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RESEARCH ARTICLE

A CROSS-SECTIONAL STUDY ON UTILISATION OF MATERNAL HEALTH CARE SERVICES IN THE RURAL AREA OF KANCHIPURAM DISTRICT, TAMIL NADU

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ABSTRACT

Background: Maternal Mortality and Morbidity remains high even though several national programmes exists for improving maternal and child health in India. This could be related to several factors, an important one being is non-utilisation or poor utilisation of antenatal health-care services, especially among rural population. **Objectives:** To estimate the utilisation of maternal health care services in the rural area. To assess the factors influencing their utilisation of maternal health care services. **Materials and Methods:** The study was carried out as a cross-sectional study among 284 mothers in the field practice area of Sree Balaji Medical College and Hospital, Chennai, whom were selected using simple random sampling technique. The data regarding the utilisation were obtained using a pre-tested, semi-structured questionnaire. **Results:** In this study 35% were illiterates, nearly 60.21% have got registered with the Government sector, 59.51% of the mothers had four or more antenatal visits, 64.08% have received two doses of tetanus toxoid, and 73.24% have taken iron and folic acid tablets, proportional of women who received full antenatal care is 41.2%. The factors which were identified to have statistically significant association with better utilisation of antenatal health services were age >30 years, higher educational status, skilled workers, those having their first child and higher socioeconomic class. **Conclusion:** From this study, it had been identified the fact that antenatal health care services were not utilised fully by the population in the rural area of Kanchipuram district. So, strengthening of awareness regarding the maternal health care services and its importance of reducing the maternal mortality and morbidity is still required in rural area of Tamil Nadu.

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INTRODUCTION

Maternal Mortality and Morbidity remains high even though several national programmes exist for improving maternal and child health in India. Antenatal health care plays an important role in reducing the maternal mortality rate. The WHO recommends a minimum of four antenatal visits for pregnant women in order to receive a tetanus toxoid vaccination, 100 Iron and Folic Acid (IFA) tablet as prophylaxis for nutritional anaemia, screening and treatment for infections and for identification of warning signs during the pregnancy during the antenatal care (WHO, 2018). Mothers and children approximately form 71.14% of the total population in any developing country. In India women of child bearing age (15-45 years) constitute about 32.2% of the total population. By virtue of their numbers, mothers form major consumers of the health care services.

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They not only form a large group but they comprise the vulnerable or special risk groups. The risk is associated with pregnancy, childbirth and post-natal period. Promoting women's health improves not only individual health but also the health of the family, community and the nation. Hence women acquire a special place in the community (Park, 2013). A number of programs have been launched by the Government of India for the welfare of the women belonging to reproductive age group, but still significant reduction in maternal mortality and morbidity has not been achieved yet. The highest maternal mortality ratios can be witnessed in India. India accounts for approximately 20% of all the maternal deaths globally [(1)]. Majority of maternal deaths can be prevented through appropriate maternal health services during antenatal period. The quality of care and accessibility to Full ANC is more important. As per the NFHS-4 data mothers who received full ANC was 43.8% in rural area. Similarly, mothers who received full PNC was 73.8% in rural area of Tamil Nadu (NFHS, 2018).

Aims and Objectives

- To estimate the utilisation of antenatal health care services in the rural area of Kanchipuram district, Tamil Nadu
- To assess the factors influencing their utilisation of antenatal health care services in the rural area of Kanchipuram district, Tamil Nadu

MATERIALS AND METHODOLOGY

This study is acommunity based descriptive cross-sectional study conducted in the rural field practice area (Padappai) of Sree Balaji Medical College and Hospital in Kancheepuram district, Tamil Nadu. The study was carried out from June 1 st 2017 – March 31 st 2018. Mother of children of age group less than 2 years old who were resident of particular area at least for a minimum period of 6 months or more were included in this study. Sample size was calculated on the basis of 46.2% of pregnant women. having received full ANC in rural areas of Kanchipuram district as per District Level Household and facility Survey-4(DLHS-4) (DLHS-4, 2011) data, with an absolute precision of 6%. Using the formula N = 4 pq/L (Park, 2013), sample size is taken as 276. Assuming the 10% of non-responsiveness, the sample size is taken as 303. From the Maternal and Child Healthcare Register available with the local health authority, a complete list of mothers, who have delivered in the past two years was prepared. The study subjects as per our sample size 303 were collected by a simple random technique using computer generated random numbers. From the Maternal and Child Healthcare Register available with the local health authority, a complete list of mothers, who have delivered in the past two years was prepared. The study subjects as per our sample size 303 were collected by a simple random technique using computer generated random numbers. A pretested and semi-structured questionnaire was used as study stool for data collection, by interviewing the study participants. The questions were adopted from National Family Health Survey (NFHS-4) (NFHS, 2018) questionnaire and modified. The data was collected by interviewing the mothers as per our inclusion criteria using the proforma by house to house visit. The questionnaire was prepared in English and orally translated to local language (Tamil) while conducting the interview. The interview was conducted by the investigator himself and their responses were recorded in the questionnaire. The statistical analysis of data was done using descriptive and analytical statistics. The descriptive statistics analysed were presented as frequency distribution and percentage. The analytical statistics used were Chi – square and Confidence Interval. The association of occupational hazards with health problems was assessed. P value < 0.05 was considered as statistically significant value. Data was entered in Microsoft excel and analysed using the software SPSS, version 22 software.

RESULTS

Table 1 determines the socio Demographic characteristics of our study population. Among the age group (Mean age=26.7±3) it is observed that majority of the study population belongs to the age group 26-30years which is about 140(46.2%). The maximum number of study participants of about 62.7% had their first pregnancy at the age of 21-25. Around 80% of the study population were Hindus, whereas 10% were Muslims and the remaining 10% Christians. As per the Educational status the majority of the study participants of about 37.3% have completed their higher secondary and around 1% of the study population were illiterate.72.6% were housewives in our study population and only 27.4% were working among our total study population. Majority of the study population about 60% belongs to joint family and 40% belongs to nuclear family. As per the Modified BG Prasad scale[5] most of our study participants fall in class II category of about 50.5%.

Table 1. Frequency distribution of socio demographic characteristics of respondents

Socio-demographic data	Frequency (n)	Percentage (%)
Age (mean=26.7±3)		
≤20	01	0.3
21-25	117	38.6
26-30	140	46.2
>30	45	14.9
Age at first pregnancy		
(mean=23.1±2)	56	18.5
≤20	190	62.7
21-25	56	18.5
26-30	01	0.3
>30		
Religion		
Hindu	242	79.9
Muslim	30	9.9
Christian	31	10.2
Education status		
Illiterate	03	1.0
Primary	04	1.3
Middle	15	5.0
High school	56	18.5
Higher secondary	113	37.3
Graduate and above	112	36.9
Occupation		
Housewife	220	72.6
Working	83	27.4
Type of family		
Joint family	183	39.6
Nuclear family	120	60.4
Socio-economic status*		
Class I (6574&above)	16	5.3
Class II (3287-6573)	153	50.5
Class III (1972-3286)	129	42.6
Class IV (986-1971)	05	1.7

*Socio-economic status as per B.G. Prasad's classification.

Table 2 determines the utilisation of Antenatal Health care services by our study participants. The majority of the health care facility visited by our study participants for the ante natal health care services were Government hospital/PHC/subcentre which was about 83.8%. The maximum of about 96.7% had registered their pregnancy in any of the health care facility. Among the antenatal visit, 59% had visited 4 or >4 ANC visits and still 41% had incomplete ANC visits. Among our study population around 63.4% had their first ANC visit within 1-3 months. Around 98% of our study participants had received two doses of TT injections and around 2% didn't remember about number of TT injection they received. Regarding IFA tablets intake, 100% of our study participants had taken 100 IFA tablets. The table clearly showed that around 54.8% of participants had been visited by health care worker and 45.2% had not been visited by health care worker during their pregnancy period. Among the total study populations 59% had received complete ANC which includes two doses of TT injections, 100 IFA tablets intake and 4 ANC visits and remaining had received incomplete ANC services. Regarding the advices during antenatal period which includes advice on complication, advice on place of delivery, advice on diet and advice on baby care around 42.2%, 65.7%,80.5% and 59.1% had received advices respectively.

Table 2. Utilisation of antenatal health care services by our study participants

Antenatal care	Frequency (n)	Percentage (%)
Type of health care facility for ANC		
Government hospital/ PHC/ Subcentre	244	83.8
Private institutions	49	16.2
ANC registration		
Registered	293	96.7
Not registered	10	3.3
ANC visit		
≤ Three visits	124	41.0
≥ Four visits	179	59.0
First ANC visit		
1-3 months	192	63.4
4-6 months	110	36.3
6-9 months	01	0.3
Health care worker visit		
Visited	166	54.8
Not visited	137	45.2
TT injection		
One	00	
Two	297	98.0
Don't remember	06	2.0
IFA		
Received	303	100
Not received	00	0.0
Full ANC *		
Received	179	59.0
Not received	124	40.9
Advice on complications of pregnancy		
Received	128	42.2
Not received	175	57.8
Advice on place of delivery		
Received	199	65.7
Not received	104	34.3
Advice on diet		
Received	244	80.5
Not received	59	19.5
Advice on baby care		
Received	179	59.1
Not received	124	40.9
Monetary benefit**		
Received	168	55.4
Not received	135	44.5

*Full ANC includes four antenatal visits, 100IFA intake, two doses of TT.
** Monetary benefit denotes Muthulakshmi reddy scheme.

Table 3. Factors influencing the utilisation of antenatal care

SOCIO – DEMOGRAPHIC CHARACTERISTICS		Full ANC recieved	Full ANC not recieved	Chi Square	Degrees of freedom	P Value
AGE	≤20	0(0%)	1(0.3%)	10.4	3	0.01*
	21-25	73(24.09%)	44(14.5%)			
	26-30	72(11.2%)	68(22.4%)			
	>30	34(11.2%)	11(3.6%)			
EDUCATION	Illiterate	2(0.6%)	1(0.3%)	19.73	5	0.001*
	Primary	2 (0.6%)	2(0.6%)			
	Middle	12 (3.9%)	3(4.9%)			
	High	28 (9.2%)	28(9.2%)			
	Higher Secondary	82(27.06%)	31(10.2%)			
	Graduate/Post graduate	53(17.49%)	59(19.4%)			
OCCUPATION	Housewife	147 (48.5%)	73(24.09%)	19.9	1	0.0*
	Working	32 (10.5%)	51(16.8%)			
SOCIOECONOMIC STATUS	CLASS I	3(1%)	13(4.2%)	12.5	3	0.006*
	CLASS II	96(31.6%)	57(18.8%)			
	CLASS III	76(25.08%)	53(17.4%)			
	CLASS IV	4(1.2%)	1(0.3%)			

*P<0.05 indicates association is statistically significant.

In out study population around 55.44% had received monetary benefit through Muthulakshmi reddy scheme (Dr. Muthulakshmi Reddy, 2008). The table 3 depicts the factors influencing the socio demographic factors and utilisation of antenatal health care services. Among the study participants, majority of them were belonging to the age category 26-30 years of age in which around 23.7% had received complete ANC ad 22.4% had not received complete ANC.

From the table it is observed that as the education status advances the participants who received full ANC received also increases up to higher secondary. Among total graduates of about 36.9% only 17.4% had received complete ANC, whereas 19.4% had not received complete ANC. Among the total study populations around 72.6% were housewives in that 48.5% had received full ANC and 24.09% had not received full ANC. Similarly, among the working mothers of about 27.3% around

10.5% had received complete ANC and 16.8% had not received full ANC. Among the total study participants, majority of the study participants belongs to socio economic status Class-II had received around 31.6% and not received was 18.8% among 50.4% of the particular class.

DISCUSSION

The objectives of the present studies are to estimate the utilisation of Antenatal health care services in the rural area, to assess the association between demographic status and antenatal health care services and to assess the factors influencing their utilisation of antenatal health care services in the rural area. Numerous studies over the past decade had done over the antenatal health care services, yet there is scanty literature on utilisation of antenatal health care services in the rural area of Tamil Nadu. Thus, this study attempts to fill this gap. In the following study socio demographic status, utilisation of antenatal health care services and its association with the influencing factors are discussed in comparison with other studies conducted elsewhere. In this study the majority of the study population i.e., 46.2% lies in the age group between 26-30, around 38.6% belonging to the age group 21-25 years of age. And 0.3% and 14.9% belongs to the age group ≤20 and >30 years respectively. In a study by Nidhi Sharma et al. (Sharma, 2017) majority of the study population lies in the age group between 20-24 of about 50.2%. Similarly, in a study by Rudramma et al. (Javali Rudramma, 2014), majority of participants belonging to the age group 20-24 of about 61.4%. This age difference may be due to in our study we have taken mother of children of age group less than 2 years old. In this study, around 62.7% had their first pregnancy between the age group 21-25 years of the age of the total study population. In the study by Kakati R et al. (2016), on the contrary most of the study participants of about 49.7% were in the age group between 26-30years of age. This difference may be due to age at marriage and study area. In this study majority of the study participants i.e., 37.3% were completed their higher secondary education and around 1% of our study population were illiterate.

Similarly, in the study by Hemant Mahajan et al. (2014) majority of the participants of about 55% were completed up to their higher secondary and 4.2% were illiterate among the total study population. In this study around 72.6% were housewives which constitute majority of our study participants. Only 27.4% of our participants were working among 303 study population. Similarly, in the study by Sandeep Kumar et al [11] around 89.3% were housewives and 10.6% were working and also in the study by Jyoti A et al [12] 98% were housewives and 2% were working among the total study participants. In this study around 96.7% of the study participants had ANC registered in any of the health care facility and 3.3% had not registered in any of the health care facility. Similarly, in the study by Sumit et al. (Saxena Sumit, 2017), 87.3% had registered and 12.7% had not registered in any of the health care facility. The registration of the pregnancy is more important for utilisation of the maternal health care services from the health care facility. In this study around 59% of our study population had four and more than four ante natal visits. Still 41 % of participants had three and less than three ante natal visits. Similarly, in the study by Kakati R et al. (Kakati, 2016) around 68.7% had four and more than four ante natal visits and 32.3% had three and less than three antenatal visits. Whereas in the study by Neeta et al (2017), around 73% and 27% had four and more than antenatal visits and less than 4 ante natal visits respectively. The ante natal visits are more important for both the mother and children in order to prevent the complications during the pregnancy. In our study about 98% had received two doses of TT injection and 2% didn't remember the doses of TT injection. Similarly, in the study by Kayaroganam R. (2016) et al 100% of the study participants had received two doses of TT injection. The TT vaccination is more important to prevent complication during pregnancy. The health care worker plays a major role in order to fulfil the 100 % coverage throughout the country and it is being achieved in many parts of the country. In our study all of the study participants had received more than 100 tablets of iron and folic acid tablets through the health care facility. This achievement is mainly because of the advice from the health care facility and also awareness among the study pariticpants. Similarly, in the study by Kayaroganam R et al. (Singh, 2013), around 78% had received 100 tablets of IFA. In this study around 59% of our study participants had received complete ANC and 41% had received incomplete ANC. As per DLHS-4 [4], the mothers who had received complete ANC was 46.2%, and as per NFHS- 4 (NFHS, 2018) those who received complete ANC was 43.8%. Similarly, in the study by Shruthi et al had received 62.6% had received complete ANC and 37.4% had not received complete ANC. The complete ANC includes 4 or more ante natal visits, two doses TT injection and 100 IFA tablets received. The antenatal health care services include the complete ANC acquired along with the services and monetary benefit they acquired during their pregnancy period. The complete ANC denotes those who had completed four or more than four antenatal visits, two doses of TT injection and intake of 100 IFA tablets.

The utilisation of the ANC has been markedly influenced by age of the study participants. As the age advances the utilisation of complete ANC had been reduced in our study. Similarly, in the study by Sumit et al. (2017) majority of the study participants below the 25 years of age of about 59.4% had utilised the complete ANC and as the age advances it reduced. In this study the utilisation of complete ANC had also been influenced by education status of the participants as the education level increases the utilisation also increases. Similarly, in the study by Singh RK et al. (2013) shows higher the education level the utilisation of ANC also increases. Not only the education status but also the Socio-economic status also plays a major role in influencing the utilisation of ANC. In this study, as per the B.G. Prasad's classification of Class II (upper middle class) of about 50.4% around 31.6 had received full ANC. Similarly, in the study by Sruthi et al. (2017), majority of the study participants of about of about 81.4% of Class II had received full ANC and it was statistically significant. In our study the occupation of the study participants influences the utilisation of the full ANC acquired. Mostly the housewives (72.6%) around 48.5% had utilised the full ANC. Similarly, Neeta et al [14] also concluded that among their study participants around 70% had utilised complete ANC. Working women shows higher odds of taking the ANC services than housewives.

Conclusion

It was a happy note that majority of the mother had registered their pregnancy mostly in Government institutions. About 59% of respondents received full ante natal care. The prime factor responsible for not utilising the full ANC was ante natal visits

which had updated from three visits to four visits which had become mandatory. Factors influencing maternal health services utilization operate at various levels - individual, family and community. At the individual level education, occupation, age of the participants and age at marriage were associated with utilisation of maternal health care services. At the family level, socio-economic status and type of the family plays a vital role in utilisation of maternal health care services. Similarly, at the community level, the type of the health care facility, ANC check-up, place of delivery and type of delivery were associated with utilisation.

Recommendations

Attention should also be given to regular and sustained contact between health workers and antenatal mothers particularly through home visits to develop mutual confidence. This will help in removing the prevailing misconceptions of mothers, women and other barriers of utilization of maternal health services. Importance of antenatal, intra-natal and postnatal care should be emphasized to mothers during antenatal check-ups, in immunization clinics, mother's group meetings in Anganwadi and during the home visits by health workers. The determinants of utilization influence the uptake of different maternal healthcare services differently. This means that policy makers should be careful in terms of structuring strategies to improve utilization.

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