

## Utilization of Maternal Health Care Services Among Women in EL-Sheikh Zaid City

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### Abstract

**Background:** Maternal health care encompasses the health of women in the childbearing years, including those in the pre-pregnancy period, those who are pregnant, and those who are caring for young children. The objective of the maternal care is prevention of maternal morbidity and mortality which can be achieved through health care for women before pregnancy, during pregnancy, during and after labor and inter pregnancy period. **Aim of work:** To measure the utilization of maternal health care services among a sample of Egyptian women in EL-Sheikh Zaid city. **Methodology:** Descriptive cross- sectional study was done on 385 women who came to receive service from the EL-Sheikh Zaid primary health care center and were pregnant within one year duration; those women were interviewed by a questionnaire asking about their socio-demographic data like the age, work and education, antenatal, natal and postnatal care services provided to them during the last pregnancy. **Results:** Most of mothers (81%) had adequate (four or more) antenatal care (ANC) visits. About (34.9%) of mothers had their ANC in the private sector. 92.5% of mothers delivered under supervision of skilled medical team and 45.7% had postpartum medical counseling. **Recommendations:** Health center should prepare a health education plan involving the messages to be given to mothers at each stage of pregnancy and properly implement this plan. Also, direct attention to the quality of care provided should be done in order to increase utilization.

**Key words:** Maternal health care, Utilization, Antenatal care, Natal care, Postnatal care.

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### Introduction

Maternal health encompasses the health of women in the childbearing years, including those in the pre-pregnancy period, those who are pregnant, and those who are caring for young children (1). The objective of maternal care is prevention of maternal morbidity and mortality which can be achieved through health care for women before pregnancy, during pregnancy, during

and after labor and inter pregnancy period (2). Millennium Development Goals (MDG) are relevant to maternal health care. Goal five 5 is to reduce maternal mortality by three-quarters between 1990 and 2015. This is the goal towards which the least progress has been made so far (3). The elements of maternal health services, including utilization of: ANC, skilled attendance

at delivery and post natal care are necessary to achieve improved birth outcomes measured by: reductions in neonatal mortality; and reductions in maternal mortality (4). The goal of ANC is to have healthy pregnancy, clean and safe delivery and to give birth to a full term healthy baby. The Component of ANC includes the following: registration and record keeping, periodic examination, including laboratory tests, risk detection and management, immunization, referral as needed, emotional and psychological support, health education, nutrition care, dental care, home visiting and social care (5). It is recognized that in addition to a range of interventions before, during and after pregnancy, ensuring that all births are attended by a skilled health worker is a key strategy to reduce maternal deaths (6). The proportion of births attended by a skilled health worker, was selected as a proxy measure to monitor the progress towards the MDG 5 target of reducing maternal mortality. There are sound medical reasons why governments should invest in skilled birth attendants, especially for the time of births. Most maternal and newborn deaths occur around the time of delivery or shortly thereafter. These deaths could be prevented or managed if women had access to a skilled attendant with necessary back-up and support. In fact, there is a reverse correlation between the percentage of births attended by skilled health personnel and maternal mortality ratio in countries of the Region. The days and weeks following childbirth – the postnatal period is a critical phase in the lives of mothers and newborn babies. Most maternal and infant deaths occur during this time. Yet, this is the most neglected period for the provision of quality care (7). Utilization of maternal health services is related to their availability and socio-economic, demographic and cultural

factors such as women's age, education, employment and autonomy (8,9). This study was conducted to measure the utilization of maternal health care services among a sample of Egyptian women in EL-Sheikh Zaid city.

## Subjects and Methods:

**Study setting:** EL-Shiekh Zaid primary health care center located in district 11-Neighboring 4 EL-Shiekh Zaid city, Giza. Serves about 150,000 residents. Any mother came to receive service from the center and was pregnant within one year duration and accepted to participate in the study was included. A sample of 385 women was calculated putting in consideration utilization of maternal care =50%±5% at 95% C.I (using Epi Info 7 program). **Study design:** Cross-sectional descriptive study. **Study tool:** Interviewer-administered questionnaire asking about socio-demographic data like the age, education, husband age, work, education and number of children, antenatal care services provided during the last pregnancy like number of visits, laboratory investigations and tetanus toxoid vaccination, As documented in Ministry Of Health and Population (MOHP) in physician guidelines woman is considered having adequate ANC if she had four or more antenatal care visits during her pregnancy (5). The questionnaire was asking also about details of natal and postnatal care services provided to the mother during the last labor. **Ethical consideration:** Informed consent was taken from participants after describing the objectives of the research and ensuring confidentiality of data and an approval was taken from the center

administration. **Data management:** Data were revised for any missing data, coded and introduced to personal computer, analysis was done using SPSS (Statistical Package for Social Sciences) program version 18. To describe the studied sample, quantitative data e.g. age were presented as minimum, maximum, mean and standard deviation. Qualitative data e.g. education level, were presented as count and percentage. Student t test was used to compare quantitative data between two groups and Chi-Square test was used to compare qualitative data between different groups. P value < 0.05 was considered significant

## Results:

This study was conducted on 385 women attending the health care center. Their age was ranging between 16 and 49 years with mean of  $27.39 \pm 6.02$  years. Their current socio-demographic data are shown in table 1 where 95.6% of them were married, 14.8% illiterate and 28.1% graduated from University, 40.9% of their husbands had secondary education and 73.7% work in a private work, most of women 60.3% were housewives and about 34.9% had monthly income ranged from 1000-2000 LE. Most of the studied women 65.5% were coming to the health center for vaccination. Regarding obstetric history of the studied women, number of previous pregnancies was ranging between 1 and 8 pregnancies, number of previous abortions was ranging between zero and four abortions and number of children was ranging between zero and six children. As

documented in Ministry Of Health and Population (MOHP) in physician guidelines woman is considered having adequate ANC if she had four or more ANC visits during her pregnancy (5). Number of women who had adequate ANC during their last pregnancy was 312 women representing about 81% of the studied women (figure 1). When asking women without history of ANC about the cause of un-utilization of services, (56.3%) reported that they didn't have health problems during their last pregnancy and the same percent reported that the cause is financial (figure 2). Description of ANC services provided for women showed that 61.9% of the studied women started ANC at their first trimester and 34.9% had their ANC at the PHC center, general clinical examination was done for 74.7% and medical history was taken from 70.2% of women during their first ANC visit. Tetanus toxoid vaccination was given for 79.8% of women and health education was given for 92.6% (table 2). Regarding health problems during last pregnancy, 52.9% of women had health problems. 31.5% of them had hypertension, (21.2%) had gestational diabetes, 26.7% had ante-partum hemorrhage and 41.8% had premature contractions. When comparing women with history of adequate ANC and those without regarding their socio-demographic data and obstetric history, there was a statistically significant difference between them regarding marital status where percentage of divorced or widow mothers was lower among women with history of ANC. Level of education of women and their husbands was significantly associated with history of antenatal care where

percentage of those with high education level was higher among women with ANC compared to the other group (p value < 0.01). Percentage of women and their husbands who had governmental or private work were higher among women with history of ANC and also monthly income (p value < 0.01) (table 3a). Age of mother, number of previous pregnancies and number of children were significantly higher among women without history of ANC (p value < 0.01) (table 3b). Natal care provided for the studied women is presented in table 4 which shows that 59.7% of women delivered at expected date, 92.5% delivered under supervision of skilled medical team, 63.1% had vaginal delivery and 31.4% had health problems during labor. The most frequent health problem was hemorrhage representing about 62.8% of health problems. When comparing items of natal care between women with history of adequate ANC and those without there was a statistically significant difference between them regarding time of labor only where the percentage of women delivered at expected date was higher among women with ANC (p value < 0.01) (table 5). Regarding postnatal period of the studied women, 45.7% had medical counseling during purperium, 50.1% had family planning counseling by healthcare provider, 88.8% used family planning methods, 67.7% breast fed their infants and 29.4% had health problems during purperium as wound infection and breast abscess (table 6). Regarding relation between history of adequate ANC and postnatal period, the percent of women with medical counseling during purperium was

significantly higher among women without history of ANC (p value < 0.05). Percentage of women who had health problems during purperium was significantly higher among women without history of ANC (p value < 0.01) (table 7).

### Discussion:

Most of the studied mothers in this study (81%) had history of adequate ANC (four or more ANC visits) during their last pregnancy. This is similar to the results of Egyptian Demographic Health Survey (EDHS) done during the year 2014 which showed that the percent of mothers who had adequate ANC during their last pregnancy was about (83%) (10). Another study done in Assuit to evaluate ANC services during the year 2006 and found that only 37.6% of the studied mothers had adequate ANC (11). This difference may be due to the social and cultural differences between Upper Egypt and new cities like Sheikh Zayed, higher education level of mothers, higher health awareness and also availability of health services in new cities than in Upper Egypt. Regarding the time of the first visit of ANC, (61.9%) of mothers in this study started ANC in their first trimester which is different from the results of previous studies like the study done in El Omranya, Egypt and found that more than half of mothers had their first ANC visit in their second trimester (12), a study done in north east Ethiopia found also that 73.2% of the women made their first ANC visit in their second trimester of pregnancy (13) and a third study done in India to measure utilization of maternal

healthcare services found that only (40.8%) of the studied mothers had their first ANC during first trimester (14). Social and cultural differences and difference in health awareness may be the cause of this difference in the time of start of ANC. In this study, about (79.8%) of studied mothers had tetanus toxoid vaccination during their last pregnancy. This is similar to results of EDHS 2014 which showed that (75.8%) of Egyptian mothers had received at least one tetanus toxoid dose during their last pregnancy (10), and lower than results of the study done in India to measure utilization of maternal healthcare services during the year 2013 which found that (93.2%) of the studied mothers had at least one dose of tetanus toxoid during their last pregnancy (14). Regarding health education messages during pregnancy, (92.6%) of mothers in this study had received health education messages during their ANC visits. In a study done in Beni-Suef governorate in Egypt to assess quality of ANC services, only (20.4%) of the attendant females had received health education messages during their ANC visits (15). Another study done in United Arab of Emirates to assess unmet needs for maternal health services found that only (27.1%) of mothers had received health education messages during their ANC (16). A third study done in Ethiopia found that only (26.2%) of mothers had a health education message (13). This difference between results of our study and the other three studies may be due to socioeconomic factors as the three studies were done in rural areas. Regarding health problems during pregnancy the present study found that

(52.9%) of the studied mothers suffered from health problems during their last pregnancy and the most common problem was premature contractions (41.8%). These results are different from that reported in a study done in Qatar to identify maternal complications and neonatal outcomes which found that the first two leading maternal complications are gestational diabetes (20.8%) and gestational hypertension (21.6%) (17). This difference may be due to the difference in life style factors between Egypt and Qatar. The present study showed that the two most important causes of unutilization of ANC services were financial causes and lack of health problems (56.3%) for each. This result is similar to results of the study done in India to identify determinants of maternal health care utilization which found that there is a positive correlation between household income and utilization of maternal health care (18). Also the study done in Ethiopia found that the primary reasons for not attending ANC during pregnancy to be that no illness had occurred during the recent pregnancy (63.2%) (13). Studies in many developing countries found that cost constraints were a barrier in seeking maternal health services (19,20,21). Regarding the place of delivery, the present study found that most women (92.5%) delivered at health facilities which is to some extent similar to results of EDHS 2014 which found that 87% of mothers delivered at health facilities (10). Frequency of caesarian section (CS) among mothers in the present study was (36.9%) which is similar to the study done at Al Kasr Al Aini Hospital which found that the

rate of CS increased from (38.8%) in 2008 to (41.1%) in 2012 (22). Another study done at Al Mansoura university hospital found that the rate of CS was (47.25%) (23). EDHS 2014 reported that the rate of CS was about (51.8%) among the studied mothers (10). The observed high rates of caesarean sections can be explained by the changes in obstetric practice and technology, caesarean section requested by the mother due to their fear from vaginal deliveries and labor pain. When comparing mothers with adequate ANC and mothers without ANC regarding socio-demographic factors, the percentage of divorced or widow mothers was lower among females with history of ANC and this may be attributed to absence of the husband which leads to increased burden of responsibilities on the mother and causes more financial problems. Most of mothers with history of ANC and their husbands were highly educated and had a higher monthly income than mothers without ANC. These results are similar to the results of the studies done in Philippine and Kenya which found that the higher the educational level and family income the higher the utilization of ANC services incomes (24,25). The present study showed that mothers with history of adequate ANC were significantly different from those without regarding their age and number of children (those with ANC were younger and had few number of children). Women pregnant with their first child are more cautious about their pregnancies. Older women on the other hand, tend to believe that maternal health care services are not necessary due to their experiences from previous

pregnancies and therefore have more confidence about pregnancy and childbirth and thus may give less importance obtaining ANC. These results are similar to results of the study done in hospital of Assuit university for evaluation of ANC services and women's perception which found that the younger women had more regular attendance to ANC than the older women and the majority of regular attended women (80%) was primigravida (11).

### **Conclusion:**

Most of studied mothers (81%) received adequate ANC during their last pregnancy, were received adequate ANC, (34.9%) of them had their ANC in the health center. (92.5%) of studied mothers delivered in health facilities under supervision of skilled health worker and (45.7%) had postpartum medical counseling.

### **Recommendations:**

Health center should prepare a health education plan indicating the messages to be given to mothers at each stage of pregnancy and properly implement this plan. Health education messages should stress on the importance and elements of ANC using posters and pamphlets to support verbal messages. More training is needed to ensure that providers of maternal health services comply with the clinical guidelines with direct attention to the quality of care provided in order to increase utilization.

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**Table 1: Description of socio-demographic characteristics and obstetric history of the studied women (total=385):**

<b>Socio-demographic characteristics:</b>		<b>N.</b>	<b>%</b>
<b>Marital status</b>	Married	368	95.6
	Divorced	11	2.9
	Widow	6	1.6
<b>Level of education</b>	Illiterate	57	14.8
	read and write or primary education	67	17.4
	secondary or diploma	130	33.8
	university graduate	108	28.1
	post graduate degree	23	6.0
<b>Husband's level of education</b>	Illiterate	10	2.6
	read and write or primary education	47	12.4
	secondary or diploma	155	40.9
	university graduate	130	34.3
	postgraduate degree	37	9.8
<b>Occupation</b>	governmental work	41	10.6
	private work	82	21.3
	seasonal work*	30	7.8
	Housewife	232	60.3
<b>Husband's occupation</b>	governmental work	37	9.7
	private work	280	73.7
	seasonal work*	52	13.7
	not working	11	2.9
<b>Monthly income</b>	<500 LE	39	10.2
	500-<1000 LE	102	26.6
	1000-2000 LE	134	34.9
	>2000 LE	109	28.4

\*Seasonal work (working only during certain seasons in the year)

**Table 2: Description of antenatal care provided for the studied women (N=312):**

<b>Antenatal care:</b>		<b>N.</b>	<b>%</b>
<b>Start of ANC</b>	first trimester	193	61.9
	second trimester	89	28.5
	third trimester	30	9.6
<b>Place of ANC</b>	PHC center	109	34.9
	general hospital	69	22.1
	specialized hospital	58	18.6
	private clinic	76	24.4
<b>Number of BP measuring times</b>	every visit	293	93.9
	Sometimes	14	4.5
	Never	5	1.6
<b>Number of BW measuring times</b>	every visit	244	78.2
	Sometimes	66	21.2
	Never	2	.6
<b>measuring sugar in blood and urine every visit</b>	Yes	218	69.9
	Sometimes	83	26.6
	No	11	3.5
<b>measuring hemoglobin in blood every visit</b>	Yes	224	71.8
	No	5	1.6
	Sometimes	83	26.6
<b>Ultrasound for ANC</b>	Yes	306	98.1
	No	6	1.9
<b>General clinical examination during first ANC visit</b>		233	74.7
<b>Asking about medical history during first ANC visit</b>		219	70.2
<b>TT vaccination</b>		249	79.8
<b>Health education during ANC</b>		289	92.6

**Table 3a: Relation between receiving adequate ANC and socio-demographic characteristics:**

		Adequate ANC				Chi Square test	P value
		No (N=73)		Yes (N=312)			
		N.	%	N.	%		
<b>Marital status</b>	Married	63	86.3	305	97.8	18.39	< 0.001*
	Divorced or widow	10	13.7	7	2.2		
<b>Level of education</b>	Illiterate	24	32.9	33	10.6	43.19	< 0.001*
	read and write / primary education	20	27.4	47	15.1		
	secondary / diploma	23	31.5	107	34.3		
	university graduate	6	8.2	102	32.7		
	post graduate degree	0	.0	23	7.4		
<b>Husband's level of education</b>	Illiterate	10	14.7	0	.0	75.92	< 0.001*
	read and write/ primary education	17	25.0	30	9.6		
	secondary or diploma	32	47.1	123	39.5		
	university graduate	9	13.2	121	38.9		
	postgraduate degree	0	.0	37	11.9		
<b>Occupation</b>	governmental work	1	1.4	40	12.8	11.96	< 0.001*
	private work	14	19.2	68	21.8		
	seasonal work	10	13.7	20	6.4		
	Housewife	48	65.8	184	59.0		
<b>Husband's occupation</b>	governmental work	5	7.4	32	10.3	56.02	< 0.001*
	private work	31	45.6	249	79.8		
	seasonal work	27	39.7	25	8.0		
	not working	5	7.4	6	1.9		
<b>Monthly income</b>	<500 LE	22	30.6	17	5.4	50.49	< 0.001*
	500-<1000 LE	25	34.7	77	24.7		
	1000-2000 LE	16	22.2	118	37.8		
	>2000 LE	9	12.5	100	32.1		

\*Statistically significant at (0.01) level

**Table 3b: Relation between receiving adequate ANC and socio-demographic characteristics (cont.):**

	Adequate ANC				Student t test	P value
	No (N=73)		Yes (N=312)			
	Mean	SD	Mean	SD		
Age of Mother (years)	29.15	6.67	26.98	5.79	2.80	0.01*
Number of previous pregnancies	3.85	1.82	2.70	1.40	5.05	< 0.001*
Number of previous abortions	.84	.94	.63	.91	1.74	0.08
number of children	3.03	1.44	2.07	1.12	5.32	< 0.001*

\*Statistically significant at (0.01) level

**Table 4: Description of natal care provided for the studied women:**

Natal care:		N.	%
Time of labor	At the expected date	230	59.7
	Before expected date	111	28.8
	After expected date	44	11.4
Place of labor	At home	29	7.5
	Private clinic	93	24.2
	Governmental hospital	186	48.3
	Private hospital	77	20.0
Mode of delivery	Vaginal	243	63.1
	CS	142	36.9
Health problems during labor	No	264	68.6
	Yes	121	31.4
Type of health problem	Hemorrhage	76	62.8
	Tears	29	24.0
	Uterine prolapsed	2	1.7
	Others	14	11.6

**Table 5: Relation between receiving adequate ANC and natal care:**

		Adequate ANC				Chi Square test	P value
		No (N=73)		Yes (N=312)			
		N.	%	N.	%		
<b>Time of labor</b>	at the expected date	32	43.8	198	63.5	10.63	0.01*
	before expected date	27	37.0	84	26.9		
	after expected date	14	19.2	30	9.6		
<b>place of labor</b>	at home	9	12.3	20	6.4	7.48	0.06
	private clinic	14	19.2	79	25.3		
	governmental hospital	41	56.2	145	46.5		
	private hospital	9	12.3	68	21.8		
<b>Mode of delivery</b>	Vaginal	44	60.3	199	63.8	0.31	0.58
	CS	29	39.7	113	36.2		
<b>Health problems during labor</b>	Yes	21	28.8	100	32.1	0.30	0.59
	No	52	71.2	212	67.9		

\*Significant at (0.01) level

**Table 6: History of postnatal care and description of postnatal period of the studied women:**

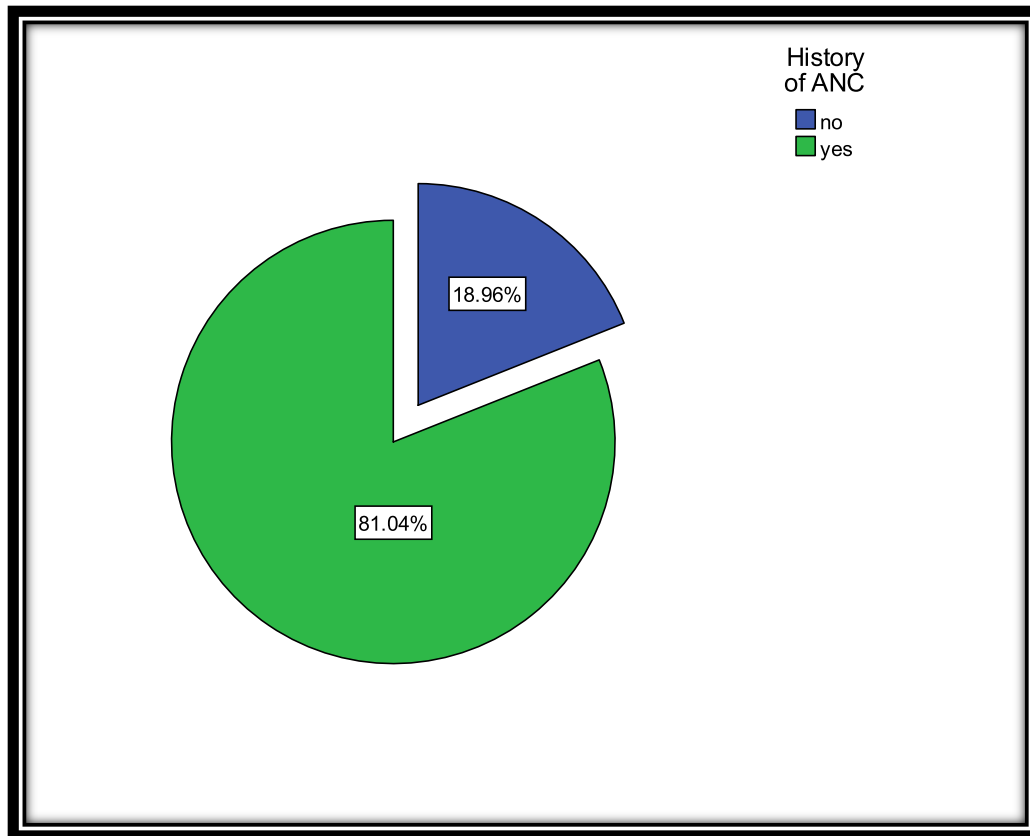
Postnatal care:		N.	%
<b>Medical counseling during purperium</b>	Yes	176	45.7
	No	209	54.3
<b>Family planning counseling by healthcare provider</b>	Yes	193	50.1
	No	192	49.9
<b>Use of family planning methods</b>	Yes	342	88.8
	No	43	11.2
<b>Type of lactation</b>	breast feeding	260	67.7
	bottle feeding	124	32.3
<b>Health problems during purperium</b>	Yes	113	29.4
	No	272	70.6

**Table 7: Relation between receiving adequate ANC and postnatal care:**

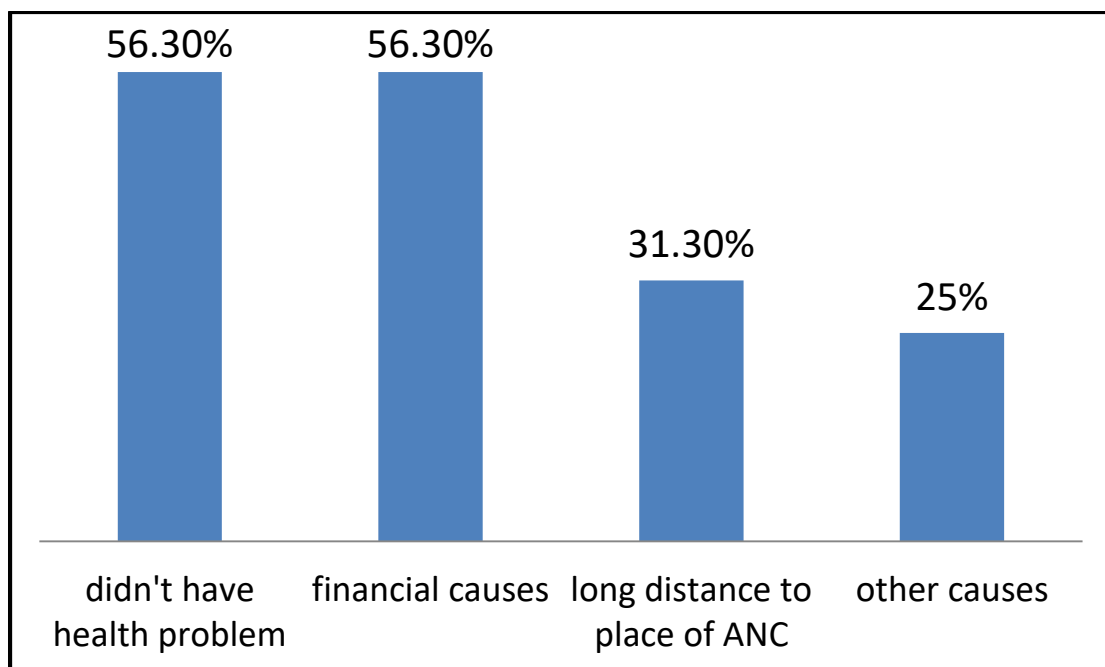
		Adequate ANC				Chi Square test	P value
		No (N=73)		Yes (N=312)			
		N.	%	N.	%		
<b>Medical counseling during purperium</b>	Yes	42	57.5	134	42.9	5.07	0.02*
	No	31	42.5	178	57.1		
<b>Family planning counseling by healthcare provider</b>	Yes	31	42.5	162	51.9	2.12	0.15
	No	42	57.5	150	48.1		
<b>Use of family planning methods</b>	Yes	61	83.6	281	90.1	2.52	.11
	No	12	16.4	31	9.9		
<b>Type of lactation</b>	breast feeding	51	70.8	209	67.0	0.40	0.53
	bottle feeding	21	29.2	103	33.0		
<b>Health problems during purperium</b>	Yes	32	43.8	81	26.0	9.12	< 0.01**
	No	41	56.2	231	74.0		

\*Significant at (0.05) level

\*\*Significant at (0.01) level



**Figure 1: History of adequate antenatal care during last pregnancy among the studied women**



**Figure 2: Causes of un-utilization of ANC among the studied women**