Original Article

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Barriers to Accessing Antenatal Care Services in Primary Health Care Centers in Rural Areas of Basrah

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ABSTRACT

Introduction: Antenatal care (ANC) includes preventive and curative care services delivered during pregnancy. The World Health Organization (WHO) suggests that pregnant women should receive at least four ANC visits. ANC is provided in Iraq in the public sector mainly in primary health care (PHC) centers with referral to higher care if required. Private sector contributes to ANC, both private clinics and private hospitals have outpatient services as well.

Objectives: This study aims to describe the ANC use among women attending PHC centers in Basrah, determine associations of ANC utilization rate with sociodemographic characteristics, and ascertain barriers to the utilization of ANC services at the PHC centers in Basrah**.**

Methods: This is a descriptive cross-sectional study carried out among 322 mothers (with children aged below two years) attending four PHC facilities in rural areas of Basrah. Data was collected through direct interview of the mothers by the investigator.

Results: The study found that 15.8% of the mothers in rural areas of Basrah made no ANC visits to the PHC centers, 44.8% had between one to three visits, and just over one third received the recommended four or more ANC visits (39.4%). The study found significant association of ANC services utilization in PHC centers with number of children, mother's occupation, family income and woman's desire for pregnancy ($p < 0.05$). The most reported barriers by mothers to availing ANC services included: preference of private medical care, difficult to leave elder children, no one accompany, laziness, ignorance, forgetfulness, lack of authorization by husband, distance to health center, health-related barrier and transportation barrier.

Conclusion: This study found that ANC services in PHC centers were underutilized. Intervention aimed at raising women's awareness of the significance of ANC services and improving utilization, especially in rural areas, is necessary.

Keywords: Barriers, Antenatal Care, Primary Health Care, Basrah

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INTRODUCTION

Antenatal care (ANC) includes preventive and curative care services delivered during pregnancy.[1] The World Health Organization (WHO) suggests that pregnant women should receive at least four ANC visits, comprising the identification of risk factors and provision of preventive and health promotion advice to encourage healthy lifestyles and treatment of medical conditions.[2] Some studies have reported that women who have few or inadequate visits and those who start ANC later than the first trimester have poorer pregnancy outcomes, such as low birth weight and pre-term birth.[3,4] Globally , approximately 64% of women attended four or more ANC visits in 2016. However, the attainments of the recommended ANC visits varied between and within countries; with low- and middle-income countries (LMICs) reporting lower percentages,[5] with less than half of all women in developing regions receiving early ANC in 2013. In contrast, the majority of women (an estimated 85%) in developed regions had an early ANC contact with a health provider.[6] Access to ANC is quite limited in most developing countries, and ANC use is often reported to be low,[7] in addition to the fact that about 94% of maternal deaths occur in developing countries and most of these are preventable.[8] ANC is provided in Iraq in the public sector mainly in primary health care (PHC) centers with referral to higher care if required. The private sector contributes to ANC, both private clinics and private hospitals outpatient services as well. According to the results of 2018 multiple indicator cluster survey (MICS), 67.9% of women aged 15–49 years who gave birth in the previous two years had 4+ visits by any provider.[9] A cross-sectional household survey conducted in 12 selected districts in Iraq in 2016 reported that more than half of mothers received ANC at least four times (58.3%) and 8.7% did not make any ANC visits.[10] Access barriers would be considered better indicators to utilization of health services than population per facility.[11] Recognized barriers include lack of roads, absence of convenient and affordable transportation, deficiency of essential equipment/ supplies,[12] social and cultural barriers including the habit of keeping pregnancy hidden, dependence on alternative antenatal practices, spouses or parents' decisions, and disinclination caused by rough attitude of health care workers.[13,14] ANC use can also be obstructed by a lack of knowledge about ANC and unawareness of health centers that provide ANC.[15,16] Additionally, several studies indicated that the distance to the PHC centers is one of the major barriers for pregnant women in rural areas.[17-20] In Basrah, little is known about these barriers and how they affect ANC utilization rates.

This study aims to:

- Describe ANC use among women attending PHC centers in Basrah;
- Determine associations of ANC utilization rate with sociodemographic characteristics;
- Determine barriers to the utilization of ANC services at the PHC centers in Basrah.

MATERIALS AND METHODS

The study design: This was a descriptive cross-sectional study carried out over a period of 2 months extending from the 1st of January 2020 to the 1st of March 2020.

Ethical consideration: The study was approved by the Basrah Directorate of Health.

Sample size and sampling method: The sample included 322 mothers (with children aged below two years) visiting 4 PHC facilities in rural areas of Basrah during the period of the study. A list of 134 PHC facilities in Basrah was obtained from the Department of General Health; they were divided into 40 urban and 94 rural. Four PHC facilities were selected purposively from rural areas (Shat El-Arab, Al- Hweer, Nehran, Al-Hussan Al- Basri). These PHC centers were situated in different locations in Basrah. These PHC centers operate ANC services five days per week (Sunday to Thursday), from 9.00 am. to 2.00 pm. Approximately 25–45 women of childbearing age visit these PHC clinics per day to access the PHC services, the first 15–20 mothers fulfilling the criteria of inclusion were included. Accordingly, from each of the 4 centers, 75–85 mothers participated in the study.

The questionnaire and data collection: The data were collected through face-to-face interview of the mothers by the investigator after obtaining verbal consent. A majority of the questions were drawn from published studies,[18-20] in addition to questions which were prepared by author. The questionnaire included three parts: (1) socio-demographic characteristics of the mothers (age, marital status, mother's education, mother's occupation, family income, time taken to reach a health center); (2) obstetric characteristics of the mothers (parity, history of previous abortion, unplanned pregnancy, number of ANC visits, trimester at 1st ANC presentation; (3) barriers experienced by mothers in utilization of ANC.

Data analysis: The data were analyzed using the statistical package for social sciences (SPSS) version 23. Chi square, Fisher's exact test and logistic regression analysis were used to assess the relationship between two categorical variables. A P-value of ≤ 0.05 was considered statistically significant.[21]

RESULTS

Socio-demographic and obstetric characteristics of study participants: Table 1, presents socio-demographic and obstetric characteristics of study participants. The age of the mothers ranged between 14–44 years, approximately half 56.5% of the participants were in the age group 20–29, and those who were below 20 years represented 13.7% of the study population. About 54.7% of the mothers had $\leq$ 6 years of schooling (15.2% were illiterate), while 31% had 7–12 years of education. Only 14.3% of the mothers had 13 or more years of education. 85.1% of the participants were housewives, only 5.9% were government employees and 5.9% were self-employed. About half of the families (50.9%) had a family income of less than IQD 500,000, about 42.6% of the families had an income between 500,000 and IQD1000,000. The majority of mothers (80.7%) need 30 minute or less to reach the PHC center from home. Overall, 44.1% of the participants had 1–2 children, about 38.5% had 3–4 children the remaining (17.4%) of the mothers had $\geq$ five children. Approximately a third (37.3%) of the mothers had history of previous abortion.

More than quarter of all participants (28.6%) reported that their pregnancy was unplanned. Of the 322 participants, 132 (48.7%) presented within the 1st trimester for their first ANC and 47.3% presented within the 2nd trimester for their first ANC visit. Only 39.4% of the mothers had four or more ANC visits according to the WHO recommendations.[2] Less than half of the participants (44.7%) had (1–3) ANC visits and 15.8% of the mothers had zero ANC visit during their last pregnancy.

Table 1. Socio-demographic and obstetric characteristics of study participants.

Variable	No.	%
Age (years)		
< 20	44	13.7
20 – 29	182	56.5
30-39	84	26.1
≥ 40	12	3.7
Marital		
Married	309	96
Others (separated, widow, divorced)	13	4
Mother's education (years)		
≤ 6	176	54.7
7-12	100	31
≥13	46	14.3
Mother's occupation		
House wife	274	85.1
Government employee	19	5.9
Self-employed	19	5.9
Others	10	3.1
Family income (IQD)		
< 500,000	164	50.9
500,000- <1000,000	137	42.6
1000,000- ≥2000,000	21	6.5
Time taken to reach a health facility from home (in min)		
≤ 30	260	80.7
> 30	57	17.7
DNK	5	1.6
Number of children		
1	68	21.1
2	74	23
3-4	124	38.5
≥ 5	56	17.4
History of previous abortion		
Yes	120	37.3
No	202	62.7
Unplanned pregnancy		
No	230	71.4
Yes	92	28.6
Trimester at 1st ANC presentation at PHC center [22]		
1st (0-12 weeks)	132	48.7
2nd (13-27 weeks)	128	47.3
3rd (28+ weeks)	11	4
Antenatal (ANC) visits at PHC level		
No ANC visits	51	15.8
ANC (1-3) visits	144	44.8
ANC (≥4) visits	127	39.4

Key: DNK- Do Not Know

Association of the frequency of antenatal care services with socio-demographic and obstetric characteristics of study participants: The present study found a significant association between mother's occupation (p=0.05), family income (p=0.001), number of children (p=0.000), unplanned pregnancy (p=0.031), and frequency of ANC visits. No significant association was found between the frequency of ANC visits and mother's age (p= 0.351), education (p=0.067), time taken to reach a PHC center from home (p=0.896), history of previous abortion (p=0.079). (Table 2).

Table 2. Association of the frequency of antenatal care services with socio-demographic and obstetric characteristics of study participants.

Variable	Antenatal care(ANC) visits						Total	
	No ANC visits		(1–3) visits		(≥ 4) visits			
Age (years)								
< 20	3	6.8	23	52.3	8	40.9	44	100
20–29	27	14.8	80	44.0	75	41.2	182	100
30–39	18	21.4	37	44.0	29	34.5	84	100
≥ 40	3	25.0	4	33.3	4	41.7	12	100
***Fisher's exact*=6.583**	***P* = 0.351**							
Mother's education (years)								
≤ 6	32	18.2	72	40.9	72	40.9	176	100
7–12	12	12.0	56	56.0	32	32.0	100	100
≥13	7	15.2	16	34.8	23	50.0	46	100
X^2**=8.785** ***df*=4**	***P* = 0.067**							
Mother's occupation								
House wife	42	15.3	118	43.1	114	41.6	274	100
Government employee	4	21.1	7	36.8	8	42.1	19	100
Self-employed	4	21.1	10	52.6	5	26.3	19	100
Others	1	10.0	9	90.0	0	0	10	100
***Fisher's exact*= 11.838**	***P* = 0.05**							
Family income (IQD)								
< 500,000	27	16.5	57	34.8	80	48.7	164	100
500,000- < 1000,000	19	13.9	74	54.0	44	32.1	137	100
1000,000->2000,000	5	26.3	13	61.9	3	14.3	21	100
X^2**= 17.752** ***df = 4***	***P* = 0.001**							
Time taken to reach a health facility from home (in min)								
≤ 30	43	16.5	113	43.5	104	40.0	260	100
> 30	8	14.0	28	49.2	21	36.8	57	100
DNK	0	0	3	60.0	2	40.0	5	100
***Fisher's exact*=1.248**	***P* = 0.896**							
Number of children								
1	4	5.9	30	44.1	34	50.0	68	100
2	9	12.2	29	39.2	36	48.6	74	100
3–4	19	15.3	60	48.4	45	36.3	124	100
≥ 5	19	33.9	25	44.7	12	21.4	56	100
X^2**=25.795** ***df*=6**	***P* = 0.000**							
History of previous abortion								
Yes	20	16.7	62	51.7	38	31.7	120	100
No	31	15.3	82	40.6	89	44.1	202	100
X^2**=5.078** ***df*=2**	***P* = 0.079**							
Unplanned pregnancy								
No	35	15.2	94	40.9	101	43.9	230	100
Yes	16	17.4	50	54.3	26	28.3	92	100
X^2 **= 6.947** ***df*=2**	***P*=0.031**							

In order to find the relative effect of various independent variables on the frequency of ANC visits a logistic regression analysis was carried out. The dependent variables are

ANC4+ achievers (mothers had ≥ 4 ANC visits), and non-achievers (mothers had<4 ANC visits). As a result ANC4+ achievers were significantly and independently associated with: mother's occupation, family income, number of children and history of previous abortion. No significant association was found with: age, mother's education, time taken to reach a health facility from home, and unplanned pregnancy. (Table 3).

Table 3. Logistic regression for the frequency of antenatal care services.

Independent variable	B	p-value	Exp(B)	95% CI of Exp(B)
Independent variables with significant association				
Mother's occupation	-.624	.008	.536	0.337-0.852
Family income	-.761	.001	.467	0.295-0.739
Number of children	-.538	.001	.584	0.428-0.797
History of previous abortion	.520	.048	0.481	1.005-2.816
Independent variables with no significant association				
Age	.289	.166	1.336	0.887-2.012
Mother's education (years)	.263	.193	1.301	0.875-1.935
Time taken to reach a health facility from home (in min)	1.301	.834	.942	0.538-1.649
Unplanned pregnancy	-.423	.141	.655	0.373-1.150

Barriers experienced by mothers to utilization of ANC: Table 4, shows that there were more barriers in accessing ANC services before arrival at the PHC center than at the PHC center. Barriers reported by mothers prior to getting to the facilities included: preference of private medical care (18.9%), difficult to leave elder children alone (15.8%), no one accompany (9.9%), unawareness (6.8%), lack of authorization by husband (4%), and distance to health center (4%). The barriers experienced at the facilities were: long waiting time (6.8%), lack of essential equipment/supplies (5.6%), unavailability of drugs (5.3%) and completed tetanus toxoid vaccination i.e., had received a total of five doses of tetanus toxoid in the past (4.3%).

Table 4. Barriers experienced by mothers to utilization of ANC.

Barrier	No.	%
Before arrival at the PHC center		
Preference of private medical care	61	18.9
Difficult to let elder children alone	51	15.8
No one can accompany	32	9.9
Unawareness	22	6.8
Lack of authorization by husband	13	4
Distance to health center	13	4
Health-related barrier	12	3.7
Transportation barrier(lack of means of transport, high transportation cost, bad state of roads)	10	3.1
Others	3	0.9
At the PHC center		
Long waiting time	22	6.8
Lack of essential equipment/supplies	18	5.6
Unavailability of drugs	17	5.3
Completed tetanus toxoid vaccination	14	4.3
Rough attitude of health care workers didn't know when to go)	2	0.6

DISCUSSION

The findings of this study indicated that 15.8% of mothers in the selected rural areas of Basrah had no ANC visits to the PHC centers, (44.2%) had between one to three visits, and just over one third received the recommended four or more ANC visits (39.4%). This is similar to the figure obtained from a community-based survey in Cambodia by Yasuoka et al.,[23] but much lower than those obtained from previous studies performed in Iraq, Rwanda and Ghana.[10,24,25] Despite the WHO recommendation for initiating ANC within the first trimester, a considerable proportion (51.3%) of our study population presented late. This finding is compatible with studies in South Africa and Ethiopia .[22,26] Our findings proved that there is no significant association between the mother's age and ANC utilization and that adolescent girls (15–19 years) account for more than 10% of births. Complications from pregnancy and childbirth are the leading cause of death among adolescent girls worldwide.[27] Our study found insignificant association between mother's education level and the ANC service utilization, which might have been due to the homogeneity of the populations in our study (the majority have less than 12 years of education). In contrast, previous studies,[17,19, 23] showed that higher maternal education is an important enabler of ANC utilization. Association between employment of mothers and ANC utilization was just significant, the rate of utilization was higher among employed mothers (government employee and self-employed) than housewives. This may be due to the fact that employment provides better access to knowledge and higher income; the same was found in Ethiopia by Berhe et al.[28] Contrary to past studies,[29, 30] travel time was not associated with ANC use in our study. The Iraqi ministry of health (MOH) that expanded ANC services to disadvantaged rural areas may have played a role in our finding the same finding as observed in India by Taneja et al.[31] Our study also observed a less frequent ANC visits among multigravida. This could mean the women were not adequately educated about the importance of ANC or they feel more confident after previous birth experiences,[32] and difficulty in finding someone to look after their children may also explain the same finding in other settings.[22] Although about a third of mothers have had history of previous abortion, no association was found between history of abortion and ANC service use which may refer to unawareness of the risk factors which is compatible with the results in Cambodia.[23] The relationship between family income and ANC service utilization was significant in the present study. These findings are consistent with previous studies conducted in Iraq,[10] India,[33] Pakistan.[34] The utilization of ANC services is influenced by a woman's desire for pregnancy in our study, this finding was also demonstrated in India,[33] where women who carry unplanned pregnancies had less ANC attendance. Although ANC is almost free in PHC centers in Iraq, 18.9% of the participants preferred private ANC services, the mentioned barriers at the PHC centers included: long waiting time, lack of essential equipment/supplies, unavailability of drugs, and the rough attitude of health care workers may have pushed pregnant women to seek

private ANC services which is consistent with a study conducted in India .[33] Difficulty to leave elder children was the second most mentioned barrier to ANC utilization in our study and was the most common barrier in South Africa.[22] Thus, understanding the daily lives of women in our communities is needed to better inform intervention to achieve ANC services utilization. Requiring a companion to attend ANC and lack of authorization by husband were mentioned by 13.9% of the mothers in our study which is compatible with other studies conducted in Nigeria, South Africa, India.[12,22,33] Distance to health center and transportation barrier were experienced by only (4%, 3.1%) of the mothers respectively, while studies in Nigeria, South Africa and Cambodia they were the most common difficulties with coming to the PHC center for ANC.[12, 22,23]

CONCLUSION

This study found that ANC services in PHC centers were underutilized. Intervention aimed at raising women's awareness reagrding the significance of ANC services and improving utilization, especially in rural areas, is necessary.

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