

## Research Article

# Utilization Pattern of Antenatal Care Services; an Example from South Egypt

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## Abstract

**Background:** Antenatal Care (ANC) is a category of preventive healthcare aiming to provide regular check-ups that allow doctors to prevent and treat potential health problems along the pregnancy.

**Objectives:** To describe ANC utilization pattern and identify its influencing factors among two groups of women from South Egypt.

**Methods:** This was a descriptive cross sectional comparative study. A convenient sample of 208 women who had a live birth within six months from South Egypt was taken; 100 and 108 among the attendants of an Urban Health Center (UHC) and a Rural Health Unit (RHU) respectively. An exit interview questionnaire was used.

**Results:** In both groups, ANC utilization pattern was generally satisfactory. Most of them had regular ANC visits. Two thirds started ANC visits early in the first trimester. The utilization of PHC for ANC was limited when compared with the private clinics. Study women perception regarding ANC was generally positive. Most of them were satisfied from ANC they received in their latest completed pregnancy. Their knowledge about contents of ANC visits was poor. **Conclusions & Recommendations:** In South Egypt, more efforts are needed to promote the role of PHC in ANC provision. ANC women need to be aware about the contents of the ANC services that should be provided for them. Further research is needed to develop tailored strategies to enhance ANC utilization in individual communities.

**Keywords:** Antenatal care; Utilization pattern; South Egypt

## Background

Antenatal Care (ANC) is a category of preventive healthcare aiming to provide regular check-ups that allow doctors or midwives to treat and prevent potential health problems along the pregnancy period while promoting healthy lifestyles that benefit both mother and child [1,2].

The ANC is one of the four pillars of safe motherhood recommended strategies together with family planning, essential obstetric care “clean/safe delivery” and emergency obstetric care [3]. Antenatal care from a skilled health professional is essential in order to monitor the pregnancy and reduce the risks for the mother and child during pregnancy and at delivery. To be most effective, it is recommended that all pregnant women should have at least four antenatal checkups during pregnancy, commencing as early as possible in the first trimester [4,5].

Interacting factors were found to shape ANC utilization pattern. Factors related to the socio demographic features of women include; ethnicity, residence, rural-urban, education, parity, age, marital status, occupation and family size. Structure on women's decisions on ANC utilization, women's position in the society, women's knowledge, attitudes, beliefs, and culture were also found to correlate with ANC utilization. Other determinants are related to health service characteristics “availability, accessibility, affordability” [6,7].

The ANC follow-up visits have become more prevalent in Egypt than ever before. The 2014 EDHS showed that the proportion of pregnant women who had at least four ANC visits reached about 83%. That proportion experienced a significant jump compared with that indicated in the 2008 EDHS, which reached 67%. Factors found to shape ANC utilization pattern included; mother age 35 and older, child's birth order, residence urban/ rural and the attained education [5].

The objectives of the study are to describe ANC utilization pattern and identify its influencing factors among two groups of women from South Egypt. Ultimate goal is enhanced quality ANC utilization.

## Methods

This is a descriptive cross sectional comparative study. It was conducted among the attendant women of two PHC facilities in Fayoum governorate, South Egypt, an Urban Health Centre (UHC) and a Rural Health Unit (RHU). A convenient sample of 208 women who had a live birth within six months was taken; 100 and 108 among the attendants of the UHC and the RHU respectively.

A systematic random technique was used to select the study women; every 5<sup>th</sup> woman after receiving the immunization service from the relevant PHC facility.

This interval was proportionate to the average number of women would the researcher able to interview per day, and the total number

**Table 1:** Socio- demographic characteristics of the study women.

Variables	The UHC		The RHU		P value
	No.=100	%	No.=108	%	
<b>Age in years</b>					
15-19	0	0	10	9.3	0.01*
20-34	87	87	90	84.2	
Age ≥ 35	13	13	8	6.5	
<b>Education level</b>					
Illiterate-read & write	11	11	40	37	0.001*
Primary-preparatory	6	6	14	13	
Secondary-high	83	83	54	50	
<b>Occupation</b>					
Not working	73	73	104	96.3	0.001*
Professional	16	16	3	2.8	
Others	11	11	1	0.9	
<b>Social level</b>					
Low	5	5	30	27.8	0.001*
Middle	52	52	71	65.7	
High	43	43	7	6.5	

\*P <0.05 is considered significant.

**Table 2:** Obstetric and medical history of the study women.

Variables	The UHC		The RHU		P value
	No.= 100	%	No.= 108	%	
<b>Parity</b>					
One	30	30	26	24.1	0.3
Two	32	32	33	30.5	
Three	21	21	32	29.6	
Four and more	17	17	17	15.8	
<b>Type of delivery in the latest completed pregnancy</b>					
Normal vaginal delivery	38	38	67	62	0.002*
Cesarean section	62	62	41	38	
<b>Obstetric history in previous pregnancies</b>					
No problem	48	48	40	37	0.13
With problems	22	22	42	38.9	
Abortion	16	16	28	25.9	
Stillbirth	2	2	5	4.7	
Low birth weight	1	1	3	2.7	
Pregnancy induced hypertension	3	3	6	5.5	

\*P <0.05 is considered significant.

of attendants women per day. The Latin square method was used to ensure that the data was collected along all the six working days of the week, with an average of 4-6 women to be interviewed /day. It needed from 10- 15 minutes with each interviewee woman to complete the exit questionnaire form.

A structured exit interview questionnaire was used to collect data from the study women. Most of the questions were pre-coded, close ended to ease data computerization. The questionnaire was

prepared and designed in a slang Arabic language, to ensure that all the interviewed women will be able to understand the questions and be stimulated exactly in the same way.

The questionnaire inquired about socio-demographic data, obstetric and medical history; women perception about importance of ANC, proper timing and frequency of ANC, content of ANC program. Other questions inquired about the utilization patter of ANC in the latest completed pregnancy.

A pilot study was conducted among 10 women; 5 from each PHC facility to test the questionnaire form regarding clarity, reliability and acceptance, measure the time needed for each interview to be completed, have a look at the actual field, observe the work flow, and identify possible field problems. Some amendments in the questionnaire form were made as a feedback from this pilot study.

### Data entry and statistical analysis

All the collected questionnaires were revised for completeness; logical consistency and translated to English to facilitate data manipulation. Pre coded data was entered to the statistical package of social science software program, version 16 (SPSS) to be statistically analyzed. Simple frequencies were used for data checking. Descriptive statistics were used for data summarization. The chi square test and prevalence odds ratio were used to assess probable association between categorical variables. The least statistical significance level used was at P ≤ 0.05.

## Results

This study was conducted on a group of women who had delivered a live birth within a maximum of four months. Their ages ranged from 20 to below 35 years old. In The RHU 9.3% of the study women were in the age group (15-19 years) compared to 0.0% in The UHC. On the other hand, women aging 35 years and elder in The UHC were almost double the women attending The RHU.

With regards to education, half of the study women attending the RHU were below the secondary school level of education compared to few number of the study women attending the UHC; 50.0% and 17.0% respectively. Most of the study women attending the RHU and the UHC were not working (96.3%; 73.0% respectively). On the other hand 16.0% of the study women in the UHC were professional compared to only 2.8% of the study women in the RHU. There was a significant statistical difference between the study women attending the UHC and the study women attending the RHU regarding education and occupation (P = 0.001).

The social level of the study women attending the UHC was generally higher than that of their counterparts attending the RHU with a significant statistical difference between the two groups (P= 0.001) as shown in Table 1.

Table 2 showed that the obstetric and medical history of the study women. Regarding parity, about one third of the study women attending the UHC; 30.0% and one quarter of the study women attending the RHU; 24.1% mentioned that the infant they are having at that time was the first viable live birth they have got.

More than one third of the study women attending the UHC and about two thirds of the women attending the RHU had normal

**Table 3:** Utilization pattern of ANC in the latest completed pregnancy.

Variables	The UHC		The RHU		P value
	n =100	%	n =108	%	
<b>Used ANC in the latest completed pregnancy</b>					
Yes	92	92	99	91.7	0.9
No	8	8	9	8.3	
Variables	n=92*	%	n=99*	%	P value
<b>Health facility used for ANC</b>					
Private clinic	74	80.5	54	54.5	0.002*
Both private & PHC	10	10.8	29	29.3	
PHC only	8	8.7	16	16.2	
<b>Time of initiation of ANC</b>					
1 <sup>st</sup> trimester	68	74	64	64.7	0.2
2 <sup>nd</sup> trimester	19	20.6	32	32.3	
3 <sup>rd</sup> trimester	5	5.4	3	3	
<b>Frequency of ANC visits</b>					
Less than four	8	8	16	16.2	0.4
Four	9	9.8	9	9.1	
Five and More	75	81.5	74	74.7	

\*P <0.05 is considered significant.

vaginal delivery (38.0 and 62.0% respectively). The UHC women had more than double the chance to have caesarean section if compared to women attending the RHU with a significant statistical difference between the study women regarding type of delivery (P= 0.002).

The ratio of the study women attending the UHC who claimed to have no obstetric problems in previous pregnancies to those who claimed to have was 2.1 compared to 0.95 in their counterparts attending the RHU. Abortion was the most prevailing obstetric problem with 16.0% of the study women attending the UHC compared to 25.9% of the study women attending the RHU.

About half of the study women attending the UHC and the RHU claimed that they didn't have any health problems in their latest completed pregnancy. Among those who suffered health problems, anemia was the most prevailing health problem.

Most of the study women in both the UHC and the RHU mentioned that they used ANC services in their latest completed pregnancy (92.0% in the UHC and 91.7% The RHU) with a different in type of health facilities as four fifths of the study women in the UHC and about half of the study women in the RHU used private clinics and only (8.7% &16.2%) respectively attended the PHC with significant statistical difference (p= 0.002). About one third of the study women in the RHU (29.3%) mentioned that they used both the PHC facility and the private clinics compared to only 10.8% of the study women in the UHC just for mere tetanus toxoid immunization in the PHC. As well as, the most attracting factors for utilizing the private clinics were; respect & care, patient centeredness, ensuring ample time for double way communication and privacy.

Regarding the time of initiation of ANC utilization, the majority of the study women in the UHC, 74.0% and 64.7% of study women in the RHU mentioned that they started ANC in the 1st trimester with five and more ANC visits (81.5% of the UHC and 74.7% of the RHU)

Table 3.

Most of the study women were recognized that ANC is an important and useful program for every pregnant woman in both health facilities. Few women 8.3% in the RHU noticed that it is useful only for complicated pregnancy with a statistical significant difference (P=0.006).

Regarding the proper time of ANC initiation, three fifth in the UHC mentioned that they begun their ANC immediately after missing menstruation and one fifth mentioned that they do not know the proper time to initiate ANC. While the RHU almost half of them early initiated the ANC and one quarter of the women don't know about proper time, with a statistical significant difference (P=0.007). Primi- para women attending The UHC were more than four times like to initiate ANC in the first trimester if compared with the multi-para and were more in The RHU about six times (Prevalence Odds Ratio= 4.3 & 5.9).

Almost half or more of the study women in both health facilities mentioned that the proper frequency is once per month; and only 15.0% in the UHC and 12.0% in the RHU mentioned four to five times as the proper ANC frequency.

On asking the study women if they recommend ANC to other pregnant women and will utilize ANC in their future pregnancies; more than 90% of the study women in both health facilities would recommend it to pregnant women. And about three quarters of the study women, mentioned that they will ANC in their future pregnancies. On the other hand almost 14.0% of the study women mentioned that they will not. Showed in Table 4.

About half the study women attending the UHC and the RHU mentioned that they encountered no difficulties in receiving the service 56.6% and 54.4% respectively. About one fifth the study women attending the UHC 20.6% complained about the long waiting time compared to 16.1% of the study women attending the RHU. On asking the study women if they were satisfied from the ANC services provided to them in their latest completed pregnancy, majority of them were satisfied; 85.8 and 93.0% in the UHC and the RHU respectively. There was no significant statistical difference between the UHC and the RHU regarding difficulties in receiving services and satisfaction with the services (P=0.3, 0.15) respectively.

## Discussion

This study was conducted among two groups of women attending UHC and RHU for immunizing their infants, within 4 months after delivery, with specific objectives were to describe the utilization pattern of ANC services, explore women perception about ANC services and identify factors affecting their utilization pattern of ANC services in their latest completed pregnancy.

This study revealed that most of the study women from both groups were covered by ANC services in their last completed pregnancy, and all by a doctor, with no significant statistical difference. This was inconsistent with that found by [8] who found significant difference in ANC utilization between urban and rural areas in Beni- Suef governorate. Alike findings were reached by a WHO report which stated that, 70.0% of women worldwide have at least one ANC visit with a skilled provider. In industrialized countries

**Table 4:** Study women general perception about ANC.

Variables	The UHC		The RHU		P value
	No. = 100	%	No. = 108	%	
<b>Women opinion about ANC</b>					
Useful	96	96	105	97.3	0.6
Not-useful	4	4	3	2.7	
<b>For whom ANC is important</b>					
Every pregnancy	96	96	91	84.3	0.006*
Complicated pregnancy	0	0	9	8.3	
Prime gravid	1	1	3	2.8	
Don't Know	1	3	5	4.6	
<b>Proper time to start ANC</b>					
Once I realized a missing menstruation	66	66	49	45.4	0.007*
1St trimester (any time within)	14	14	32	29.6	
Don't Know	20	20	27	25	
<b>Best health facility for ANC</b>					
Private clinic	68	68	65	60.2	0.5
PHC facilities	20	20	24	22.2	
Don't Know	12	12	19	17.6	
<b>Proper frequency of ANC</b>					
Four to five times	15	15	13	12	0.4
Once /month	45	45	59	54.6	
As recommended by doctor	20	20	15	13.9	
Don't Know	20	20	21	19.5	
<b>Recommend ANC to others</b>					
Yes	95	95	101	93.5	0.8
No	5	5	7	6.5	
<b>Will use ANC again in future pregnancies</b>					
Yes in normal pregnancy	79	79	77	71.3	0.2
Yes only if complicated pregnancy	7	7	16	14.8	
No, because she had experience	12	12	10	9.3	
No, because of difficulties	2	2	5	4.6	

\*P <0.05 is considered significant.

ANC coverage is extremely high with 98.0% of women having at least one ANC visit in contrast of developing countries; ANC utilization is around 68.0% [9].

Education was found to be significantly associated with utilization of maternal health services: 22.0% of women with no education receive ANC while 85.0% of women with at least secondary education do so. Wealth and income were also found to affect ANC services utilization; women of higher income were two times more likely to utilize ANC as compared to the lower income ones [6,10].

Regarding the proper time of registration for ANC (time of 1stANC visit) many of the study women in both groups realized it as within the first trimester. This is consistent with [11] who found that, women encounter an ANC provider for the first time in the first trimester in 61.0% of them and most women began ANC utilization within the first six months of pregnancy.

Despite the perceived difficulties by some of the study women, most of them in both groups were generally satisfied about the provided service; this is consistent with the results of [12] showed that overall, women were highly satisfied with the ANC they received; about 70.0% were satisfied with the number of ANC visits and more than 80.0% were satisfied with the time between visits. However, these finding should be interpreted with caution as research participants tend to respond favourably to questions about patient's perception [13-15].

This study showed that majority of the study women from both groups perceive the private clinic as the best facility that could be used for ANC. In addition, most of them actually utilized the private clinics for ANC in their last completed pregnancy. This is consistent with El-Zanaty and Ann, 2009 [11], but with a much wider gap; as ANC was obtained more than twice as often from a private provider as from a public sector provider (19.1 from public provider& 54.5% from

private provider). Multiple studies investigated this point [16,17,10].

The preference of the study women to utilize the private clinics for ANC is due to their perception about private clinics is a better source for ANC if compared to PHC. They mentioned that a high quality antenatal care is still a major concern to encourage them for ANC utilization. The most frequent factors were poor quality of care in the PHC, long waiting time, no privacy, lack of trust in the PHC doctors, they didn't know the providers in the PHC as each time they may encounter different physician that lead to poor communication. This is consistent with what was reached by [12] in a study conducted in Gambia that found that women attending public clinics had short time spent with lower levels of health care provider attention than women attending private clinics. The waiting time in the public clinics was higher than that in the private clinic [18].

## Conclusion & Recommendations

This study displayed that most of the study women utilized ANC services in their last completed pregnancy with a satisfactory utilization pattern regarding the initiation and frequency of ANC visits. However, one of the alarming findings in this study was the limited utilization ANC services at PHC comparing with the private sector.

This study recommended incorporating patient satisfaction in quality assurance activities besides other inputs needed for quality care provision to identify factors influence women opinion and their decision to choose this health facility or not. As well as, more efforts are needed to promote the role of PHC in ANC. This can be done through increase awareness about the ANC as well as informed about schedule of the visits, the content and the dangerous signs occurred for early seeking medical advice. This will encourage pregnant women to seek and accept ANC services.

## Administrative and Ethical Considerations

Administrative permissions were obtained prior to the study. Informed consent from all the study women was taken. Confidentiality on handling the database was guaranteed. This study was reviewed and approved by the Fayoum University-Faculty of Medicine (Research Ethical Committee).

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