

Determinants of utilization of antenatal care services in Erbil city

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Abstract

Background and objective: Antenatal care is the care of the woman during pregnancy. The aim of this study was to determine the factors affecting the utilization of antenatal care among reproductive age group women (15-49 years) in Erbil city.

Methods: A cross-sectional study was conducted between April 1st, 2012 till April 1st, 2013 in Erbil city at the Birth and Death Certification Registration Center and the Maternity Teaching Hospital. Data from a sample of 500 women among reproductive age group (15-49 years) was collected by using a questionnaire through direct interview. Statistical package for the social sciences (version 18) was used for data entry and analysis.

Results: Antenatal care service utilization in the study area was 82.4%. From those who attended antenatal care service, 45.8% started antenatal care visit during the first trimester of pregnancy and 41% had less than four visits. Utilization of antenatal care services was significantly associated with high educational level, professional job, having least number of children, highly tetanus toxoid vaccine receivers and near distance to antenatal care services.

Conclusion: Nearly 49.5% of antenatal care user women did not receive adequate number of visits as recommended by the World Health Organization. Women's education and occupation, socioeconomic status, number of children, tetanus toxoid vaccine, far distance to ANC service are significantly associated with percentage of receiving antenatal care.

Keywords: Antenatal care, Pregnancy, Education, Occupation.

Introduction

Antenatal care (ANC) is the care that should begin soon after conception and continue throughout pregnancy. The primary aim of ANC is to achieve at the end of a pregnancy a healthy mother and a healthy baby.¹ It started out in the first half of the 20th century as a means to educate "ignorant" women with an emphasis on the welfare of the infant and child.² In the 1950s it was used as an instrument for screening, so that women at higher risk of complications could be identified.³ ANC started early in the UK as structure of visits defined by the British Ministry of Health in 1929 and it is still practiced.⁴ It is the complex of interventions that a pregnant

woman receives from organized health care services.⁵ It includes education, counseling, screening and treatment to monitor and to promote the well-being of the mother and fetus.⁶ ANC is a widely used strategy to improve the health of pregnant women and to encourage skilled care during childbirth and as a preventive obstetric health care program.^{7,8} WHO recommended the first visit in the first trimester (ideally before 12 weeks but no later than 16 weeks), and at 24–28 weeks, 32 weeks and 36 weeks.^{9,10} Each visit should include care that is appropriate to the woman's overall condition and stage of pregnancy.¹¹ ANC is more likely to be effective if women begin

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receiving care in the first trimester of pregnancy and continue to receive care throughout pregnancy.¹² It is efficient for decreasing unfavorable pregnancy outcome incidence.^{13,14} Women with poor ANC have a greater risk for adverse pregnancy outcome.¹⁵ factors that effect on ANC utilization could be the variations in the implementation of maternal health care program as well as differences in availability and accessibility between the states, maternal education, husband's education, availability, cost, household income, women's employment and media exposure and it is higher in urban than rural area.¹⁶⁻¹⁸ The predictors of the utilization of ANC services in most developing countries include socio-demographic factors, availability and access to the health facilities, the educational level of the women and their husbands, perceptions of women regarding ANC and their knowledge of the importance of ANC services.^{19,20} In Erbil about half of pregnant women have no ANC during pregnancy and they only visit the obstetrician when they have a problem or complication.²¹ Data available from DOH Erbil indicates that the ANC coverage rate was 45% in 2010. The aim of this study was to determine the factors affecting the utilization of ANC among reproductive age group women (15-49 years) in Erbil city.

Methods

A descriptive cross-sectional study was carried out at two places; the Birth and Death Certification Registration Center and the Maternity Teaching Hospital in Erbil city. The study extended from April 1st, 2012 to April 1st, 2013. A convenience type of sample was proposed to be 500. A closed-ended self administered questionnaire was designed by the researchers which included the following information: age, occupation, residency, education level of women and her husband, number of children, if the women receive ANC or not, reasons

for no ANC, number of visits, and the time of starting receiving ANC through trimester of gestation and socio-economic Status (SES), which was based on "eighteen score" criteria. Four scores were given to each woman and her husband education and two scores to crowding index. Crowding index was calculated by dividing the number of family members on the number of house rooms except kitchen and bathrooms.²² The index was divided into three groups, less than 1.5, between 1.5 and 2.9, and equal to and more than three. Possession of car was given two scores, type of housing was given three scores, and monthly family income was given three scores. Finally the SES of the women's families were divided in to three main categories; low status (\leq six scores), medium status (seven-to-twelve scores) and high status (thirteen-eighteen scores).²³ Information about accessibility to ANC services for all women who had or had not ANC was collected including the way of transportation to nearest ANC service, status of roads to nearest ANC service, cost of service, source of encouragement and source of information about ANC. The collected data were entered and analyzed using the statistical package for the social sciences (version 18). Analysis included two approaches of descriptive and analytic with calculation of frequencies, percentages, means, SD, Chi-square test of association and Fisher's exact test. A P value of ≤ 0.05 was considered as statistically significant.³

Results

Of 500 women, 412 (82.4%) had ANC and 88 (17.6%) did not receive ANC. Of 412 ANC user women, 55.6% had ANC in the first trimester, 42.47% in the second trimester and 1.94% in the third trimester. About 73.4% of women received tetanus toxoid vaccine as

shown in Table 1. About 40.8% of women had 1-3 visits to ANC, 29.6% had 4-6 visits and only 12% had ≥7 visits as shown in Table 2. There was a statistically significant association between occupation of women

and ANC visits (P<0.001), with 100% of women from professional occupation and non manual or semiskilled occupation had ANC as shown in Table 3.

Table 1: Frequency distribution of ANC visit of the total sample.

Variables	No.	%
ANC visit for previous pregnancy		
Yes	412	82.4
No	88	17.6
Reason for no ANC (non users n=88)		
		Out of 88
Too busy	17	19.32
Healthy, not necessary	44	50
Feel embarrassed	5	5.68
Live far away from ANC service	12	13.64
Pregnancy is ordinary issue	10	11.36
Time of 1st visit (total users n = 412)		
		Out of 412
1st trimester	229	55.6
2nd trimester	175	42.46
3rd trimester	8	1.94
Receive TT vaccine		
Yes	367	73.4
No	133	26.6

Table 2: Frequency distribution of number of visits of ANC.

Variables	No.	%
No visit	88	17.6
1-3 visits	204	40.8
4-6 visits	148	29.6
≥7 visits	60	12
Total	500	100

Table 3: Association of ANC visits with occupation of women.

Occupation	ANC received Total=412		ANC not received Total=88		Total	p
	no.	%	no.	%		
Professional occupation	29	100	0	0	29	<0.001*
Non manual or semi skilled occupation	33	100	0	0	33	
Students	34	94.4	2	5.6	36	
Housewives	316	78.6	86	21.4	402	

*Fisher's exact test

There was a statistically significant association between the educational level of women and their husbands and ANC visits ($P < 0.001$). The highest percentage (38.1%) of non receivers of ANC was among illiterate women and the highest percentage (100%) of ANC receivers was

among higher education level women as shown in Table 4. There was a statistically significant association between SES of women's family and ANC visits (P value < 0.001), with the high percentage (95.2%) of ANC receivers was among high SES as shown in Table 5.

Table 4: Association of ANC visit with formal of education of women and her husband.

Variable	ANC received Total=412		ANC not received Total=88		Total	χ^2	p
	No.	%	No.	%			
Year of formal education of women							
Illiterate(0year)	86	61.9	53	38.1	139	63.341	<0.001
Primary(1-6years)	152	86.4	24	13.6	176		
Intermediate(7-9years)	51	87.9	7	13.6	58		
Secondary(10-12years)	42	91.3	4	8.7	46		
Higher(≥ 13 years)	81	100	0	0.0	81		
Year of formal education of husband							
Illiterate(0year)	50	67.6	24	32.4	74	34.927	<0.001
Primary(1-6years)	180	84.1	34	15.9	214		
Intermediate(7-9years)	47	72.3	18	27.7	65		
Secondary(10-12years)	40	78.4	11	21.6	51		
Higher(≥ 13 years)	95	99.0	1	1.0	96		

Table 5: ANC visit with socioeconomic status (SES) of women' family.

Variable	ANC Received Total=412		ANC not received Total=88		Total	χ^2	P
	no.	%	no.	%			
Low SES	57	66.3	29	33.7	86	32.7	<0.001
Medium SES	215	80.5	52	19.5	267		
High SES	140	95.2	7	4.8	147		

There was statistically significant association between way of transportation and ANC visits ($P < 0.001$). There was no statistically significant association between status of roads, source of encouragement and source of information and ANC visits ($P = 0.106$, $P = 0.061$ and $P = 0.904$, respectively) as shown in Table 6.

Discussion

ANC is a preventive obstetric health care program aimed at optimizing maternal fetal outcome through regular monitoring of pregnancy.²⁴ The percentage of ANC users among all women who participated in this study was 82.4%. Of 412 ANC users, 55.6% had their first visit to ANC in the first trimesters. This percentage is higher than

that of another study from Diyala²⁵ which revealed that 47% of women had their first visits at first trimester, but it is lower than that reported in Benghazi²⁶ which revealed 73% of women had their first visits at or before 16 weeks of gestation. In the current study, 29.6% of women had 4-6 visits to ANC. This finding disagrees with that of the Multiple Indicator Cluster Survey (MICS) survey which reported that 56% of mothers had more than 4 visits.²⁷ This result is less than that reported in Diyala which revealed 37.5% of mothers had 4-6 visits to ANC.²⁵ The WHO recommends four ANC visits for women whose pregnancies are progressing normally, with the first visit in the first trimester (ideally before 12 weeks but no later than

Table 6: Association of ANC visit with accessibility to ANC services and social support.

Variable	ANC received (no.=412)		ANC not received (no.=88)		Total	p
	no.	%	no.	%		
Way of transportation						
Car	168	74.7	57	25.3	225	<0.001
Feet	244	88.7	31	11.3	275	
Status of roads						
Inconvenient	12	66.7	6	33.3	18	0.106
convenient	400	83	82	17	482	
Source of encouragement						
Friend	136	79.5	35	20.5	171	0.061
Husband	33	94.9	2	5.7	34	
Mother	56	90.3	6	9.7	63	
Health personnel	74	77.1	22	22.9	96	
Relatives	133	83.1	23	16.9	136	
Source of information						
Health personnel	389	82.2	84	17.8	473	0.904*
Friend	13	86.7	2	13.3	15	
Mass media	1	100	0	0.0	1	
Mother	7	77.8	2	22.2	9	
Husband	2	100	0	0.0	2	

*Fisher's exact test

16 weeks), and at 24–28 weeks, 32 weeks and 36 weeks.^{9,10} Women's occupation was significantly associated with ANC visits which revealed 100% from each professional occupation and non manual or semiskilled occupation had ANC. This result also agrees with that reported in Diyala,²⁵ and Vietnam.²⁸ This finding may be attributed to improved autonomy of working women in making their decisions regarding the household as well as their own and children's health. This study revealed that there was no significant association between ANC utilization and maternal age. Women from age group of ≤17 years were more likely utilizing ANC service than women from age group 38 years and older which represented about 92% and 82%, respectively. This finding is consistent with the findings of a previous study conducted in an urban squatter settlement of Karachi.²⁹ Women's education is an important determinant factor of ANC utilization. In this study a significant association was found between level of education of women and ANC visit as 100% of women with (≥13) years of formal education and 91.3% of women with 10-12 years of formal education had ANC. This result was slightly higher than that reported in an urban squatter settlement of Karachi,²⁹ which revealed 85% of mothers with secondary level of education receive ANC, while it agrees with that reported in Diyala,²⁵ and in Vietnam.²⁸ Education enhances the female decision making power and develop confidence to take decision regarding their own health as well as their children health. Another explanation may be that as education increases the awareness overall also increase regarding health and health care utilization and uptake of health care at proper time from proper place. The current study revealed that the use of ANC was higher (92.2%) among women with a high SES. This finding was similar to those of previous studies done in Turkey,³¹ and Pakistan,³² which revealed that SES play a very important role in the utilization of

ANC services and in encouraging pregnant women who lived near to the ANC health center had the highest rate of ANC visits. The current study revealed 89% of women attend PHCC by walking to receive ANC. This finding was similar to the previous study done in Kenya.³³

Conclusion

The utilization rate of ANC was 82.4%. Nearly 41% of women did not receive adequate number of visits as recommended by the World Health Organization. There was a significant association between receiving ANC and women's education, occupation, SES and distance to ANC.

Conflicts of interest

The authors report no conflicts of interest.

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