RESEARCH ARTICLE

SOCIO-DEMOGRAPHIC FACTORS INFLUENCING UTILIZATION OF ANTENATAL HEALTH CARE SERVICES IN A RURAL AREA – A CROSS SECTIONAL STUDY

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ABSTRACT

Background: Over the past decade, national plans and programmes in India have stressed the need for universal access to health care especially the maternal & child health services in rural area. Many studies have revealed low utilization of the health care services by different segments of the society for varying reasons. With each Medical college adopting three Primary Health Centres, it is expected that there will be an increase in the utilization of the health service. This study was formulated against this background, with an objective of studying the factors influencing the utilization of health services in the spectrum of antenatal periods of a mother.

Aims & Objective: (1) To study the factors influencing the utilization of antenatal health care services in a rural area. (2) To study the content and quality of antenatal care.

Materials and Methods: A cross sectional study conducted at Handignur, Primary health centre, Belgaum. Mothers who delivered during one year period were interviewed using a predesigned questionnaire. Analysis was done by calculating Proportions and using Chi-square test.

Results: All the mothers had registered antenatal. Out of 497 mothers, 311(62.6%) mothers utilized full antenatal care. Weight, height, blood pressure, haemoglobin measurement and abdominal examination were performed in more than 95% of mothers. The socio-demographic factors like literacy status, occupation, socioeconomic status and parity were found to influence the pattern of utilization.

Conclusion: The results revealed that utilization of antenatal services was good as majority of them received full antenatal care. The prime reason for non- compliance of IFA tablets was side effects. The private health facility was utilized more compared to government services.

Key Words: Utilization; Content and Quality; Antenatal Care; Socio-Demographic Factor; Rural

Introduction

Antenatal care (ANC) is the care of the woman during pregnancy.[1] ANC is a critical element for reducing maternal mortality and for providing pregnant women with a broad range of promotive and preventive health services. One of the most important functions of ANC is to offer health services and to assess weight, height, blood pressure, haemoglobin which can significantly improve the health of women and their children. ANC is also an opportunity to inform women about the dietary needs, intranatal care, danger signs and symptoms for which immediate assistance should be sought from a health care provider.[2] The current scenario depicts increased availability and easy accessibility of health care services both in the rural and urban areas.[3] The content and quality of antenatal care and the availability of effective referral with essential obstetric care are important for antenatal care to be effective. However many studies have revealed low utilization of antenatal health care services for varying reasons. A few studies show considerable improvement in utilization of antenatal care, but there is little evidence on the content and quality of antenatal care

in these settings.[4] This study was conducted with the objective of studying the factors influencing the utilization of antenatal health care services and to study the contents and quality of antenatal care.

Materials and Methods

Study Area: The study was conducted in Handignur Primary Health Centre (PHC), rural field practice area of department of Community Medicine, J.N. Medical College, Belgaum, Karnataka, India.

Study Design: Community based cross- sectional study.

Study Period: The study was conducted from June 2008 to December 2008.

Study Participants: All married women residing in the sixteen villages of Handignur PHC area, who had delivered during the previous one year.

Sample Size: Of the total 516 married women who delivered in one year period, 497 women gave consent and were included in the study.

Method of Data Collection: To get complete information about the antenatal health care utilization, women who delivered in previous one year were interviewed. The women were visited at their home. Data was collected after taking informed consent, using predesigned and pretested questionnaire which included information of socio-demographic variables and content and quality of antenatal care.

Statistical Analysis: Data was analyzed by calculating rates and proportions. Chi-square test was used to find the significance. Analysis was done using SPSS v. 11 software.

Results

The socio-demographic profile of the mothers is given in Table 1. Out of 497 mothers, 305 (61.4%) mothers were aged between 20-24 years, mean age of mothers was 23.3 ± 3.14 years. Most (71.4%) of the mothers lived in joint families, 21.5% in nuclear family and 7.1% in three generation family. Only 1% of mothers were Muslims and 99% of mothers were Hindus. Majority of mothers (83.1%) were housewives and 16.9% were working. Second para mothers were more (40.1%) than primipara (39.6%), 3rd para (15.1%) and 4th para (4.2%). Grand multipara, a high risk status was seen in one percent of mothers.

Antenatal registration was 100%, among them 56.5% of mothers registered their pregnancy in the first trimester (Fig 1). Table 2 depicts, that 50.3% of mothers registered at a government health facility, 41.4% mothers visited private hospitals for their antenatal checkups, 37.9% government health centre and 20.7% visited both government and private hospitals. Majority (83.1%) mothers had three or more antenatal visits. Majority (65.6%) mothers had taken 100 or more Iron and Folic Acid (IFA) tablets, partial or non-consumption of IFA tablets was noted in 34.4% of mothers, the prime reason being side effects of tablets. All the mothers were immunized with 2 doses or a booster dose of tetanus toxoid (TT) injection (Table 3).

Fig 2 reveals, full antenatal care (three or more antenatal visits with at least one or booster dose of tetanus toxoid injection and 100 or more IFA tablets) was utilized by 62.6% of mothers. Weight, height, haemoglobin were measured in 99.6%, 95% and 99.8% of mothers respectively. Blood pressure recording and urine test was done for all the mothers. Abdominal examination was performed in 99.2% of mothers (Table 4). The various advices received during antenatal period is shown in Table 5, dietary advice was given to 95.2% of mothers whereas family planning advice was given to only 51.5% mothers.

Table-1: Socio-demographic prolife of the mothers

	Category	Frequency	Percentage
Age (years)	15- 19	26	05.2
	20- 24	305	61.4
	25-29	146	29.4
	≥30	20	04.0
Socioeconomic Status	Class I	10	2.0
	Class II	39	7.8
	Class III	138	27.8
	Class IV	242	48.7
	Class V	68	13.7
Literacy Status	Illiterate	90	18.1
	Primary school	64	12.9
	Middle school	112	22.5
	High school	173	34.8
	College	58	11.7

Table-2: Place of Registration and Number of antenatal visits

	Category	Number	Percentage
Place of Registration	Subcentre	71	14.3
	PHC	63	12.7
	District hospital	106	21.3
	Private	247	49.7
	Others*	10	2.0
Number of Antenatal Visits	1	05	01.0
	2	79	15.9
	≥3	413	83.1

* ESI, Military Hospital

Table-3: Details of Antenatal care

	Category	Number	Percentage
Number of TT Injections Received	Single dose as booster	44	08.9
	2	453	91.1
Number of IFA Tablets Consumed	≥100	326	65.6
	60-100	52	10.5
	30-60	99	19.9
	<30	17	3.4
	Nil	3	0.6
Reasons for Partial or Non-Consumption of IFA Tablets	Received less tablets	20	11.7
	Side effects	77	45
	Objection from family members	36	21.1
	Others*	38	22.2

* Mothers saying baby grows big

Table-4: Distribution of mothers according to details of antenatal check-up

Measurements/ Tests	Done		Not done		Total	
	No.	%	No.	%	No.	%
Weight	495	99.6	02	0.4	497	100
Height	472	95.0	25	5.0	497	100
Blood pressure	497	100.0	00	0.0	497	100
Haemoglobin test	496	99.8	01	0.2	497	100
Urine test	497	100.0	00	0.0	497	100
Abdominal examination	493	99.2	04	0.8	497	100

Table-5: Distribution of mothers according to advice received during antenatal check-up

Advice	Received		Not received		Total	
	No.	%	No.	%	No.	%
Diet	473	95.2	24	4.8	497	100
Danger signs	427	85.9	70	14.1	497	100
Intranatal care	392	78.9	105	21.1	497	100
Newborn care	315	63.4	182	36.6	497	100
Family planning	256	51.5	241	48.5	497	100

The study revealed that, percentage of mothers who registered in first trimester, who had three or more antenatal visits and who utilized full ANC, increased gradually as the literacy status of the mother increased.

Table-6: Association of literacy status, Occupation, Socio-Economic Status Class and Parity of mother with utilization of antenatal services										
Variables		**Time of registration**			**No. of antenatal visits**			**Full ANC**		
		I Trimester	II & III Trimester	Total	≥ 3	<3	Total	Utilized	Not utilized	Total
Literacy Status	Illiterate	28 (31.1)	62 (68.9)	90 (100)	52 (57.8)	38 (42.2)	90 (100)	36 (40)	54 (60)	90 (100)
	Primary School	24 (37.5)	40 (62.5)	64 (100)	47 (73.4)	17 (26.6)	64 (100)	28 (43.8)	36 (56.2)	64 (100)
	Middle School	57 (50.9)	55 (49.1)	112 (100)	96 (85.7)	16 (14.3)	112 (100)	68 (60.7)	44 (39.3)	112 (100)
	High School	126 (72.8)	47 (27.2)	173 (100)	160 (92.5)	13 (7.5)	173 (100)	130 (75.1)	43 (24.9)	173 (100)
	College	46 (79.3)	12 (20.7)	58 (100)	58 (100)	00 (0)	58 (100)	49 (84.5)	9 (15.5)	58 (100)
	Total	281 (56.5)	216 (43.5)	497 (100)	413 (83.1)	84 (16.9)	497 (100)	31 (62.6)	186 (37.4)	497 (100)
		$\chi^2= 64.64$, df=4, p=0.000			$\chi2= 68.34$, df=4, p=0.000			X2= 52.994, df=4, p=0.000		
Occupation	Housewife	245 (59.3)	168 (40.7)	413 (100)	61 (14.8)	352 (85.2)	413 (100)	264 (63.9)	149 (36.1)	413 (100)
	Working	36 (42.9)	48 (57.1)	84 (100)	23 (27.4)	61 (72.6)	84 (100)	47 (56)	37 (44)	84 (100)
	Total	281 (56.5)	216 (43.5)	497 (100)	84 (16.9)	413 (83.1)	497 (100)	311 (62.6)	186 (37.4)	497 (100)
		$\chi2 =7.701$, df = 1, *p = 0.006			$\chi2 =7.904$, df = 1, *p = 0.005			$\chi2 =1.893$, df = 1, *p = 0.169		
Socio-Economic Status Class	I &II	41 (83.7)	8 (16.3)	49 (100)	2 (4.1)	47 (95.9)	49 (100)	39 (79.6)	10 (20.4)	49 (100)
	III	79 (57.2)	59 (42.8)	138 (100)	22 (15.9)	116 (84.1)	138 (100)	87 (63)	51 (37)	138 (100)
	IV	128 (52.9)	114 (47.1)	242 (100)	45 (18.6)	197 (81.4)	242 (100)	149 (61.6)	93 (38.4)	242 (100)
	V	33 (48.5)	35 (51.5)	68 (100)	15 (22.1)	53 (77.9)	68 (100)	36 (52.9)	32 (47.1)	68 (100)
	Total	281 (56.5)	216 (43.5)	497 (100)	84 (16.9)	413 (83.1)	497 (100)	311 (62.6)	186 (37.4)	497 (100)
		$\chi2 =17.8$, df = 3, *p = 0.000			$\chi2 =7.60$, df =3, p = 0.055			$\chi2 =8.87$, df =3, *p = 0.0311		
Parity	1	131 (66.5)	66 (33.5)	197 (100)	28 (14.2)	169 (85.8)	197 (100)	131 (66.5)	66 (33.5)	197 (100)
	2	108 (54.3)	91 (45.7)	199 (100)	29 (14.6)	170 (85.4)	199 (100)	134 (67.3)	65 (32.7)	199 (100)
	3	33 (44)	42 (56)	75 (100)	19 (25.3)	56 (74.7)	75 (100)	37 (49.3)	38 (50.7)	75 (100)
	≥4	9 (34.6)	17 (65.4)	26 (100)	8 (30.8)	18 (69.2)	26 (100)	9 (34.6)	17 (65.4)	26 (100)
	Total	281 (56.5)	216 (43.5)	497 (100)	84 (16.9)	413 (83.1)	497 (100)	311 (62.6)	186 (37.4)	497 (100)
		$\chi2 =18.25$ df =3, * p = 0.000			$\chi2 =9.14$, df=3, * p = 0.028			$\chi2 =17.5$, df =3, * p = 0.001		

Figures in parenthesis indicate percentage
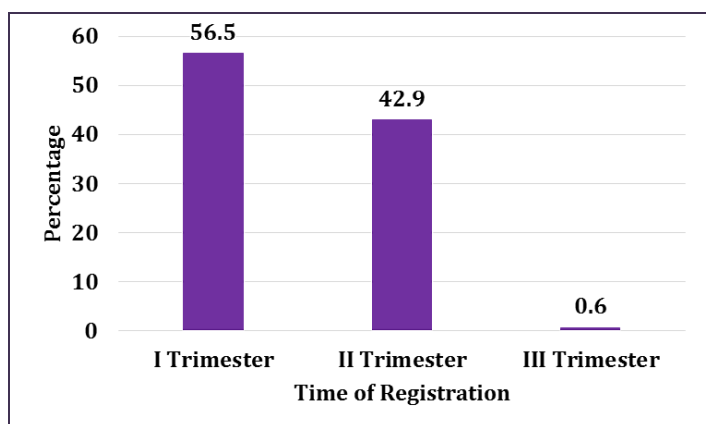
Figure-1: Distribution of mothers according to time of antenatal registration
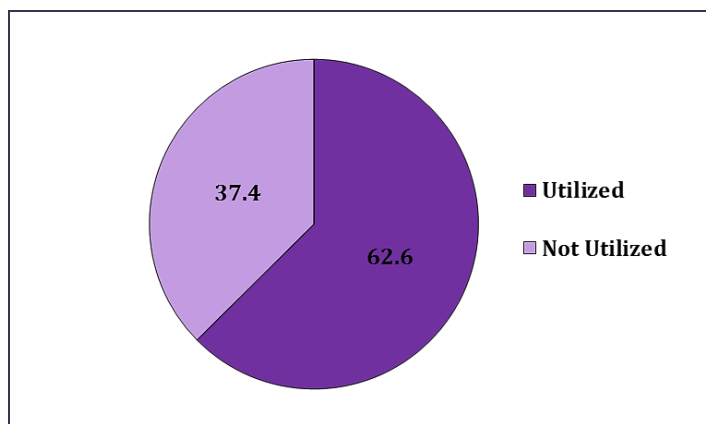
Figure-2: Distribution of mothers according to utilization of full ANC services

The association between literacy status and utilization of antenatal services was statistically significant (p=0.0000). The difference in utilization of antenatal service between mothers who were housewives and working mothers was statistically significant (p<0.05), as the percentage of housewives who registered early and had three or more antenatal visits was more compared to working mothers (Table 6). It was observed that, as the socioeconomic status decreased percentage of mothers who registered early and utilized full ANC also decreased. This difference was statistically significant (p<0.05, Table 6). It was noted that as the parity increased, percentage of mothers who registered in first trimester, had three or more antenatal visits and utilized full ANC decreased. This association was statistically significant (p<0.05, Table 6).

Discussion

In our study antenatal registration was 100 percent, of which 56.5% of mothers registered in the first trimester. Our findings were in agreement with District Level Household Survey (DLHS)-3, according to which 56% of mothers in rural area of Belgaum had registered in first trimester of gestation.[5] In another study conducted in Kolkata, antenatal registration was 100%, of which 58% of mothers had registered within 16 weeks.[6]

In our study, 14.3% of mothers had registered at subcentre, 12.7% at PHC, 21.3% at district hospital, 49.7% in private clinics or hospital and other 2% registered at Employee State Insurance (ESI)/ Military hospital. Antenatal services were availed at private hospitals by 41.4% mothers, 20.1% mothers visited district hospital, 6.8% PHC, 3.4% subcentre and 1.2% visited health facilities like ESI or military hospital for antenatal services. Remaining 27.1% of mothers either visited more than one

government health facility or both government and private hospitals. In a study conducted in rural area of Aligarh, 78% of antenatal cases were registered at rural health and training centre (RHTC), 15% at CHC and only 6.8% at private hospitals.[7] A study done at Shindolli village of Belgaum found 48.9% women visited private hospitals, 17.74% visited district hospital, and 16.3% and 9.7% visited subcentre and PHC respectively for antenatal care services.[8]

In our study, all the mothers were immunized with tetanus toxoid injection and three or more antenatal visits were made by 83.1% of mothers. Our findings are in agreement with DLHS-3 according to which, in Karnataka 81.6% of mothers had 3 or more antenatal visits and 86.9% of them were immunized with at least one dose of tetanus toxoid.[5] In a study conducted at Kolkata, three or more antenatal visits were made by 93% of mothers and all (100%) of them were immunized with two or a booster dose of tetanus toxoid.[6]

In India only 22.3% of mothers consumed IFA tablets for 90 days or more.[9] According to DLHS-3, in Karnataka 64.1% of mothers had consumed 100 IFA tablets.[5] In our study, consumption of 100 or more IFA tablets was observed in 65.6% of mothers. A study done in Shindolli village of Belgaum, the main reason for non-consumption of IFA tablets was side effects like vomiting, gastritis and diarrhoea in 52% of mothers.[8] Similar findings were noted in our study.

In a study done in 90 districts of various states in India, utilization of full antenatal care was reported by 52.5% of mothers,[10] it was 62.6% in our study. A study done in Thiruvanathapuram district, observed that weight, height and blood pressure were recorded in 74.77%, 14.25% and 94.16% of mothers respectively. Hemoglobin level was estimated in 95.33% of mothers and urine test was performed in 98.83% of mothers.[11] The content and quality of ANC in present study was good as blood pressure recording and urine test was performed in all mothers. Weight, height and haemoglobin was measured in more than 95% of mothers.

The present study revealed that advice on diet and danger signs was given to 95.2% and 85.9% of mothers respectively. Advice on intranatal care and family planning were given to 63.4% and 51.5% of mothers respectively. A study conducted in Lucknow district revealed that 33.3% mothers received dietary advice. Advice on danger signs and intranatal care was received by 72% and 77% of mothers respectively.[12] A study conducted in Thiruvanathapuram district showed that dietary advice

was received by 51.3% mothers and family planning advice was received by 2.3% mothers.[11]

In the study, association between literacy status of mother and utilization of antenatal services was statistically significant. Similar association was found in a study conducted in 90 districts of various states in India, which showed that 43.7% illiterate mothers had three or more antenatal visits and 37.1% had utilized full antenatal care, which increased to 84.4% and 70.7% respectively among mothers who were graduates.[10] In other studies also, the association between literacy status of mother and utilization of full antenatal care was statistically significant.[8,13,14]

In our study, more number of housewife mothers had registered early, made three or more antenatal visits and utilized full antenatal care compared to working women. This association was statistically significant. The reason for poor utilization among working women might be due to the fact that they couldn't afford to lose their wages. In our study, socioeconomic status was significantly associated with utilization of full antenatal care and time of registration. Similar findings were seen in several other studies.[8,15]

It was observed that as the parity increased, there was decline in early registration, number of antenatal visits and utilization of full antenatal care. This association was statistically significant. The reason may be apprehensive nature of primigravida women who worried about their pregnancy and sought early and better medical care. Our findings are in agreement with study done in slums of Davangere.[3]

Conclusion

The results revealed that utilization of antenatal services was good as majority of them received full antenatal care. The prime reason for non- compliance of IFA tablets was side effects. The private health facility was utilized more compared to government services. The various antenatal components and advices were given to majority of mothers, yet there is scope for improvement. Literacy, socioeconomic status and parity of mother significantly influenced the utilization of full antenatal care.

RECOMMENDATIONS

1. Promotion of female literacy and empowerment are required to improve utilization of maternal health services.
2. On job training can be given to health care providers on various antenatal components and advices.

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