Study of utilization pattern of antenatal care services among rural women of district Patiala

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Abstract

Maternal and child health includes the broad meaning of health promotion and prevention, curative and rehabilitative health care for mothers and children. It includes areas such as pregnancy,antenatal period,birth , post natal period. It also includes child health, school health, health of a handicap child, adolescence and all other health aspects of a child. (WHO,1976). It includes the physical, mental and social well being of women during pregnancy. Since there is no reliable way to predict which woman will develop pregnancy-related complications, it is essential that all pregnant women have access to high quality obstetric care throughout their pregnancies. Antenatal care is the care of the woman during pregnancy (Saxena, 2017). The primary aim of antenatal care is to achieve a healthy mother and a healthy baby. Ideally this care should begin soon after conception and continue throughout pregnancy (Park, 2015). Thus, adequate antenatal care may prove to be an efficient tool in improving maternal and child health. Different studies have found that inadequate antenatal care has been associated with adverse pregnancy outcomes. **Methods** -District Patiala is divided into ten health blocks- four health blocks are urban and six health blocks are rural. As the present study deals with rural women so sample was collected from rural health blocks only. Multi-stage sampling method was used to draw the sample. In all, thirty villages were covered under the study. In the second stage of the sampling, ten pregnant women from each selected village were chosen purposively to meet the objectives of the study. In all, three hundred pregnant women were taken as the sample of the study. **Results**-In the present study it was found that pregnancy registration of 66% of the respondents was done during second trimester. About 26percent of the pregnancy registrations were done in first trimester. 50 percent of the respondents took 2 ANC visits while 23.67 percent respondents took 3 ANC visits. 20 percent of the respondents had received one dose of Tetanus Toxoid while 67 percent of the respondents received both doses of Tetanus Toxoid injections. It was found that 93.33 percent of the respondents consumed the tablets while 6.67percent of respondents did not consume any IFA tablets.
Conclusion- The present study revealed that caste, religion, education and occupation did not show any any significant difference in regards to utilization of ANC services by rural women of district Patiala and majority of respondents had inadequate utilization.

Keywords- Antenatal care, Maternal health, Registration of pregnancy, Utilization.

Introduction

Pregnancy is a very significant stage of women's life. It is a period of hopeful and watchful waiting that every women seeks to experience. It is a most desirable hope of all mothers-to-be to have a safe and healthy pregnancy(Gogoi,2013). One of the main goals of MDG 5 is to improve maternal health (WHO,2008). Maternal complicatiozns and poor perinatal outcome are highly associated with non utilisation of antenatal and delivery care services and poor socioeconomic conditions of the patient (Mahajan & Sharma, 2014). Antenatal care is the care of the woman during pregnancy (Saxena, 2017). The primary aim of antenatal care is to achieve at the end of a pregnancy a healthy mother and a healthy baby. Antenatal care is an opportunity to improve the health conditions of a pregnant women so that the newborn is healthy and free from any disease. It also includes the process of inculcating awareness regarding the postnatal care of mothers and the new born(USAID, 2014). Antenatal care is an opportunity to promote the benefits of skilled attendance at birth and to encourage women to seek postpartum care for themselves and their newborns(USAID, 2014). Essential components of ANC include early registration of pregnancy, at least four antenatal checkups (including the first visit for registration), administration of two doses of TT injection and consume atleast 100 tablets of IFA (Ministry of Health & Family Welfare Guidelines, 2016). Despite the government's efforts, the health system in India is still facing many problems such as lack of human resources, poor infrastructure, shortage of infrastructure and drugs supplies, and weak management of the policies. The present paper aims to analyse the utilization pattern of Maternal and Child Health services among rural women of district Patiala.

Objective of study:

1) To study the current pattern of awareness and utilization of registration of pregnancy service during antenatal period among Rural Women of District Patiala.
2) To study awareness and utilization of antenatal services in study area.
3) To study the effect of various socio-demographic variables on ANC services.

Research methodology:

District Patiala is divided into ten health blocks- four health blocks are urban and six health blocks are rural. Since the present study focuses on maternal and child health of rural women, therefore, sample was drawn from six rural health blocks. Multi -stage sampling method was used to draw the sample for the purpose of the study. In the first stage of the sampling, ten villages from each of the six health blocks were taken up. First village from the list obtained from Civil Surgeon office was selected through lottery method and rest of the villages for sample were chosen randomly. In all, sixty villages were covered under the study. In the second stage of the sampling, five women (pregnant or in post partum period) from each selected village were chosen purposively to meet the objectives of the study. In all, three hundred pregnant women were selected as the sample of the study.

Tools of Data Collection

The study is based on method of survey research. A self designed interview schedule was used to collect the relevant information about the study. The interview schedule consisted of both structured and open-ended questions. The respondents involved in the study were married women aged between 15-49 years. The interview schedule contained questions regarding socio-demographic profile of the respondents and on the utilization of ANC services by the respondents. It also contained questions about the various variables that may have an effect on the utilization pattern of ANC services among rural women of district Patiala. Secondary sources such as reports of concerned ministries were also used to supplement the data.

Data Analysis

The collected information was properly checked, verified and coded accordingly. Thereafter, Statistical analysis and Cross tabulation was done by using SPSS version 16 software and to find association between different variables.

Results

1.Pregnancy registration

Registration of pregnancy is the foremost and an essential part for availing maternal and child health services. The system of registration of pregnancy was introduced in rural Tamil Nadu, India in 2008. The aim was to collect data on antenatal, delivery and post-partum care in pregnant women and infant health. For efficient provision and use of maternal and child health services, timely registration of pregnancy is very important. Since it is necessary to have a dynamic, detailed and comprehensive record of birth and death rate as well as timely pregnancy registration to improve birth outcomes globally (Bale et al, 2003). Moreover the dearth of reliable information on pregnancy registration and birth outcomes in developing countries has led to delays in implementing the required policies and programmes (De Brouwere, V., & Van Lerberghe, W., 2001). Keeping the importance of registration of pregnancy in mind, the data regarding the same has been collected and shown in table below.

Table 1 Pregnancy registration and timings of registration.

Pregnancy Registration and its Timing.								
	Awareness level				**Utilization pattern**			
Variables	**Yes**	**No**	**Total**		**Yes**	**No**	**Total**	
Pregnancy registration	300(100)	---	**300(100)**		300(100)	----	**300 (100)**	
Timing of Pregnancy Registration								
Variable	**Awareness level**				**Utilization pattern**			
Time of Pregnancy Registration	**Ist Trimester**	**2nd Trimester**	**3rd Trimester**	**Total**	**Ist Trimester**	**2nd Trimester**	**3rd Trimester**	**Total**
	210(70)	70 (23.33)	20 (6.67)	**300(100)**	78(26)	198(66)	24(8)	**300 (100)**

Figures in parenthesis represent the percentage

The table 1 highlights that all the respondents of the study were aware that their pregnancy needs to be registered. The table also shows that all the respondents of the present study were registered. It is a very encouraging as it plays a very significant role in antenatal care of pregnant women. It also shows a part of success of the National Health Mission

As far as the timing of pregnancy registration is concerned, 70 percent of the respondents were aware that pregnancy should be registered during the 1st trimester of pregnancy but the utilization of this service shows that only 26 percent respondents got their pregnancy registered during the 1st trimester. Moreover about 23.33 percent of the respondents were aware that pregnancy should be registered during 2nd trimester but the data reveals that percent of respondents actually getting their pregnancy registered during 2nd trimester was much high (66percent). The respondents stated that they did not want to disclose about their pregnancy to anybody till the 1st trimester had passed as they feared that it was not appropriate and the pregnancy could be harmed by some evil eye. Some respondents stated that they were instructed not to visit or disclose about their pregnancy to any person by the elderly women of the family. This shows that in the present Techno Era some beliefs or superstitious still exist in our rural societies. This 66 percent of pregnancy registration is followed by 26percent respondents who registered their pregnancy during 1st trimester.

2. Awareness level and utilization of other ANC services.

Apart from ANC registration, there are other components like ANC visits, Tetanus toxoid injections and IFA tablets. The awareness level and utilization of all of these have been discussed in table 2 below.

Antenatal care is the care of the woman during pregnancy (Saxena, 2017). The primary aim of antenatal care is to achieve at the end of a pregnancy a healthy mother and a healthy baby. Most recently WHO recommended that the pregnant women should have their first contact in the first 12 weeks of gestation, with subsequent contacts taking place at 20, 26, 30,34, 36, 38 and 40 weeks' gestation. Hence, a minimum of eight contacts is recommended to improve mother and child health (WHO Guidelines, 2016).Apart from pregnancy registration, the antenatal care contains many components like registration of pregnancy, ANC visits, Tetanus toxoid injectons, consumption of IFA tablets by pregnant women. Table 2 shows the details of awareness and utilization of these components by the respondents .

Table2 Awareness and utilization pattern regarding ANC visits,TT injection and IFA tablets consumed.

Details of ANC visits made, TT injection and IFA tablets consumed										
Variable	**Awareness level**					**Utilization pattern**				
No. of ANC visits taken	**One**	**Two**	**Three**	**More than Three**	**Total**	**One**	**Two**	**Three**	**More than three**	**Total**
	30 (10)	170 (56.67)	80 (26.67)	20 (6.67)	**300 (100)**	40 (13.33)	150 (50)	71 (23.67)	39 (13)	**300 (100)**
Tetanus toxoid injection	**No idea**	**one**	**Two**	**Booster**	**Total**	**Nil**	**one**	**Two**	**Booster**	**total**
	32 (10.67)	65 (21.67)	185 (61.67)	18 (6)	**300 (100)**	37 (12.33)	60 (20)	201 (67)	2 (0.67)	**300 (100)**
Intake of IFA tablets	**Yes**		**No**			**Yes**		**No**		
	300 (100)		0 (0.0)		**300 (100)**	280 (93.33)		20 (6.67)		**300 (100)**

Figures in parenthesis represent the percentage

Table 2 shows that 56.67 percent respondents were aware of making two ANC visits are required during Antenatal period followed by 26.67 percent of respondents who were aware about three ANC visits. As far as utilization is concerned, 50 percent of the respondents made two ANC visits while 23.67 percent made three ante natal visits. 40 respondents made only one antenatal visit. The reasons for not making ANC visits by majority of these respondents were that they were daily wage labourers and could not miss their work due to their financial condition. Only 13 percent of the respondents took more than three ANC visits. The data shows that although the level of awareness is not up to the mark but utilization of ANC services is far more lower than the awareness. The data also shows that 61.67 percent of respondents were aware about the requirement of 2 Tetanus toxoid injection during ANC period. About 67 percent of the respondents utilized two doses of Tetanus toxoid injection. In the present study, approximately 94 percent of the respondents took Iron and Folic acid tablets. The table also shows that all the

respondents of the present study were aware about the intake of IFA tablet. However in the present study, approximately 94 percent of the respondents took Iron and Folic acid tablets. Around 20 respondents stated that they did not take any IFA tablets or consumed very few of them. The reason was either that the respondents were allergic to it or were facing some other health problems. Around 8 respondents stated that they were not given IFA tablets by ASHA worker due to shortage of supply.

Association between various socio-demographic variables of respondents and ANC services.

Socio-demographic variables refers to the characteristics of the population. Generally, characteristics such as age, gender, ethnicity, education level, income, occupation, birth rate, death rate, experience and place of living are taken into account under socio-demographic variables. These have a great influence on life style, health, working capacity etc on people. The study of association of socio demographic variables of respondents and ANC services is discussed in table 3 below.

Table 3 Association between various socio-demographic variables of respondents and ANC services.

Variable		Utilization of Antenatal care services							
		No. of visits				IFA tablets intake			
		1	2	3	More than 3	Less than 100	More than 100	Do not remember	None
Age of respondents	15-25years	18 (12.2)	73 (49.7)	36 (24.5)	20 (13.6)	34 (23.1)	83 (56.5)	17 (11.6)	13 (18.8)
	25-35years	8(7.6)	49 (46.7)	33 (31.4)	15 (14.3)	19 (18.1)	60 (57.1)	14(13.3)	12(11.40
	35-45years	14 (29.2)	28 (58.3)	2 (4.2)	4 (8.3)	18 (37.5)	21 (43.8)	6 (12.5)	3 (6.2)
Age at time of marriage	15-18years	4 (11.4)	16 (45.7)	11 (31.4)	4 (11.4)	8 (22.9)	16 (45.7)	5 (14.3)	6(17.1)
	18-21years	20 (12.3)	81 (50)	43 (26.5)	18 (11.1)	35 (2.6)	92 (56.8)	20 (12.3)	15 (93)
	21-24years	13 (15.7)	41 (49.4)	13 (15.7)	16 (19.3)	24 (28.9)	45 (54.2)	9 (10.8)	5(60)
Education level of the respondents	Upto Primary	2 (33.3)	4 (66.7)	0(0)	0(0)	2 (33.3)	3(50)	0(0)	1(16.7)
	Upto Middle school	5 (12.8)	14 (35.9)	11 (28.2)	9 (23.1)	10 (25.6)	20 (51.3)	4(10.3)	5(12.8)
	Upto High school	18 (15.0)	61 (50.8)	31 (25.8)	10 (8.3)	25 (20.8)	68 (56.7)	17(14.2)	10(8.3)
	Upto Senior	11 (10.4)	53 (50)	25 (23.6)	17 (16.0)	27 (25.5)	59 (55.7)	12 (11.3)	8 (7.5)

	secondary								
	Upto Graduation	3 (12.5)	17 (70.8)	2 (8.3)	2 (8.3)	5 (20.8)	13 (54.2)	2(8.3)	4(16.7)
	Upto Post graduation	1 (20.0)	1 (20.0)	2(40)	1(20)	2(40)	1(20)	2(40)	0(0)
Occupation of respondents	Job(Govt/ private)	5 (18.5)	16 (59.3)	4 (14.8)	2 (7.4)	3 (11.1)	18 (66.7)	3 (11.1)	3 (11.1)
	Business/Self employed	1 (5.6)	12 (66.7)	4 (22.2)	1 (5.6)	4 (22.2)	10 (55.6)	3(16.7)	1(5.6)
	Labour (domestic /industrial /agricultural)	12 (24.5)	26 (53.1)	7 (14.3)	4 (8.2)	11 (22.4)	23 (46.9)	9 (18.4)	6(12.2)
	Homemaker	22 (10.8)	95 (46.6)	56 (27.5)	31 (15.2)	52 (25.5)	112 (54.9)	22(10.8)	18(8.8)
	Others	0(0)	1 (50)	0 (0)	1 (50)	1(50)	1(50)	0(0)	0(0)

Figures in parenthesis represent the percentage

The table shows that 49.7 percent respondents in the age group of 15-25 years made two ANC visits and 56.5 percent respondents made more than 100 IFA tablets. About 46.7percent of respondents made two ANC visits and 57.1 percent of respondents took more than 100 IFA tablets belonged to 25-35 years of age group. Grossly, the data revealed that majority respondents i.e 57.1 percent who took more than 100 IFA tablets belonged to 25-35 years of age group while majority of the respondents i.e 58.3 percent who made two ANC visits belonged to age group of 35-45 years. Among the various age groups, the majority of respondents(49.7) who made more than two ANC visits and who took none of the IFA tablets tablets i.e 18.8 percent were in age group of 15-25. When the age of the respondents at the time of marriage was taken into consideration, it was observed that majority i.e 60 percent of the respondents who were married after 24 years of age made two ANC visits while only 5percent of them made more than three ANC visits. This is followed by 50 percent of respondents who made two ANC visits and were married in age group of 18-21 years. Only 19.3 percent of the respondents took more than three ANC visits and were in the age group of 21-24 year at the time of marriage. Education wise distribution of the respondents show 46 percent of the post graduate respondents made three ANC visits. A maximum of 70.8 percent respondents who attained education up to graduate level made two ANC visits. More than three ANC visits was made by 23.1 percent respondents who were educated upto middle school followed by 16 percent of respondents educated upto senior secondary level. About 56.7 percent of the respondents who were educated upto senior secondary level took more than 100 IFA tablets. Most of the respondents who made two ANC visits stated that they were not aware whether they were supposed to do more number of ANC visits. Some stated that they did not face any major complication during pregnancy so they did not feel any need for more ANC visits. Occupation wise distribution of respondents show that 66.7 percent respondents utilized two ANC visits were either self employed or running a business. In

addition to this, 53.1 respondents who worked as labours(domestic/industrial /agricultural) made two ANC visits. About 66.7 percent of the respondents who were doing job made more than 100 IFA tablets followed by 55.6 percent respondents who were either doing business or were self employed. However, 54.9 percent respondents who took more than 100 tablets were home makers.

Table 4 Effect of various socio-demographic variables of respondents' spouses on ANC services.

In order to find the association of various socio-demographic variables on ANC services , it becomes imperative to study the socio-demographic profile of spouses of respondents. The data regarding the same has been shown in table 4.

Variable		Utilization of Antenatal care services							
		No. of visits				IFA tablets intake			
		1	2	3	More than 3	Less than 100	More than 100	Do not remember	None
Education of spouse	Upto Middle school	0(0)	0(0)	1(100)	0(0)	0(0)	1(100)	0(0)	0(0)
	Upto High school	19 (17.1)	55 (49.5)	27 (24.3)	10 (9.0)	22 (19.8)	59 (53.2)	18(16.2)	12 (10.8)
	Upto Senior secondary	16 (10.6)	75 (49.7)	37 (24.5)	23 (15.2)	40 (26.5)	83(55)	13(8.6)	15(9.9)
	Upto Graduation	4 (12.5)	18 (56.2)	6 (18.8)	4(12.5)	7 (21.9)	18 (56.2)	6(18.8)	1(3.1)
	Upto Postgraduation	1(20)	2(40)	0(0)	2(40)	2(40)	3(60)	0(0)	0(0)
Occupation of spouse	Job(Govt/ private)	5 (10.4)	19 (39.6)	14 (29.2)	10 (20.8)	6 (12.5)	30 (62.5)	10 (20.8)	2 (4.2)
	Business/Self employed	4(9.1)	23 (52.3)	10 (22.7)	7 (15.9)	16 (36.4)	23 (52.3)	3(6.8)	2(4.5)
	Labour (domestic / industrial /agricultural)	31 (15.6)	104 (52.3)	44 (22.1)	26 (10.1)	48 (24.1)	104 (52.3)	24 (12.1)	23 (11.6)
	Others	0(0)	4 (44.4)	3 (33.3)	2 (22.3)	1 (11.1)	7 (77.8)	0(0)	1(11.1)

Annual family income	less than 50,000	1(5)	6(30)	8 (40)	5 (25)	3(15)	11(55)	2(10)	4(20)
	50,000-2lakhs	17 (10.8)	84 (53.5)	39 (24.8)	17 (10.8)	41 (26.1)	85 (54.1)	17 (10.8)	14(8.9)
	2 lakhs-4lakhs	21 (17.9)	57 (48.7)	22 (18.8)	17 (14.5)	26 (22.2)	64 (54.7)	18(15.4)	9(7.7)
	more than 4 lakhs	1 (16.7)	3(50)	2 (33.5)	0 (0)	1 (16.7)	4 (66.7)	0(0)	1 (16.7)

Figures in parenthesis represent the percentage

The table highlights the effect of variables like education and occupation of spouse along with annual income of family .When the education of respondents' spouse was taken into consideration, it was found that 56.2 percent of respondents whose wives utilized two ANC visits were educated upto Graduation level. About 49.7 percent respondents whose spouses were educated upto senior secondary level made two ANC visits. Regarding the intake of IFA tablets, it was observed that more than 100 tablets were taken by 62.5percent respondents whose spouses were doing job (government/private) followed by 52.3 percent respondents ' spouses who were doing business or self employed. Among the respondents whose annual family income was less than Rs 50,000 about 40 percent respondents had made three ANC visits while 55 percent of them took more than 100 IFA tablets. Considering the respondents whose annual family income was more than 4 lakhs, the table shows that 50 percent of them made two ANC visits and 66.7 percent of them took more than 100 IFA tablets. This shows that people earning more than 4 lakhs were better utilizing ANC services.

Discussion

The data of the present study highlights that all the respondents of the study were aware that their pregnancy needs to be registered. The table also shows that all the respondents of the present study were registered. There are other studies also carried out in different parts of the country that highlight 100 percent of registration of pregnancy such as study carried out in rural community of Pondicherry and rural north Karnataka (Metgud, Katti, Mallapur, & Wantamutte, 2009). However, this is in contrast to the study carried out by Sethi Loveleen (1997) in Delhi in which pregnancy registration was found to be 22.9 percent. A study conducted by Sahni & Sobti, (2013) showed 82.93 percent of the pregnancy registration in rural areas of Jammu.

In the present study it was found that pregnancy registration of 66percent of the respondents was done during second trimester. About 26percent of the pregnancy registrations were done in first trimester while 8 percent registrations were done during last trimester of pregnancy. This finding is much lower than findings of the study carried out by Metgud et al(2009) which revealed 98.5 percent early registrations in North Karnataka. Source of pregnancy registration in 41.47 percent of the respondents was ASHA worker followed by health professionals (23 percent). In the present study, it was observed that there was no respondent who did not make any ANC visit. It was observed that 50 percent of the respondents made two ANC visits while 23.67 percent respondents made three ANC visits. However, the recommended visits of more than four by WHO were taken by only 13 percent respondents. These findings are contrary to the findings of Sachin S Mumbare et al (2011) which showed utilization of four ANC visits by 64.76 percent pregnant women. Agarwal P et al (2007) in their study in an urban slum found that 24percent respondents did not make antenatal visit which was contrary to findings of present study. One of the studies conducted on fishermen by Rajan Patil (2011) emphasised that reducing the maternal morbidity is

significantly related to attendance to ANC.Regarding utilization of Tetanus toxoid injection, 20 percent of the respondents had received one dose of Tetanus toxoid while 67 percent of the respondents received both doses of Tetanus toxoid. 12.33 percent of the respondents did not take any Tetanus toxoid injection. The results are contrary to the study conducted by Agarwal P et al (2007)where 17percent of the pregnant women did not takeTT injection. This shows lack of awareness among respondents regarding importance of Tetanus toxoid injection.

Regarding consumption of Iron & Folic Acid (IFA) tablets by respondents, it was found that 93.33 percent of the respondents consumed the tablets while 6.67percent of respondents did not consume any IFA tablets which is much higher as compared to study conducted by Satija M et al., (2010) i.e 12.3 percent .The present study revealed that education and occupation did not show any significant difference in regards to utilization of ANC services by rural women of district Patiala and majority of respondents had inadequate utilization. one of the studies conducted by Navaneetham&Dharmalingam, (2000) concluded that utilization of ANC services was lesser in illiterate women than in literate women. Govindasamy & Ramesh (1997) in a study on Maternal and Child Health services utilization verified that there is a significant positive relationship between mother's education and utilization of MCH services. The results were similar to the study by Sachin S Mumbare et al (2016) where they found women above 30 years had utilized ANC services maximum. The most common reason stated by the respondents were lack of awareness, financial restraints, no body to accompany to the health institution and lack of time. Similar reasons for insufficient utilization of ANC services were cited by Rajiv Kumar Gupta et al (2015) in their study in North India. Regarding annual family income it was observed that respondents with annual family income of more than 4 lakhs were better utilizing ANC services .One of the studies conducted in rural Sirmour, H.P show a statistically significant relationship between antenatal visits and monthly income of the respondents(Kaur et al.,n.d).

Conclusion

The study concludes that there is a dearth of adequate awareness about ANC services among the rural women of district Patiala. Adequate utilization of maternal and child health care services is of vital importance as it has a significant impact on the well-being of the mother as well as her children. Ante natal care services forms a very crucial part of Maternal and Child Health services. The present study clearly indicates that even if the respondents are aware about certain facts till there is not adequate utilization of that service eg most of the respondents were aware that pregnancy should get registeredduringthe1st trimester still most of the respondents got their pregnancy registered during 2nd trimester due to phobia of superstitious like evil eye. The study also shows that there are multiple factors which have an impact on utilization of ANC services . No single factor can be concluded to have the maximum effect on utilization of ANC services in rural areas of Patiala. It has also been observed that ASHA workers and ANMs play an indispensable role in Maternal and Child Health care. A word of awareness needs to be spread so that there is an overall improvement in the utilization of ANC services.

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