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Factors affecting utilization of antenatal care among pregnant women in Basra city

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Abstract

Antenatal care (ANC) is prenatal care that should start as soon as possible after conception and continuing throughout the pregnancy. The fundamental goal of ANC is to have a pregnant woman and her unborn child are both healthy. This study's objectives are to assess the prevalence the prenatal care service consumption pattern among pregnant women and to identify the variables influencing pregnant women's use of prenatal care services (age, age at marriage, education, occupation, and parity, planning pregnancy, type of family, perceive of quality ANC services by availability of doctors, analysis, treatment, ultrasound, and tetanus toxoid vaccine). The study found ANC utilization use rate (20%) is lower and needs to further improvement. There is significant relationship between respondents' education and consumption of ANC services with (p. value <0.05). There are significant relationship between mothers from autonomous families, presence of a doctor during ANC visits, availability of ultrasound services and consumption of ANC services (p. value <0.05). In this study others factors such as the mode of transportation, availability of analysis services, treatment services, and tetanus vaccine did not have a significant impact on ANC utilization.

Keyword: Antenatal care, pregnant women, prenatal care, utilization, services

Introduction

Antenatal care (ANC) is prenatal care that should start as soon as possible after conception and continuing throughout the pregnancy. The fundamental goal of ANC is to have a pregnant woman and her unborn child are both healthy. (Dhahir & Zangana, 2015).

ANC began in the United Kingdom in 1929 as a schedule of appointments outlined by the British Ministry of Health, and it is being used today. (Dhahir & Zangana, 2015)



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ANC is a widely utilized strategy to enhance pregnant women's health and promote skilled birthing care, as well as a preventative Program for obstetric health care. (von Both et al., 2006).

If pregnant women get care throughout the first trimester of their pregnancy and are healthy throughout, ANC is more likely to be successful. (Heaman et al., 2008).

Antenatal care usage encourages institutional delivery and It lowers both directly and indirectly the incidence of maternal morbidity and death. (Zelalem Ayele et al., 2014).

Antenatal care (ANC) services have a favorable influence on pregnancy since they allow for the identification of risk factors along with the early detection and care of pregnancy problems such as premature birth (Aziz Ali et al., 2018).

Screening for pregnancy disorders, assessing pregnancy risk, managing problems that may emerge during the prenatal period, offering information to the pregnant woman, and physically and mentally preparing for childbirth and motherhood can all help to make a good effect. (Aziz Ali et al., 2018).

The World Health Organization (WHO) states that not all prenatal care elements have an influence on mother and newborn health. In a WHO randomized experiment, an innovative approach to prenatal care was used with only a few examinations and tests (blood pressure measurement, testing of urine for bacteriuria and proteinuria, and blood tests to detect syphilis and severe anemia). Every visit is voluntary, although weight and height checks are routinely. (Bbaale, 2011).

A minimal level is four visits during the course of the pregnancy, has been suggested by the WHO Technical Working Group. The first appointment, which should be done before the end of the fourth month aims to identify risk factors and medical conditions that are best addressed early in pregnancy, diagnose and treat syphilis and anemia, monitor for risk factors, and start prophylaxis if necessary (e.g. for anemia and malaria). The subsequent appointments are planned for 24, 28, 32, and 36 weeks after the initial appointment. (Abosse et al., 2010).

In developing world, pregnant women who attended at least one prenatal appointment increased significantly, from 64% in the 1990s to 80% in 2008. (Fareed & Ismail, 2019).

According to the World Health Organization, in 2017, there were almost 810 female fatalities every day, with 295 000 occurring during pregnancy and childbirth every year, 94% of these fatalities occurred in locations with limited resources, and the majority of them might have been avoided with better health care. (Youssef et al., 2020).



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In 2016, the world health organization produced and released 39 guidelines linked to five interventions targeted to providing women with a healthy pregnancy experience including dietary modifications, maternal, and fetal screening, prevention methods, interventions for common physiological complaints, and health-care system interventions to promote prenatal care use and quality care.(Adedokun & Yaya, 2020)

Several aspects are discussed while evaluating use and pregnancy outcomes. Socioeconomic and cultural considerations, ease of access to a medical institution, and the care provided are the main factors influencing the use of maternal health services and the outcomes that arise from them. The socioeconomic/cultural aspects highlight the status of female in the personal and public worlds, which includes culture, education, money, and autonomy.(Kurniati et al., 2018).

The following factors contributed to pregnant women's lack of access to ANC: residing too far away from healthcare services and restricted transport. Furthermore, poverty is a significant barrier to gaining access to healthcare services.(Ye et al., 2010).

Antenatal care can (i) provide micronutrient supplements, hypertension medication, tetanus vaccination, and eclampsia prevention (ii) provide the opportunity for diagnosis and therapy of HIV to prevent mother-to-child transmission in the event that pregnant women are HIV positive (iii) provide the chance to obtain medicines and insecticide-treated repellents to prevent malaria.(Adedokun & Yaya, 2020).

Furthermore, the WHO has suggested updated ANC criteria, as well as various other adjustments to the FANC model. At least eight ANC visits should be made by a pregnant woman, starting with the first appointment at 12 weeks' gestational age (GA) and continuing with appointments with qualified medical professionals at 20, 26, 30, 34, 36, 38, and 40 weeks' GA.(Aziz Ali et al., 2020).

Prenatal care was provided to women in developed countries at a higher rate than in developing countries. Political, financial, operational, and socio-cultural obstacles to access, inequity, and limited coverage of health care in developing countries are among the difficulties.(Roosbeh et al., 2016).

The objective of this study:

1. To identify the prenatal care service consumption pattern among pregnant women in Basra city.
2. To identify the variables influencing pregnant usage of prenatal care services.



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We believe the findings will be helpful in developing interventions to increase women's access to quality prenatal care at primary healthcare facilities and lower maternal mortality, both of which have the potential to be scaled up for larger impact throughout the nation.

Identifying the factors that effect of maternal health interventions are used will help with the development of programs and policies that will encourage service use in the nation and lower the rate of maternal death.

Methodology of Study:

Study setting:

The study was conducted in Basra city / Iraq at five primary health care centers (Hay Al-Mohandessin center, Al-Qaim center, Al-Mutiha center, Aleashaar center, Albaradieia center).

All pregnant women that have one previous child and more attendant to those primary health care centers were the target group. The data collecting tool was a self-developed questionnaire separated into two parts that were related to the study's aims. The respondents were asked for their informed permission and the study's goal was explained to them.

Study time:

This study was conducted from November 2021 to October 2022.

Study design:

A descriptive cross-sectional design

Operational definitions:

ANC: is care provided to pregnant women that attended to primary health centers.

Women autonomy: refers to type of family means pregnant women live only with her husband and not others people to her help in health care.

Ethical consideration:

Following an explanation of the research's purpose, the Department of Public Health in Basra gave their formal consent for the project's implementation.

All of the ladies taking part in the study gave their written informed permission after being told of its goal.



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The participants received assurances on the privacy and confidentiality of the collected data.

The participants were made aware of their freedom to withdraw or decline participation at any time.

Results:

In Table 1, the study shows that the distribution of participants based on age shows that the largest percentage, constituting over half (53.6%), falls within the 15-24 age group. The second-largest age group is 25-34, representing 39.2% of the participants. The smallest percentage belongs to the 35 and older age group, accounting for just 7.2% of the total. Regarding age at marriage, the majority of participants (86%) got married between the ages of 15-24, while a much smaller percentage (13.2%) got married between 25-34. Only a very small proportion (0.8%) got married at age 35 and above. The parity distribution shows an almost equal split between primipara (49.2%) and multipara (50.8%), indicating that half of the participants had given birth multiple times. In terms of education, the majority (51.6%) have completed primary education, followed by 24.8% with secondary education, 9.6% who are illiterate, and 14% with a higher education degree. Lastly, the occupational distribution reveals that the vast majority of participants (92.8%) are unemployed, while only a small percentage (7.2%) are currently employed.

Table (1): The distribution of the participants according to socio-demographic characteristics

Socio-demographic characteristics		No.	Percent
Age	15-24	134	53.6%
	25-34	98	39.2%
	35 and more	18	7.2%
Age at marriage	15-24	215	86.0%
	25-34	33	13.2%
	35 and more	2	0.8%
Parity	Primipara	123	49.2%
	Multipara	127	50.8%
Education	Illiterate	24	9.6%
	Primary	129	51.6%
	Secondary	62	24.8%
	high education	35	14.0%



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Occupation	Employed	18	7.2%
	Unemployed	232	92.8%

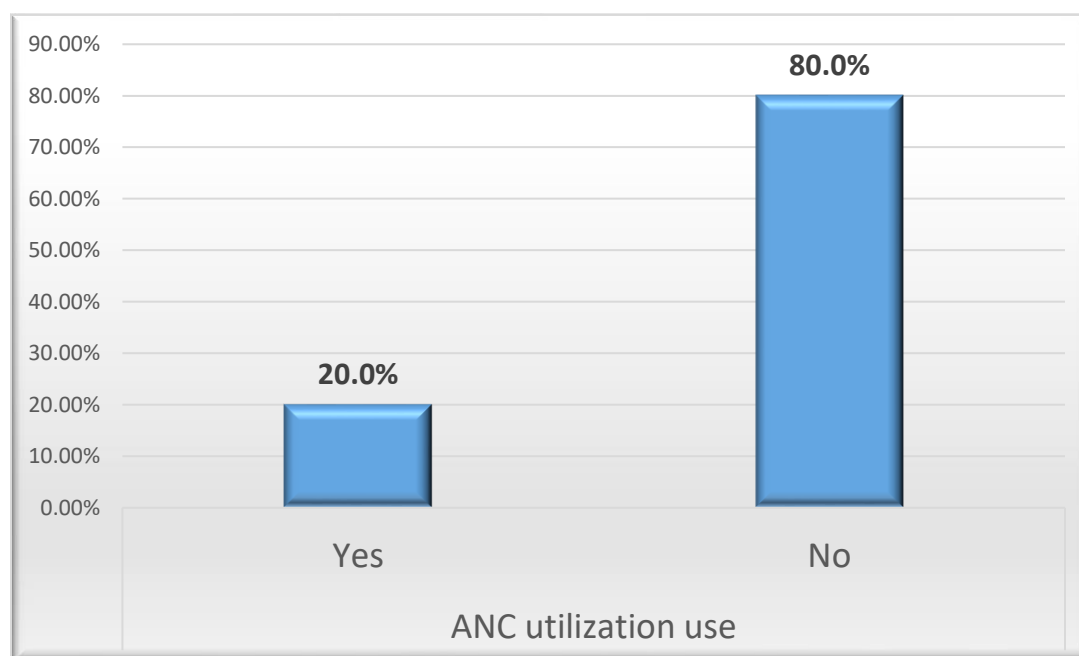


Figure (1) ANC utilization use among participant mothers

In this study, the distribution of participants based on the number of ANC (Antenatal Care) visits reveals that the majority of participants (50.4%) had made 2-4 visits, followed by 40% who had their first visit. A smaller proportion (9.6%) had more than 4 visits. In terms of the timing of ANC visits, the majority of participants (60%) had their visits during the second trimester (4-6 months), while a significant percentage (22.8%) had their visits during the third trimester (7-9 months). A smaller proportion (17.2%) had their visits during the first trimester (<3 months). Regarding planning pregnancy, the majority (97.6%) reported that their pregnancy was intended, while only a very small percentage (2.4%) indicated that their pregnancy was unwanted. The majority of participants (78.4%) belonged to extended/joint families, while a smaller proportion (21.6%) had an autonomous family structure. In terms of transportation to PHCs, the majority (67.6%) used vehicles, while a significant percentage (32.4%) traveled on foot. The majority of participants (78%) had a doctor present during their ANC visits, while a smaller proportion (22%) did not. The availability of analysis services was reported by the majority of participants (90.8%),



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while a smaller percentage (9.2%) did not have access to analysis. Similarly, a significant percentage (80%) did not have access to ultrasound services. As explained in table (2). Also the majority of participants (98.4%) had treatment services during their ANC visits, while much smaller proportion (1.6%) did not had. according to tetanus vaccine higher percentage (92%) show available in primary health care centers.

Table (2): The distribution of the participants according to ANC factors and services

		No.	Percent
Number of ANC (visits)	first visit	100	40.0%
	2-4 visit	126	50.4%
	more than 4 visit	24	9.6%
Timing of ANC visits	First trimester (<3months)	43	17.2%
	Second trimester (4-6months)	150	60.0%
	Third trimester (7-9months)	57	22.8%
Planning pregnancy	Unwanted	6	2.4%
	Intended	244	97.6%
Type of family	extended/joint families	196	78.4%
	Autonomy	54	21.6%
Transport way to PHCs	Walking	81	32.4%
	Vehicles	169	67.6%
Presence doctor	No	55	22.0%
	Yes	195	78.0%
Available of analysis	No	23	9.2%
	Yes	227	90.8%
Available of ultrasound	No	200	80.0%
	Yes	50	20.0%
Available of treatment	No	4	1.6%
	Yes	246	98.4%
Available of tetanus vaccine	No	20	8.0%
	Yes	230	92.0%

The results from Table (3) indicate that education is a significant socio-demographic factor influencing the use of antenatal care (ANC). Participants with higher levels of education showed



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a positive and statistically significant relationship with ANC utilization. This finding suggests that women who have received more education are more likely to seek and utilize ANC services. However, the coefficients for age, age at marriage, parity, and occupation were statistically insignificant, indicating that these factors have either no significant or minimal impact on ANC utilization. Overall, the study highlights the importance of education in promoting the uptake of ANC services and emphasizes the need for targeted interventions to improve ANC utilization among women with lower educational attainment.

Table (3): Assessment of socio-demographic characteristics influencing the use of antenatal care

Model		Unstandardized Coefficients		Standardized Coefficients	t	P. value
		B	Std. Error	Beta		
1	(Constant)	0.651	0.294		2.216	0.028
	Age	-0.020	0.047	-0.031	-0.415	0.679
	Age at marriage	0.125	0.075	0.118	1.665	0.097
	Parity	0.022	0.057	0.027	0.386	0.700
	Education	0.125	0.035	0.266	3.611	<0.0001
	Occupation	0.050	0.113	0.032	0.445	0.657

a. Dependent Variable: ANC utilization use (Yes)

Table (4) presents the results of the assessment of various factors influencing the use of antenatal care (ANC) as indicated by the unstandardized coefficients, standardized coefficients, t-values, and p-values. The dependent variable in this analysis is ANC utilization use (Yes). The findings reveal that certain factors have a significant influence on ANC utilization. Participants from autonomous families were more likely to utilize ANC services (p. value <0.05), while the intention or planning of a pregnancy did not significantly affect ANC utilization. The presence of a doctor during ANC visits positively impacted ANC utilization, as did the availability of ultrasound services. On the other hand, factors such as the mode of transportation, availability of analysis services, treatment services, and tetanus vaccine did not have a significant impact on ANC utilization. These findings provide valuable insights for policymakers and healthcare providers in



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identifying key factors that contribute to ANC utilization and developing targeted strategies to improve access and utilization of ANC services.

Table (4): Assessment of some factors influencing the use of antenatal care

Model		Unstandardized Coefficients		Standardized Coefficients	T	P. value
		B	Std. Error	Beta		
1	(Constant)	-0.134	0.482		-0.279	0.781
	Planning pregnancy	-0.010	0.144	-0.004	-0.070	0.944
	Type of family (being Autonomy)	0.153	0.054	0.158	2.840	0.005
	Transport way to PHCs	0.068	0.049	0.080	1.400	0.163
	Presence doctor (Being yes)	0.164	0.068	0.170	2.424	0.016
	Available of analysis (Being yes)	-0.021	0.164	-0.015	-0.128	0.898
	Available of ultrasound (Being yes)	0.438	0.058	0.438	7.556	<0.0001
	Available of treatment	0.141	0.186	0.044	0.762	0.447
	Available of tetanus vaccine (Being yes)	-0.003	0.170	-0.002	-0.016	0.987

a. Dependent Variable: ANC utilization use (Yes).

Discussion:

An important goal of ANC is to improve the result for both the mother and the fetus by routine pregnancy monitoring (Dhahir & Zangana, 2015).

The aims of this study are to identify the prenatal care service consumption pattern among pregnant women and to identify the variables influencing pregnant women's use of prenatal care services.

In this study the utilization rate of the ANC is low (20%) this may be due to needs to increasing medical guidance on tetanus vaccine and prenatal care, as well as increase need to health awareness



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and education about health of pregnant women and their children, this study not agree with study in Mosul showed 84% of studied women use antenatal care (Abdulla & Ahmad, 2020).

In this study, antenatal care (ANC) utilization is significantly influenced by education as a socio-demographic variable. Participants' levels of education had a positive and statistically significant link with their use of ANC. This result implies that educated women are more likely to seek out and use ANC services. This result similar in other research shown that giving women access to formal education improves their ability to comprehend their right to health and to make informed health-related decisions.(Achia & Mageto, 2015).

In this study there was no significant association between and maternal age, age at marriage, occupation and parity and ANC utilization, whereas another study showed significant association between occupation and antenatal care utilization (Fareed & Ismail, 2019).

According to planning pregnancy our study did not significantly affect ANC utilization and not agree with study in Ethiopia revealed that women with planned pregnancies used ANC services at health care facilities more frequently than women with unexpected pregnancies. (Abosse et al., 2010).

In this study the participants from autonomous families were more likely to utilize ANC services this may be due to the availability of time and not had any obstacle that prevent from visit health care centers during pregnancy and this autonomous may be link in making decisions of mothers about their own and their children's health this agree with study in Ethiopia. (Tarekegn et al.,2014).

Also our study showed transport way to PHCs no obstacles to antenatal care using this due to the availability of transportation way to health care centers in more places.

According to Perceive of quality ANC services there is positive significant association between presence of a doctor during ANC visits and ANC utilization, also availability of ultrasound in health centers related with ANC utilization by mothers and this may due to availability of ultrasound in the main health centers this service the pregnant women because need to ultrasound to check fetal position and movement very important during pregnancy.

Conclusion:

1. ANC utilization use rate (20%) is lower and needs to further improvement.



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2. There is significant relationship between respondents' education and consumption of ANC services with (p. value <0.05).
3. There are significant relationship between mothers from autonomous families, presence of a doctor during ANC visits, availability of ultrasound services and consumption of ANC services (p. value <0.05).
4. In this study others factors such as the mode of transportation, availability of analysis services, treatment services, and tetanus vaccine did not have a significant impact on ANC utilization

Recommendation:

1. The mothers should offer ANC services, such as home care visits and mobile health care for rural areas or those who are hard to reach.
2. Health education campaigns should be launched to increase women's knowledge of ANC.
3. Investigate problems that can limit the ability of the healthcare system to provide high-quality prenatal care.

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