

Utilization Pattern of Ante Natal Care Services among Rural Women

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Abstract: This study aimed to assess utilization pattern of ante natal care services among rural women. **Design:** A descriptive research design was utilized, at Maternal and Child Health Care Units, Nabarouh Central Hospital and private ante natal care clinics at Nabarouh City. **Subjects and method:** A purposive sample carried out on 136 pregnant women. Two tools of data collection were used ;the utilization of antenatal care services and factors affecting ante natal care services utilization. **Results:** The study finding revealed that the majority of pregnant women didn't receive full Ante Natal Care package. Statistical significant association between utilization pattern of ANC services and women's and husband education, nuclear family type, enough family incom, history of complicated pregnancies and cost of antenatal care services. **Conclusion:** The study concluded that the utilization pattern of Ante Natal Care services among rural women was low.**Recommendations:** Proper utilization of mass media (radio and TV) for increasing women awareness about the importance of following Full Ante Natal Care Package.

Keywords: Antenatal Care Services, Rural women, Utilization pattern.

Date of Submission: 28-09-2018

Date of acceptance: 13-10-2018

I. Introduction

Pregnancy is one of the most important events that represent powerful experience in women's lives and in the lives of their families. Although pregnancy is a normal physiological process, it is associated with certain risks to health and survival for women and for their infant [1]. Maternal Mortality Rate (MMR) is still high in developing countries even though there is an overall decrease in MMR worldwide [2]. It was estimated that 99% of maternal deaths occur in developing countries. In Egypt the estimated MMR is 33 per 100.000 live births [3].

Complications due to pregnancy and child bearing are among the leading causes of death and disability among women of child bearing age in developing countries [4]. Ante Natal Care among pregnant women is one of the important factors in reducing maternal mortality and morbidity [5&6]. Ante Natal Care (ANC) is the care provided by professional health care provider to pregnant women to ensure the best health conditions for both mother and fetus during pregnancy. Ante Natal Care is a vital health care tool that reduce the risk of stillbirths, preterm labor and pregnancy complications [7].

Egypt has a wide range of public, non governmental organizations (NGOs) and private facilities for providing health care services. The government of Egypt (GoE) has prioritized reproductive, maternal, newborn and child health (RMNCH) interventions as a main part of its strategy[8]. However, ANC services are available, accessible and affordable, there is low utilization of these services due to perceived quality is low. Previous studies in Egypt showed that many women seek private physicians due to their beliefs that private sectors provide more quality care[9].

However, primary health care centers as well as private institutions provide ANC; rural women are deprived from the health care services due to lack of knowledge about available services, ignorance and poverty[10]. In Egypt pregnancy outcomes are poor if compared to those in other developing countries due to lack of utilization of ANC services[11]. The national rate for low birth weight in Egypt is 12% of all live births and the mortality rate of low birth-weight infants in Egypt is 2.5 times more than that of full-term infants [12]. Inadequate utilization of Ante Natal Care services results in high levels of maternal morbidity and mortality especially in developing countries [13]. Most maternal deaths could be prevented if all women successfully utilized basic maternal health-care services [14].

Assessment of the utilization of Ante Natal Care services can inform health care providers about where to focus interventions which can reduce maternal and newborn mortality and improve women's outcomes[15]. So it is important to assess the utilization pattern of Ante Natal Care services among rural women.

II. Subjects and Method

Study aim: This study aims to assess utilization pattern of ante natal care services among rural women.

Study design

A descriptive cross-sectional study design was used .

Study setting

The study was conducted at Maternal and Child Health care units, Nabarouh Central Hospital and private ante natal care clinics at Nabarouh City.

Study sample

The study included 136 pregnant women at their 9th month with normal pregnancy.

Tools of Data Collection

Tool one: Semi-structured questionnaire adapted from Ntui et al.,(2013) to assess utilization Pattern of Ante Natal care services; included socio-demographic data, reproductive history , utilization of ANC services.

Tool two: Semi- structured questionnaire adapted from King'oo (2015) to assess factors affecting utilization of Ante Natal Care services, included; Maternal Awareness, Cultural Beliefs and Economic Status.

Pilot study

The pilot study was carried out on 10% of the sample in the study setting that were excluded from the study sample. The purposes of the pilot study were to test the applicability and clarify the feasibility of the study tools and it served to estimate the time needed to complete the tools. It also helped to find out any obstacles and problems that might interfere with data collection, based on findings of the pilot study, certain modification of the tools were done.

Field work

The researcher attended the MCH units and Nabarouh Central Hospital for three days per week from 9:00 A.M. to 1:00 P.M and private clinics for three days per week alternately from 1:00 P.M to 5:00 P.M. The researcher introduced herself to women, took written consent of them to be included within the study after clarification of the study aim. The researcher interviewed each woman individually for 10-15 minutes. During the interview, the researcher read every item of the data collection sheet & clarified its meaning to the woman. Women were allowed to ask for any interpretation or explanation. The researcher asked the woman and recorded her answers in the data collection sheet. The collected data were coded, stored then the results were assessed and analyzed using SPSS (statistical package of social sciences) version 21.

Ethical considerations

Official approval was obtained by submission of an official letter from the Faculty of Nursing to the responsible authorities of the study settings to obtain the permission for data collection. Approval for conducting this study was obtained from the ethics committee at Faculty of Nursing, Mansoura University. Written informed consents were obtained from every pregnant woman involved in the study after clarification of the nature and objectives of the study. Questionnaire was anonymous, did not contain any critical questions, and confidentiality of the data were maintained and the participants were informed about their rights to refuse participation or withdraw from the study at any time.

Data analysis

The collected data by tools were coded, tabulated and analyzed using statistical package of social sciences (SPSS) version 21. The differences between two groups or more were determined using chi-square test. Statistical significance was set at $p < 0.05$.

III. Results

Table 1. Frequency distribution of pregnant women according to socio- demographic characteristics(n= 136)

General characteristics	No.	%
Age (years)		
15-<25	89	65.4
25-<35	44	32.4
35-45	3	2.2
Mean ±SD	23.3 ±5.8	
Level of education		
Illiterate	2	1.5
Read and write	22	16.2
Middle education	94	69.1

Higher education	18	13.2
Level of husband' education		
Illiterate	18	13.2
Read and write	15	11.0
Middle education	82	60.3
Higher education	21	15.4
Family type		
Nuclear	66	48.5
Extended	70	51.5
Monthly income		
Not enough	17	12.5
Enough	109	80.1
Enough and can save it	10	7.4
Occupation		
House wife	128	94.1
Working	2	1.5
Student	6	4.4

Table one shows that nearly two-thirds of pregnant women(65.4%)aged between 15 and 25 years, with mean of age **23.3 ±5.8** .More than two thirds of the studied women (69.1%) and Approximately three- fifths of their husbands (60.3%) had middle level of education.Slightly more than half of the women (51.5%) were living in extended families, majority of pregnant women(80.1 %) had enough income and most of them(94.1 %) were housewife.

Table 2. Frequency distribution of pregnant women according to reproductive history (n= 136)		
Obstetric history	No.	%
Gravidity		
Once	31	22.8
Twice	52	38.2
Three times	31	22.8
4 times	15	11.0
More than 4 times	7	5.1
Mean ±SD	1.1 ±0.9	
Parity		
Nulli para	42	30.9
Once	54	39.7
Twice	32	23.5
Three times	7	5.1
4 times	1	0.7
Type of previous delivery		
None	42	30.9
Normal vaginal delivery	32	23.5
Caesarean section	59	43.4
Normal and caesarean	3	2.2
Number of living children		
None	43	31.6
One child	53	39.0
Two children	31	22.8
More than two children	9	6.6
Previous abortion		
Absent	102	75.0
Present	34	25.0
Previous fetal complications		
Absent	113	83.1
Present	23	16.9

Table two presents that nearly two-fifths of pregnant women (38.2 %, 39.7%, 39%) had two pregnancies,delivered once and had one child respectively. More than two-fifths of the studied women(43.4%) delivered previously by Caesarean Section.

Table 3.Frequency distribution of pregnant women according to their utilization of ANC services(n= 136)		
Utilization of ANC services	No.	%
Place of follow up		
MCH	6	4.4
Governmental hospital	63	46.3

Private clinic	67	49.3
Time of first visit		
First trimester	130	95.6
Second trimester	6	4.4
Number of ante natal visits		
< 8visits	78	57.4
≥ 8 visits	58	42.6
Tetanus immunization		
Not immunized	38	27.9
Immunized	98	72.1
IFA intake		
Not recieved	45	33.1
Received	91	66.9

MCH: Maternal and Child Health Care unit
IFA:Iron and Folic Acid

Table three illustrates that most of pregnant women (95.6%) had their first ANC visit at their first trimester, less than three-quarters (72.1%) received tetanus immunization and approximately two-thirds of them took iron and folic acid. More than half of the studied women (57.4%) had less than 8 visits during their pregnancy and nearly half of them(49.3%, 46.3%) utilized private clinics and the governmental hospital respectively for pregnancy follow up.

Figure (1): utilization of full ANC package (n=136).

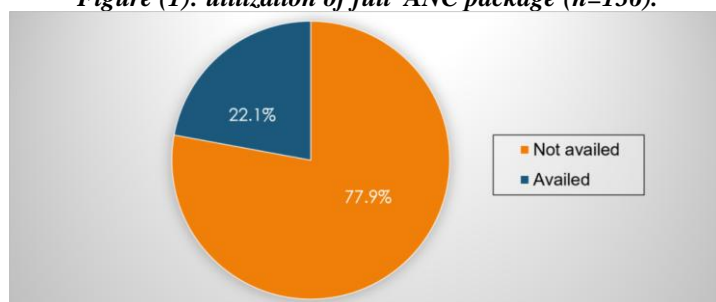


Figure one illustrates that more than three-quarters of the studied women(77.9 %)didn't receive the full ANC package and only 22.1 % of the pregnant women had received full Ante natal care package consisting of at least 8 ante natal visits, minimum 1 Tetanus Toxioid injection , daily intake of Iron and Folic Acid tablets and registration in the first trimester.

	Utilization of full ANC package				Chi square test	
	Not availed		Availed			
	No.	%	No.	%	χ^2	p
Age (years)						
15-<25	70	66.0	19	63.3		
25-<35	33	31.1	11	36.7		
35-45	3	2.8	0	0.0	1.097	0.578
Level of education						
Illiterate	1	0.9	1	3.3		
Read and write	21	19.8	1	3.3		
Middle education	73	68.9	21	70.0		
Higher education	11	10.4	7	23.3	7.803	0.050*
Level of husband education						
Illiterate	1	16.0	1	3.3		
Read and write	12	11.3	3	10.0		
Middle education	66	62.3	16	53.3		
Higher education	11	10.4	10	33.3	11.178	0.011*
Family type						
Nuclear	45	42.5	21	70.0		
Extended	61	57.5	9	30.0	7.104	0.008*
Monthly income						
Not enough	17	15.1	0	0.0		

Enough	84	79.2	25	83.3		
Enough and can save it	5	4.7	5	16.7	7.128	0.028*
Occupation						
House wife	101	95.3	27	90.0		
Working	1	0.9	1	3.3		
Student	4	3.8	2	6.7	1.421	0.491

(*) P is statistically significant if ≤ 0.05

Table four shows that there were statistically significant associations between pregnant women and their husbands level of education, the monthly income and type of family and the utilization of full ANC package. (p= 0.05, 0.01, 0.02 and 0.008) respectively.

	Utilization of full ANC package				Chi square test	
	Not availed		Availed		χ^2	p
	No	%	No	%		
gravidity						
Once	23	21.7	8	26.7		
Twice	44	41.5	8	26.7		
Three times	24	22.6	7	23.3		
4 times	10	9.4	5	16.7		
More than 4 times	5	4.7	2	6.7	2.887	0.577
parity						
Nulli para	25	23.6	17	56.7		
Once	45	42.5	9	30.0		
Twice	29	27.4	3	10.0		
Three times	6	5.7	1	3.3		
4 times	1	0.9	0	0.0	12.723	0.013*
Type of previous delivery						
None	29	27.4	13	43.3		
Normal vaginal delivery	25	23.6	7	23.3		
Caesarean section	50	47.2	9	30.0		
Normal and caesarean	2	1.9	1	3.3	3.744	0.291
Number of living children						
None	29	27.4	14	46.7		
One child	44	41.5	9	30.0		
Two children	26	24.5	5	16.7		
More than two children	7	6.6	2	6.7	4.186	0.242
Previous abortion						
Absent	89	84.0	13	43.3		
Present	17	16.0	17	56.7	20.585	<0.001**
Previous fetal complications						
Absent	103	97.2	10	33.3		
Present	3	2.8	20	66.7	67.811	<0.001**

(*) p is statistically significant if ≤ 0.05

(**) P is highly statistically significant if < 0.001

Table five shows that there was statistically significant association between parity and utilization of full ANC package. (p=0.013) .Also table five illustrates that there were highly statistically significant association between utilization of full ANC package and women who had previous abortion and previous fetal complications. (p <0.001) .

	Utilization of full ANC package				Chi square test	
	Not availed		Availed		χ^2	P
	No	%	No	%		
Cost of follow up visits						
Not expensive	52	49.1	29	96.7		
Expensive	54	50.9	1	3.3	22.005	<0.001**

(**) P is highly statistically significant if < 0.001

Table six shows that there was highly statistical significant association between cost of ANC services and utilization of full ANC package. (P <0.001)

Table 7 . Association between utilization of full ANC package and Awareness of ANC .						
	Utilization of full ANC package				Chi square test	
	Not availed		Availed		χ^2	P
	No	%	No	%		
Awareness of ANC services						
Not aware	75	70.8	15	50.0		
Aware	31	29.2	15	50.0	4.500	0.034*
Awareness of the least number of AN visits						
Less than 8 visits	16	15.1	0	0.0		
≥ 8 visits	83	78.3	30	100.0		
I don't know	7	6.6	0	0.0	7.834	0.020*

(*) P is statistically significant if ≤ 0.05

Table seven shows that there were statistical significant association between utilization of of full ANC package and pregnant women awareness of ANC services and the least number of ANC visits($p=0.03,0.02$)respectively.

IV. Discussion

The present study finding revealed low utilization of Ante Natal Care package. Ante Natal Care Package consists of number of ante natal care visits, tetanus immunization , iron and folic acid intake and time of first ante natal care visit.

The present study revealed that only one- fifth of the pregnant women received full Ante natal care package consisting of minimum eight antenatal visits, registration in the first trimester, minimum one tetanus toxoid immunization, IFA intake. This may be due to the high cost of ANC visits reported by the studied women . This study finding was in agreement with a descriptive study conducted by **Singh et al.(2014)** on 566 pregnant women in a rural area of Bareilly to assess utilization of antenatal care services who found that about one fifth the total pregnant females received full antenatal care[16].On the other hand, a nother study conducted by **Das et al.(2018)** to assess factors associated with utilization of antenatal care services among rural women in Telangana, India indicated that more than three- quarters of mothers had complete utilization of ANC[17]. This contradiction may be attributed to low awareness of the present study subjects compared to high awareness of **Das et al.(2018)** study[17].

The present study finding revealed that there was a statistical significant association between level of education of women and utilization of full ANC package.This may be contributed to better seeking and understanding of information regarding receiving ANC services.Similar finding was also observed in a descriptive study conducted by **Bhimani et al.(2016)** to assess utilization pattern of ANC services which revealed that the utilization of ANC services was better among educated women compared to illiterate women[18].Another supporting study conducted by **Ayele et al.(2014)** in Eastern Ethiopia to assess factors affecting utilization of maternal health care services which revealed that educated women utilized ANC services more than illiterate women[19]. On the other hand, a previous study conducted by **Murthy et al.(2016)** had found that maternal education didn't have statistically significant impact on ANC utilization [10].

Also the present study finding revealed that there was significant association between educational level of husbands and utilization of ANC. This finding is in agreement with **Thant et al.(2013)** who reported that women whose husbands with higher educational level utilized ANC service more than women whose husbands with lower educational level[20].Another supporting study conducted by **Adewuyi et al.(2018)** in Nigeria to investigate the prevalence and factors associated with under utilization of ANC services reported that women with un educated husband utilize ANC services less than women with educated husband[21] . On the other hand, across sectional study conducted by **Ekane et al. (2014)**. to assess the Content and Utilization of Antenatal Care Services in a rural Community in Cameroon, reported that there is no significant association between husband educational level and utilization of ANC services[22].

The present study finding approved that, utilization of Ante Natal Care package was associated significantly with family type. Women from the nuclear family utilized ANC services more than women from the extended families. This may be due to women from nuclear families have their own decision for receiving ANC. This findings is in line with a descriptive study conducted by **Kakati et al.(2016)** on 300 women in rural areas of Assam, India which revealed that utilization of antenatal care services were better by women from nuclear families as compared to women from extended families[23].Conversely,**Uppadhaya et al.(2017)** reported that mothers who related to extended families utilized ANC services better than women from nuclear families[24]. Also a descriptive study conducted by **Dahal (2013)** revealed that mothers from extended family has significantly higher utilization of ANC Services than mothers from nuclear family[25].

Also the present study finding revealed a significant association between monthly income and utilization of full ANC package. Women who had enough monthly income utilize full ANC package in compared to others with low income. This may be attributed to the fact that pregnant women with high family income can often afford to pay for health services and any associated travelling costs than those women with low family income. This finding is similar to the finding of **Abu Hashima et al. (2016)** who reported that monthly income affect ANC services utilization; women of higher income were two times more likely to utilize ANC as compared to the lower income ones[26].

The present study found a significant association between parity and ANC utilization; utilization of full ANC package had been noticed among nulliparaous women compared to multi parous women .This could be due to fear of nulliparous women to develop high risk complications during pregnancy. This result is in agreement with a descriptive study conducted by **Prustyet al. (2015)** in Cambodia to assess factors associated with utilization of antenatal care services which revealed that nulliparaous women utilize ANC services mor than multi paraous women[27]. Contradictly, another descriptive study conducted by **Basu et al.(2015)** on 380 pregnant women revealed that there is increase in the proportion of women obtaining ANC services with increasing parity[28]. Another descriptive study conducted by **Mulat et al.(2015)** on 930 women in North West Ethiopia to assess Ante natal care service utilization and its associated factors revealed that women who had one or more births utilized ANC services more than those didn't have any births[29].

The present study finding revealed that there was a reduction in the proportion of women who received full ANC with increasing in the number of living children but association is not statistically significant. on the other hand another descriptive study conducted by **Othman et al.(2017)** on 460 mothers in Sana'a city, Yemen to assess factors affecting utilization of ante natal care services which revealed that there was a statistically significant reduction in the proportion of women obtaining antenatal care services with increasing number of living children[30].

The present study revealed that previous maternal and fetal complication had an impact on the utilization of ANC services. Women who had previous abortion and fetal complications had received full ANC utilization .This could be due to the fact that mothers who had history of abortion, still birth have practical experience about the dangers associated with pregnancy and childbirth than those who did not and this could motivate them to receive ANC. This findings is similar to finding of **Edward (2011)**, who reported that Women who had previous pregnancy problems more likely to use the antenatal care content compared to who had normal pregnancies[31]. Also a descriptive study conducted by **Ayele et al.(2014)** in Eastern Ethiopia to assess factors affecting utilization of maternal health care services revealed that mothers who previously experienced abortion/still birth were better users of Ante Natal care services than others[19]. On the other hand, a study conducted in Mansoura city, Egypt by **Fadel (2014)** revealed that there was no statistical significance association between history of abortion or still birth and utilization of ANC[32].

Regarding to the cost of ANC visits, the present study found a significant association between the cost of ANC visits and utilization of full ANC, increasing the proportion of women who receive full ANC with inexpensive ANC visits. This finding is similar to the finding of a descriptive study conducted by **Ye et al. (2010)** in the Kham District, Laos to assess factors affecting antenatal care utilization which revealed that women who reported that the service was not expensive were more likely to receive it than women who reported high cost of services[33].

The present study also found a significant association between full ANC utilization and awareness of ANC services, this finding is similar to another descriptive study conducted by **Amentie et al. (2015)** on 536 women in west Ethiopia to assess utilization of ante natal care services and its influencing factors revealed that utilization of ANC services was higher among those who were knowledgeable on ANC service than mothers who didn't have knowledge about ANC services[34].

Besides, the present study finding revealed that there was significant association between utilization of ANC services and awareness about the least number of ANC visits. Women who were knowledgeable about the least number of ANC visit reported utilizing full ANC. This finding is similar to the finding of **Mulinge et al.(2017)** which revealed that women who were aware about the least number of ANC visits were three times more likely to have good utilization of ANC services[35].

V. Conclusion

Based on the present study findings, the following can be concluded:

The utilization pattern of Ante Natal Care services among rural women was low. The Majority of pregnant women didn't receive Full Ante Natal Care ; the most contributing factor for low utilization of Full Ante Natal Care Package was the decreased number of ANC visits. There were statistical significant associations between utilization of Full Ante Natal Care Package and women's and husband education, type of family, family incom, parity , history of complicated pregnancies , cost of follow up visits and awreness of ANC services .

VI.Recommendations

Based on the results of this study, the following were recommended:

- Proper utilization of mass media (radio and TV) for increasing public awareness about the importance of following Full Ante Natal Care Package.
- Increase awareness of health care professionals to inform pregnant women and family about the importance of receiving Full Ante Natal Care Package.
- More efforts are needed to promote the role of Public Health Care Services(PHC) in the provision of ANC and improve the quality of these services.
- Further research is needed to assess factors affecting the utilization of low number of ANC visits.
- More efforts are needed to assess the cost of ANC services.

Acknowledgements

The researchers acknowledged the health care provider working at MCH units, Nabarouh central hospital and obstetricians at private clinics for their participation in the study and all appreciation to the pregnant women for their cooperation.

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IOSR Journal of Nursing and Health Science (IOSR-JNHS) , vol. 7, no.5 , 2018, pp. 63-71