sub-Saharan Africa. Side by side, Gyimah et al. (2006) examined challenges to the reproductive health needs of African women on the basis of religion and maternal health utilization in Ghana. In, parts of Africa women's decision making power are extremely limited, particularly

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in matters of reproduction and sexuality. In this respect, decisions about maternal care are often made by husbands or other family members (WHO, 1998). Whereas, in developing countries, women spend more time on their multiple responsibilities for care of children, collecting water or fuel, cooking, cleaning, growing food, and trade than on their own health (World Bank, 1994). A sorry state of maternal health is evident in a neighboring country of India namely Bangladesh. Maternal mortality is a serious public health concern in this country. However, most deaths could be prevented through proper and timely care seeking and adequate management. Unfortunately, fewer than half of pregnant women in Bangladesh seek antenatal care, and only one in eight receive delivery care from medically trained providers (Rahman, et.al., 2008).

The dimensions of women's autonomy and their relationship to maternal health care utilization were investigated by Bloom et al. (2001) in a probability sample of 300 women in Varanasi, India. Analysis demonstrated that women with greater freedom of movement obtained higher levels of antenatal care and were more likely to use safe delivery care. The influence of women's autonomy on the use of health care appears to be as important as other known determinants such as education. Navaneetham and Dharmalingam (2002) have examined the pattern and determinants of maternal health care utilization across different social settings in south India: in the sates of Andhra Pradesh, Karnataka, Kerala and Tamil Nadu. According to them utilization of maternal health care services is not only associated with a range of reproductive, socio-economic, cultural and program factors but also with state and type of health service. The interstate differences in utilization could be partly due to variations in the implementation of maternal health care program as well as differences in availability and accessibility between the states. While, Basu (2009) has made a comparative study on reproductive and child health status of the scheduled castes and scheduled tribes of West Bengal on the basis of NFHS (national Family Health Survey)-I and NFHS-II data, Dey (2009) have made a same attempt considering the population of West Bengal as a whole.

Government of India have implemented several program on utilization of maternal health care from time to time and updated the strategy in order to improve the health status of women and children and fulfill the unmet need in its entire region. In Indian context several indicators are usually examined to evaluate the program in national level in general and state level in particular. This is not helpful to draw a total picture of utilization of maternal health care at different geographical level inside each state. Because the situation of population, health and health care practices is not uniform all over the states in India. A composite picture is needed in this respect at district level to develop appropriate strategy for successful program implementation. In this respect the utilization of maternal health care is to be assessed in a district at a particular time and the progress is to be assessed that has been made in comparison with the past. The same is also needed to be compared with other districts of the state. In this backdrop the present study on differentials on utilization of maternal health care in the state of Tamil Nadu has been undertaken.

MATERIAL AND METHODS

This study uses the data obtained through District Level Household Survey-Reproductive Child Health (2006). Data on important components of utilization of maternal health viz. socioeconomic, demographic and other variables are analyzed in district level for the state of Tamil Nadu. Altogether 25,522 eligible women in the age group 15-44 were identified. Among these women, those who gave live birth during the past three years prior to the survey were sorted out. They are 7,370 in number. Logistic regression analysis is used to study the influence of the independent variables on the dependent variable (utilization of maternal health care - created as a categorical variable). For each component of utilization of maternal health care a score ranging from 0 to 3 has been assigned and the total score for all the components of this health care was obtained for each women. The total score thus obtained for a woman ranged from 0 to 120. This was classified into three groups: Low (less than 75), Medium (76 - 84) and High (85 or more). There are 30 districts in Tamil Nadu. For the sake of present study these districts were grouped into eight contiguous regions according to their geophysical characteristics.

RESULTS

Association between utilization of maternal health care and social characteristics of women is furnished in Table 1. Mean score for use of maternal health care has increased from 77.7 for Hindu women to 78.4 for Muslim women and 79.4 for Christian women. Chi-square test of significance rejects the hypothesis that 'there is no association between religion and this health care'. Utilization of maternal health care is found to be significantly associated with religion of women ($p < 0.05$). This is high among non-SC/ST women than SC/ST women as the mean score is more for non-SC/ST (79) than SC/ST women (75). Chi-square test of significance shows that utilization of maternal health care is significantly associated with caste of women ($p < 0.01$). Side by side, utilization of maternal health care measured in terms of mean score shows positive relationship between this health care utilization and education of women as well as education of husband i.e., mean score for the use increases as the literacy of women and their husband increases. For example, mean score has increased form 73.1 for literate women to 82.8 for women studied 12 and above standard of schooling. The corresponding figures for husband are 72.9 and 81.8 respectively. The hypothesis that 'there is no association between literacy of women/ husband and the utilization of maternal health care' is rejected by the Chi-square test of significance. This implied that there is a significance association between education of women / husband and utilization of maternal health care ($p < 0.01$).

Table 2 presents the utilization of maternal health care and economic characteristics of women. Utilization of this care has been increased as the standard of living increased. In the same way utilization was more for household having television and radio than households not having television and radio. Chi – square test of significance reject the hypothesis that 'there is no association between utilization and economic status of

Table 1. Percentage of women by utilization of maternal care and social characteristics of women

Social Characteristics	utilization of maternal care							Chi-square	p-value
	Low	Medium	High	Total	N	Mean	S.D.		
Religion									
Hindu	34.7	33.5	31.9	100.0	6461	77.69	13.76		0.02
Muslim	32.9	33.5	33.5	100.0	498	78.35	11.75	11.96*	
Christian	26.8	38.3	34.8	100.0	399	79.36	11.69		
Others	(16.7)	(25.0)	(58.3)	100.0	(12)	(83.67)	8.92		
Caste									
SC/ST	41.5	30.9	27.6	100.0	2194	75.15	14.89	77.40	0.00
Non - SC/ST	31.0	34.9	34.1	100.0	5176	78.97	12.74		
Education of women									
Illiterate	47.1	29.5	23.3	100.0	1799	73.06	15.96	259.94	0.00
1 – 5 standard	36.4	31.0	32.6	100.0	1043	77.25	13.79		
6 – 12 standard	30.1	36.2	33.7	100.0	3784	79.28	12.09		
12+ standard	19.5	35.3	45.2	100.0	744	82.81	9.862		
Education of Husband									
Illiterate	47.4	29.6	23.1	100.0	1208	72.94	15.79	195.92	0.00
1 – 5 standard	39.8	31.3	28.9	100.0	1152	75.96	14.49		
6 – 12 standard	31.3	35.1	33.6	100.0	4013	78.85	12.68		
12+ standard	22.6	36.3	41.1	100.0	997	81.82	10.42		

N = Number of women, S.D. = Standard deviation
( ) Percentage may not be reliable due to base on less than 25 cases
* Christian and Others are considered as one group

Table 2. Percentage of Women by utilization of maternal care and Economic Status of women

Economic Status	MCH care							Chi-square	p-value
	Low	Medium	High	Total	N	Mean	S.D.		
Availability of *Television*									
Yes	28.7	35.3	36.0	100.0	4122	79.80	12.04	129.41	0.0
No	40.9	31.7	27.3	100.0	3248	75.34	14.83		
Radio									
Yes	29.9	34.8	35.3	100.0	3099	79.34	12.48	45.76	0.0
No	37.1	33.0	29.9	100.0	4271	76.74	14.14		
Standard of living									
Low	43.3	30.7	26.0	100.0	2358	74.36	15.40		
Medium	34.4	33.5	32.1	100.0	3049	78.14	13.03	213.21	0.0
High	22.6	37.7	39.7	100.0	1963	81.52	10.50		

N = Number of women, S.D. = Standard deviation

Table 3. Percentage of Women by utilization of maternal care and Demographic Characteristics of women

Demographic variables	MCH care							Chi-square	p-value
	Low	Medium	High	Total	N	Mean	S.D.		
Age (in years)									
15 – 19	44.9	32.8	22.2	100.0	405	74.23	13.78		
20 – 24	35.1	32.7	32.1	100.0	2968	77.61	13.37		
25 – 29	31.0	35.0	34.0	100.0	2765	78.92	12.99	42.86	0.0
30 – 34	34.5	33.5	32.0	100.0	956	77.73	13.76		
35 – 39	36.5	34.3	29.2	100.0	233	74.91	17.57		
40 – 44	41.9	30.2	27.9	100.0	43	75.00	16.64		
Age at Marriage									
< 18 years	41.0	30.6	28.4	100.0	3008	75.58	14.79		
18 - 20 years	33.6	33.9	32.4	100.0	1936	78.35	12.73	135.14	0.0
21+ years	26.0	37.4	36.6	100.0	2426	80.21	11.97		
Gravida									
1	30.8	36.1	33.1	100.0	2690	78.87	12.04		
2	32.0	33.7	34.3	100.0	2604	78.71	13.20	83.15	0.0
3	37.7	31.8	30.5	100.0	1328	76.87	14.17		
4+	46.8	28.7	24.5	100.0	748	72.76	16.90		

N = Number of women, S.D. = Standard deviation

Table 4. Percentage of Women by utilization of maternal care and Districts

Name of District	MCH care						
	Low	Medium	High	Total	N	Mean	S.D.
Region – 1							
Erode	16.7	25.3	58.1	100.0	198	84.96	10.69
Nilgris	11.9	34.8	53.2	100.0	201	84.72	10.08
Coimbatore	23.6	35.8	40.6	100.0	212	81.85	10.58
Region -2							
Thiruvallur	42.6	32.9	24.5	100.0	216	75.76	11.82
Vellore	48.7	21.4	29.9	100.0	308	75.24	15.09
Dharmapuri	40.2	37.2	22.5	100.0	333	76.34	12.40
Tiruvanamali	51.2	27.2	21.7	100.0	217	71.53	15.78
Region –3							
Villupuram	57.4	30.5	12.1	100.0	282	67.27	17.26
Salem	35.1	33.3	31.6	100.0	228	78.34	12.74
Namakkal	22.3	32.2	45.5	100.0	211	82.30	11.28
Permbalur	47.1	37.1	15.8	100.0	240	72.76	13.86
Ariyalur	52.9	32.6	14.6	100.0	261	71.12	14.97
Cuddalore	58.4	27.3	14.2	100.0	267	71.15	12.99
Region -4							
Karur	29.0	28.0	43.0	100.0	214	81.43	13.02
Trichy	34.6	32.5	32.9	100.0	234	78.18	13.41
Nagapatinam	43.8	32.5	23.6	100.0	292	73.90	14.19
Thiruvarur	37.5	33.8	28.6	100.0	269	76.20	13.63
Thanjavur	26.8	35.2	37.9	100.0	261	79.94	11.37
Pudukkotai	23.5	52.5	23.9	100.0	238	79.26	11.28
Region – 5							
Dindigul	38.5	30.2	31.3	100.0	291	76.37	14.05
Sivaganga	19.4	30.4	50.2	100.0	247	83.02	11.57
Madurai	48.8	29.1	22.1	100.0	213	74.17	13.72
Theni	19.3	38.6	42.1	100.0	197	81.84	11.25
Viruthunagar	33.2	30.0	36.8	100.0	280	78.88	14.14
Ramanathapuram	18.1	39.7	42.2	100.0	204	82.38	10.64
Region – 6							
Thoothkudi	19.6	41.5	38.9	100.0	311	81.19	10.58
Thirunlveli	32.5	34.5	33.0	100.0	200	78.43	12.81
Region – 7							
Kanniyakumari	22.9	42.4	34.7	100.0	288	81.12	10.64
Region – 8							
Chennai	27.4	30.9	41.7	100.0	223	82.40	10.55
Kanchipuram	17.1	42.3	40.6	100.0	234	80.99	11.44

N = Number of women, S.D. = Standard deviation
Chi – square for district and MCH Care = 752.72, p= 0.00

Table 5. Percentage of women by utilization of maternal care Residence and Regions

Residence / Regions	MCH care							Chi-square	P value
	Low	Medium	High	Total	N	Mean	S.D.		
Residence									
Rural	37.2	31.2	31.5	100.0	4387	77.01	14.48	53.05	0.0
Urban	29.5	37.4	33.1	100.0	2983	79.04	11.89		
REGIONS									
Region - 1	17.5	32.1	50.4	100.0	611	83.80	10.53		
Region - 2	45.3	29.8	24.9	100.0	1074	74.94	13.93		
Region - 3	46.7	32.0	21.2	100.0	1489	73.35	14.94		
Region - 4	33.0	35.7	31.2	100.0	1508	77.93	13.13		
Region - 5	30.2	32.5	37.3	100.0	1432	79.29	13.18		
Region - 6	24.7	38.7	36.6	100.0	511	80.11	11.57		
Region - 7	22.9	42.4	34.7	100.0	288	81.12	10.64		
Region - 8	22.1	36.8	41.1	100.0	457	81.71	10.99		
All								393.38	0.0

Note: Chi – square is calculated for region and MCH Care
N = Number of women, S.D. = Standard deviation

Table 6. Results of Logistic Regression

Background characteristic	B	Exp(B)
Regions		
Region – 2	0.1555	1.1683
Region – 4	0.6340***	1.8852
Region – 5	0.6568***	1.9287
Region – 6	1.1699***	3.2215
Region – 7	1.4390***	4.2163
Region – 8	1.4925***	4.4481
Region – 1	2.1657***	8.7206
Type		
Urban	0.0579	1.0596
Age (years)		
30 +	-.0280	0.9724
Gravida		
1	0.2981*	1.3472
2	0.3566**	1.4285
3	0.4585**	1.5817
Education of women		
1 to 5 standard	0.1014	1.1067
6 -12 standard	0.5123***	1.6691
12 + standard	1.5733***	4.8227
Education of husband		
1 to 5 standard	0.1443	1.1552
6 -12 standard	0.3750***	1.4550
12 + standard	0.7988**	2.2230
Caste		
Non – SC/ST	0.4028***	1.4960
Mass media		
Either TV or Radio	0.1326	1.1418
Both TV & Radio	0.1331	1.1424
Standard of Living		
Medium	0.3526*	1.4227
High	0.8060***	2.2390
Constant	0.3103*	
- 2 log likelihood	3785.522	
Nagelkerke R^2	0.164	
% correct prediction	91.33	
Model chi –square (df)	560.454 (23)***	
Block chi-square (df)	560.454(23)***	

Significance at $p < 0.001$***, $p < 0.01$ **, and $p < 0.05$ *
B – logistic regression coefficient , Exp(B) – odds ratio.

women". Economic status of women has highly significant association with the utilization of maternal health care ($p < 0.01$). This implied that women with high economic status are more likely to utilize this health care than others. It also implied that exposure to electronic mass media (Television / Radio) will increase the utilization.

The use of utilization of maternal health care by demographic characteristics of women is presented in Table 3. This health care increased from younger women (15 – 19 years), which reached the higher level in 25 – 29 years and then decreased. Age of women has shown significant association with the use of MCH care ($p < 0.01$). Regarding the age at marriage of women, the utilization of maternal health care increased as the age at marriage increased. The association between age at marriage of women and utilization is significant ($p < 0.01$). The use decreased as the gravida increased. Mean score (79) for use is higher for first and second gravida. The care has shown significant association with gravida ($p < 0.01$). The above results rejected the hypothesis that 'there is no association between use of utilization of maternal health care and demographic characteristics of women such as age, age at marriage and gravida'. This implied that age of women, age at marriage of women and gravida are significantly associated with the use of this health care. Women in the age group 25 -29 years, women married at 21 or more years, and women conceived first or second times are more likely to utilized this health care than their counter parts.

Tables 4 and 5 presents the level of utilization of maternal health care for each district, region and also for residence (rural, urban). Use of this health care is more in urban areas than in rural areas and the difference is highly significant (Table 5). The level of utilization is low in Villupuram district (mean = 67.3) and high in Erode and Nilgiris districts (each 85). The MCH performance in Thiruvallur, Vellore, Dharmapuri, Tirunavamali, Villupuram, Perambalur, Ariyalur, Cuddalore, Nagapatinam, Thiruvarur, Dindigul and Madurai districts is below the state level care performance. Out of 30 districts these 12 districts are below the state level Utilization of maternal health care performance.

Region wise analysis shows that the use of utilization of maternal health care is at highest level in Region -1 (Erode, Nilgirs and Coimbatore) followed by Region -8,

Region – 7, Region – 6, Region – 5, Region – 4, Region -2 and Region –3 in the order. Since the use of this health care varies significantly across different regions (ANOVA analysis gives F = 1.57 and p = 0.00), the hypothesis that "use of this care does not vary by region" is disproved. Region -1 which is having the highest performance in the use of care is also having the better position in Human Development Index (HDI) compared to Region – 3, where the HDI is at lower level and also the use of the care is at the lowest level in Tamil Nadu. It seems that Human Development Index of different districts in Tamil Nadu is positively related with the utilization of maternal health care.

Regression Analysis

To explore some of the factors that might be associated with utilization of maternal health care, logistic regression is performed. The following variables are considered in the analysis:

Dependent variable: ***Utilization of maternal health care***

Utilization of maternal health care is categorized in to either 0 or 1. Zero is given for a woman having the utilization score less than 59 (50 per cent of total Care index, which has the maximum score of 120).

Category -1 represent the woman having utilization of maternal health care score 60 or more.

Independent Variables:

- Region (Ref category: Region – 3).
- Residence (Ref category: Rural).
- Age of women (Ref category: < 30 years).
- Gravida (Ref category: 4 or more)
- Education of women (Ref category: Illiterate)
- Education of husband (Ref category: Illiterate)
- Caste (Ref category: Scheduled caste)
- Mass media (Ref category: No Television / Radio)
- Standard of living (Ref category: low).

Reference category is having low utilization of maternal health care performance

The Results of Logistic Regression Analysis is given in Table 6. Overall performance of the model used in the analysis and the association between independent variables is significant as expected. That is, women in all the regions except region – 2 are more likely to use utilization of maternal health care but the woman in region -2 are least likely to use this care. Woman living in regions 4 and 5 are approximately two times more likely to avail this care than woman living in region – 3. Woman living in Region 7, 8 and 1 are approximately 4, 4 and 9 times respectively more likely to use care than woman living in Region -3.Looking at the other independent variables, the regression coefficient for residence, age of women, and exposure to mass media is not significant. This implies that older woman is less likely to use the utilization of maternal health care. Further the regression coefficient for the gravida is significant. Woman with gravida one, two and three are more likely to use this care than woman with 4 or more gravida. Woman studied 6 to 12 standard of schooling and woman studied '12 or more' standard of schooling are approximately 2 or 5 times are more likely to use utilization of maternal health care than illiterate woman. The same pattern is observed for the education of husband. The regression coefficient is significant for the caste and standard living of women. Non-SC/ST women are 1.5 times more likely to use this health care than Scheduled Caste women. Woman in high standard of living are approximately 2 times more likely to use care than women in low standard of living. In sum, considering the odds ratio, it seems that women living in all the regions expect region - 2, woman with gravida 1or 2 or 3, woman and their husband studied '6 or more' standard of schooling, non- SC/ST women, and women living in medium or high standard of living are more likely (significant) to use the utilization of maternal health care when compared to their counter parts.

DISCUSSION

A sample of 7370 women in 15 – 44 years who gave live birth during the past three years prior to District Level Household survey – Reproductive Child Health (Round – II 2001 – 2002 and 2003 – 2004) conducted in all the 30 districts of Tamil Nadu were considered for the present investigation. The utilization of maternal health care, measured as mean score is 77.8 for the whole Tamil Nadu. It varies across the districts in Tamil Nadu. It is low in Villupuram district and high in Erode and Nilgiris districts. Twelve out of 30 districts are below the state average of utilization of maternal health care performance. The regions 2 and 3 need the attention of programme personnel for improvement in the use of this health care. Region – 2 consists of districts: Tiruvallur, Vellore, Dharamapuri and Tiruvannamalai, and region – 3 consists of districts: Villupuram, Salem, Namakkal, Perambalur, Ariyalur and Cuddalore.

While studying the association between characteristics of women and utilization of maternal health care, it is found that among social variables, religion, caste and education of women and their husband are significantly associated with the use of this care. Rural women, SC/ST women, and illiterate women are less likely to avail this. Standard of living, age of women, age at marriage of women, order of pregnancy, and exposure to electronic media is significantly associated with the utilization of this care. Women in 15 -19 years and also '35 or more' years, women got married at '18 or less' years, women with '4 or more' gravida, women in low standard of living, and women not exposed to electronic mass media are less likely to utilize the maternal health care. In this context the study of Griffiths and Stephenson (2001) can be mentioned herewith. They examined utilization of maternal health care services among two rural and urban populations of Pune and Mumbai in Maharashtra, India. According to them socioeconomic status was not a barrier to service use when women perceived the benefits of the service to outweigh the cost, and when the service was within reasonable distance of the respondent's place of residence. A large number of women perceived private services to be superior to those provided by the government, although cost often meant they were unable to use them. Respondents identified the poor quality of services offered at government institutions to be a motivating factor for delivery at home. Sunil et al., (2005) made an attempt to examine individual and program factors matter in the utilization of maternal care services or not in rural India. Their findings suggest that in

addition to individual characteristics, program and system factors influence the utilization of maternal care in rural area of India. Mere presence of a private health care facility need not necessarily improve utilization.

In the present study region makes the difference in the observed significant association between utilization of maternal health care and independent variables at the state level. Though religion and age of women are significantly associated with the use of this health care at the state level, it is not so in each region. Out of eight regions, the observed association at the state level is established for SC/ST in three regions, for education of women / husband in four regions, for residence in five regions, for standard of living in seven regions, for exposure to electronic mass media in five regions, for age at marriage women in five regions, and for order of conception in four regions. All the independent variables, except religion and age of women, show a significant association with the utilization of maternal health care only in the region – 3. It seems that the status of a district in terms of Human Development Index is positively associated with the use of this health care in Tamil Nadu.

Based on the findings of this study thus it can be suggested that for further improvement in the utilization of maternal health care in Tamil Nadu priority should be given to the districts which are below the state average of utilization of maternal health care performance.Regions – 2 (Tiruvallur, Vellore, Dharamapuri and Tiruvannamalai) and Region -3 (Villupuram, Salem, Namakkal, Perambalur, Ariyalur and Cuddalore) needs special attention of the programme implementers of RCH programme to improve the utilization of maternal health care further. While implementing the RCH programme appropriate strategy can be adopted to ensure the reach and utilization of maternal health care for the unmet need of target groups: rural women, SC/ST women, illiterate and less educated women, women got married at 18 years or less, women with higher order of gravida (4 or more), and women in low standard of living. Since the study has not analyzed mother care and child care separately and identified the corresponding unmet need target groups which had the less coverage, further research is needed on individual major component of utilization of maternal health care in order to improve the utilization of this health care in Tamil Nadu.

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