

*Original research article***ASSESSMENT OF UTILIZATION OF ANTENATAL CARE SERVICES AMONG PREGNANT WOMEN VISITING TERTIARY CARE HOSPITAL IN CHENNAI, TAMIL NADU.**

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Abstract

Introduction: Antenatal care (ANC) is the care provided by skilled health –care professionals to pregnant women to ensure the best health conditions for both mother and baby during pregnancy. Through detection and treatment of pregnancy-related complications, and through the identification of women and girls at increased risk of complication during labour and delivery, it prevents maternal mortality and morbidity.

Methods and Material: It was a hospital based cross-sectional study conducted over a period of four months from July 2021 to October 2021 among 200 antenatal women who were admitted for delivery in a tertiary care hospital. Universal sampling technique were adopted to select the participants. Data were collected using pre-designed semi-validated questionnaire and analysed using SPSS (ver_18.0) software.

Results: The overall complete antenatal care utilization was 42%, with nearly 50% of women consuming 100 or more Iron and folic acid tablets and 100% utilization of immunization against tetanus. Factors like maternal age, type of family, level of education, spouse education, parity and socio-economic status of the family were found to be statistically associated with complete antenatal care utilization.

Conclusions: Antenatal care utilization was low which shows the need for the scaling up of ANC services even during Covid-19 period.

Key words: utilization, antenatal care, tertiary care hospital

Introduction

Antenatal care (ANC) can be defined as the care provided by skilled healthcare professionals to pregnant women and adolescents girls to ensure the best health conditions for both mother and baby during pregnancy.^{1,2} It includes: early risk identification, prevention, and management of pregnancy- related or concurrent diseases; health education and health promotion, which helps in reducing maternal and perinatal morbidity and

mortality. Directly, through detection and treatment of pregnancy-related complications, and indirectly, through the identification of women and girls at increased risk of complication during labour and delivery, thus ensuring appropriate care and referral services at the right time.³

In India, Antenatal visits are taken as a proxy for measuring the level of antenatal care services provided, the successive National family health surveys (NFHS)- 4 (2015-16) and NFHS-

5(2019-21) reported the rise in utilization of four or more antenatal visits from 51.2%⁴ to 58.1%⁵ respectively. At the national levels with slight increase in urban areas from 66.4% to 68.1% respectively.⁵ The proportion of four or more ANC visits in Tamil Nadu is reported at 89.9% (NFHS-5)⁶, which is considerably higher than the national level. This improvement in ANC service is commendable but, there is a suggestion that many Indian women do not achieve the recommended four or more ANC visits, a proxy for comprehensive maternal care during pregnancy.

The factors like age at marriage, child bearing, child spacing, family size, fertility patterns, level of education, customs and beliefs and role of women in society have influence on the organization, delivery and utilization of antenatal care services in the community.¹ Poor access and underutilization of health services continue to contribute towards higher maternal mortality ratio along with other socio-economic factors.⁷ The present study was intended to find out the antenatal care utilization in the pregnant women attending tertiary care hospital of urban Chennai in Tamil Nadu.

Material and methods

Study setting: It was a hospital based cross-sectional study undertaken in a tertiary care teaching hospital of Urban Chennai. The study was conducted over a period of four months from July 2021 to October 2021. The study subjects were all the pregnant women who were admitted to hospital for delivery under obstetrics department during the study period and are willing to participate in the study by giving their valid consent were included in the study. While patients with co-morbid conditions and not willing to give consent were excluded from the study.

Sample size: All the pregnant women who were admitted to the hospital for delivery during the study period from July 2021 to October 2021 were included in the study. Total participants were 230, among them 30 patients were excluded due to comorbid condition and the rest 200 participants were included in the study.

Sampling method and Data collection: Universal sampling was done in the tertiary care hospital of

Chennai. Weekly 2-3 visits were done to the hospital and the mothers were interviewed at their respective wards. Data collection was preceded by a training session to medical interns who conducted the interview. Objectives of the study were explained and written informed consent was obtained from all the study participants. Those who didn't give their consent were excluded from this study.

Data was collected using a pre-designed pre-tested semi-structured questionnaire consisted of details regarding the socio demographic profile, number of antenatal visits, consumption of Iron and folic acid tablets, immunisation status and general check-up at hospital. Face validation was done for the questionnaire with the senior faculties, data collectors, and the attenders. Privacy and confidentiality were maintained throughout the study.

The study was conducted after obtaining ethical approval from the Institutional Ethical Committee (IEC). Informed written consent was also obtained from the respondents. The collected data were numerically coded and entered in Microsoft Excel 2007, and then analysed using SPSS Inc. Version 18.0., Released 2009, (SPSS Inc, Chicago, USA). Categorical variables were expressed as frequency and percentages. Association between categorical variables were tested using chi square test. P value less than 0.05 was statistically significant for all comparisons

Operational definitions

- a. Complete antenatal care utilization is defined as having three components. At least four antenatal checkups, at least one Injection Tetanus toxoid vaccine and Consumption of 100 or more Iron and folic acid tablets
- b. Underutilization of Antenatal care: It includes less than four antenatal checkups with or without Injection Tetanus toxoid and less than 100 IFA tablets consumption.

Results

Among 200 participants majority of them 96 (48%) belonged to the age group of 21-25 years. The education status of the study participants

showed that 88 (44%) were graduated and more than half of them lived in a nuclear family 116 (58%). The other demographic characteristics of the study variables were presented in Table 1.

Table1: socio demographic variables of the study participants (N=200)

Variable	Categories	Number (%)
Age	< 20 years	32(16)
	21-25 years	96(48)
	26-30 years	60(30)
	> 30 years	12(6)
Age at Marriage	18-20	70(35)
	21-25	118(59)
	26-30	12(6)
Religion	Hindu	152(76)
	Muslim	32(16)
	Others	16(8)
Type of family	Nuclear	116(58)
	Joint	72(36)
	Extended	12(6)
Education	Graduate and above	88(44)
	High school	68(34)
	Primary school	36(18)
	Illiterate	8(4)
Occupation	Employed	48(24)
	Unemployed	152(76)
Spouse education	Post graduation	64(32)
	Graduate	44(22)
	Intermediate	36(18)
	High school	44(22)
	Primary school	12(6)
Parity	Primi	90(45)
	Multigravida	110(55)
Socio-economic classification	Upper	12(6)
	Upper middle	12(6)
	Middle	40(20)
	Lower middle	68(34)
	Lower	68(34)

*socio-economic classification is based on the BG Prasad scale.

The overall complete antenatal care utilization was 84(42%), with nearly 100 (50%) of women consuming 100 or more Iron and folic acid tablets and 200(100%) utilization of immunization against tetanus. The factors associated with antenatal care utilization are given

in (table 2). Factors like age (p value 0.046), graduates (p value 0.001), nuclear type of family (p value 0.001), primi parity (p value 0.001), participants belonged to lower class (p value < 0.05) were associated with the complete ANC visit.

Discussion

Antenatal care utilization

In our study, the complete antenatal care utilization was 42%, which was similar compared to NFHS-4 data for Tamil Nadu at 46% and more than the national level of 31.1%⁴ similar study done at Kanchipuram district of Tamil Nadu reported 41%⁸ and 36.2% respectively.⁹ Proportion of women with four or more Antenatal visits was 66.5%, which is considerably lesser to reported NFHS-4 and NFHS-5 data for Tamil Nadu 81%¹⁰ and 88.8%⁶ respectively. But the finding is on par with NFHS-4 data at national level of 66.4%.⁴ Similar studies done in different setting reported 50.8%¹¹ and 59%⁸ respectively.

Consumption of Iron and folic acid tablets (at least 100) was 50%, which is low compared to NFHS-4 and NFHS-5 data for Tamil Nadu 64%¹⁰ and 84.2% respectively.⁶ Similar study done at Uttar Pradesh reported at 62.1%.¹¹ Even though the study was done at a tertiary hospital, considering the impact of covid 19 related lockdown and issues with follow up during antenatal period may be a factor for underutilization among the women.

Factors associated with Antenatal care

Factors like maternal age, type of family, level of education, spouse education, parity and socio-economic status of the family were found to be statistically associated with complete antenatal care utilization.

Maternal age: Results from various studies have found mixed evidence of an association between age and utilization of ANC services. In some studies, young age of women is identified as a determinant for utilization of ANC services.¹² However, other studies suggest contrary that increased age is associated with more utilization of ANC services.^{13,14} Educated women tend to have a greater awareness of the existence of ANC services and the advantages of using such services.¹⁴

Table 2: Factors associated with Antenatal care utilization (N = 200)

Factor	Categories	Complete ANC visit	Incomplete ANC visit	X ² value	P value
Age	<20	11(34.4)	21(65.6)	7.84	0.049
	21-25	49(51)	47(49)		
	26-30	22(36.7)	38(63.3)		
	>30	2(16.7)	10(83.3)		
Type of family	Nuclear	47(40.5)	69(59.5)	18.24	<0.0001
	Joint	25(34.7)	47(65.3)		
	Extended	12(100)	0(0)		
Education	Graduate or above	48(54.5)	40(45.5)	19.15	<0.0001
	High school	18(26.5)	50(73.5)		
	Primary school	18(50)	18(50)		
	Illiterate	0(0)	8(100)		
Spouse education	Post graduation	34(53.1)	30(46.9)	16.108	0.003
	Graduate	20(45.5)	24(54.5)		
	Intermediate	5(13.9)	31(86.1)		
	High school	21(47.7)	23(52.3)		
	Primary school	4(33.3)	6(66.7)		
Parity	Primi	53(58.9)	37(41.1)	19.99	<0.0001
	2	22(31.4)	48(68.6)		
	3	9(22.5)	31(77.5)		
Socio economic class	Upper	0(0)	12(100)	12.84	<0.05
	Upper middle	5(41.7)	7(58.3)		
	Middle	14(35)	26(65)		
	Lower middle	29(42.6)	39(57.4)		
	Lower	36(52.9)	32(47.1)		

*Pearson's chi square test was used; p value <0.05 were considered statistically significant and indicated by boldface.

Most of the studies have shown a positive association between socioeconomic status and the utilization of ANC.¹⁴ Studies have suggested that parity influences initiation of ANC, as parity increases, the experience of timely initiation of ANC decreases.¹⁵ High parity women might tend to rely on their experiences from previous pregnancies and not feel the need for antenatal care.^{8, 11, 16, 17}

Based on these findings it is essential to identify the factors that responsible for reduced ANC visit and measures to be taken to overcome. It is recommended to impart the health education as well as the impact of the ANC visits and its utilisation not only to the antenatal mothers, but also to the family members especially their partners. This

might improve the ANC utilisation and increase the visit.

Conclusions

Complete antenatal care utilization was 84(42%), with nearly 100 (50%) of women consuming 100 or more Iron and folic acid tablets and 200(100%) utilization of immunization against tetanus. Factors like maternal age, type of family, level of education, spouse education, parity and socio-economic status of the family were found to be statistically associated with it.

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Conflict of interest None declared

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