CAHIERS MAGELLANES-NS
Volume 06 Issue 2
2024

ISSN:1624-1940
http://magellanes.com/

KNOWLEDGE AND AWARENESS LEVEL OF PREGNANT WOMEN TOWARDS THE IMPORTANCE OF ANTENATAL CARE, IN KSA

Ilham Almousa[1], Humaira Zareen[1], Fatimah Alsaleh*[2], Lama Alsaadi[3], Ahmed Alsulaimani[4], Nada Almaslamani[5], Afnan Bakhet[5], Raghad Alali[5], Reem Alnakhli[6], Kinan Aljohani[5], Khames T. Alzahrani[7]

[1]Assistant professor, KFU, Medical college, OB/GYN department, Alahssa, Saudi Arabia.
[2]Medical student, King Faisal University, Alahssa, Saudi Arabia.
[3]Medical student, Ibn Sina National College, Jeddah, Saudi Arabia.
[4]General practitioner, Ibn Sina National College, Jeddah, Saudi Arabia.
[5]Medical student, Tabuk University, Tabuk, Saudi Arabia.
[6]Medical intern, King Abdulaziz University, Jeddah, Saudi Arabia.
[7]BDS, PGD in Endo, Saudi Board of Endodontic SR, King Faisal Specialist Hospital & Research Centre, Riyadh, Saudi Arabia.

***Corresponding author**: Fatimah Alsaleh; **Email**: fafort2468fa@gmail.com

Abstract

Background: Antenatal care (ANC), according to the World Health Organization, is a general term for services offered to pregnant mothers by qualified birth attendants, The application of ANC depends on personal behavior that shapes knowledge and attitude. Prenatal clinics offer a range of treatments, including risk detection, classification, treatment, and delivery. Therefore, this study intends to evaluate pregnant women's knowledge and awareness of the value of antenatal care in Saudi Arabia.
Methodology: A cross-sectional study was conducted with the use questionnaire as a tool to survey data. All pregnant women who participated in KSA with 18 age and over included in the study, The sample size was estimated by using the Qualtrics calculator with a confidence level of 95%; the minimum sample size was 384. The computer's "Microsoft Office Excel Software" (2021) program for Windows was used to input data. Then, to perform statistical analysis, data transmitted to the SPSS application, version 20 (IBM SPSS Statistics for Windows, Version 20.0; Armonk, NY: IBM Corp.).
Results: The total sample size was 447 with most participants were aged between 25 to 45 years. As regard awareness level of pregnant women towards the importance of antenatal care, there were 63.5% of the studied participants, exhibited a low level of awareness, while only 27.3% demonstrated a high level of awareness. The remaining 9.2% revealed moderate awareness. Moreover, knowledge score among our participants revealed that 55.9% of them having a high level of knowledge, 33.8% possessing a moderate level of knowledge, and 10.3% exhibiting a low level of knowledge on the subject.
Conclusion: In our study, the majority of the pregnant women had high level of knowledge about the importance of antenatal care. However, the awareness level in some aspects was low. The level of overall knowledge of the respondents about ANC had a significant positive relation to their age, occupation and residence. Thus, health professionals should advocate in increasing community awareness on antenatal care and the possible complications during delivery to decrease the preventable maternal deaths. As the WHO recommendation, starting antenatal care as early as possible in the first trimester and having regular visits to about eight times should be advocated.

Keywords: Antenatal care, Pregnancy, KSA, Knowledge, Awareness.

ISSN:1624-1940
http://magellanes.com/

Introduction:

Antenatal care (ANC) is an umbrella term for services offered to pregnant women by qualified birth attendants, according to the World Health Organization [1]. The ANC visit serves as a gauge for pregnant women's access to ANC [2]. The use of ANC depends on individual behavior that shapes knowledge and attitude [2]. Prenatal clinics offer services like risk identification, classification, treatment, and delivery [3]. Knowledge refers to a pregnant woman's components, such as recording her pregnancy, recognizing pregnancy danger symptoms, taking prophylactic iron and folic acid supplements, and adjusting family planning techniques [4].

Initiating ANC later raises the cost of prenatal care overall and can result in worse outcomes like low birth weight and preterm delivery [5].

Over 500,000 women per year lose their lives to conditions related to pregnancy and delivery each year, with almost 90% of maternal fatalities occurring in underdeveloped nations [6]. It has been demonstrated that if the affected woman had timely access to the necessary maternity and basic health-care services, around 80% of maternal deaths might be avoided [7]. Still, antenatal care visits in low-income nations are fairly low (24%) compared to 81.9% in developed countries [8].

Hospital-based research was conducted in India in 2023 found Most pregnant women have good knowledge and habits with supportive of ANC. There was a substantial positive correlation between the respondents' prenatal practices and their overall awareness of ANC. 95.25 percent of deliveries happened in governmental institutions. Despite having high knowledge and attitudes about ANC, the practice of ANC was not widespread in the research region. Therefore, exploratory investigations are needed for certain intervention programs that must be created and carried out to enhance ANC habits [9]. IN 2022 Study conducted in Ghana revealed that 79.0% of participants reported having a thorough awareness of prenatal care. Conclusion To effectively inform women of reproductive age about the value of adequate ANC attendance in increasing health and well-being, more efforts are required, especially among Ghanaian women [10].

Pregnant women in the rural area of Lahore in 2018 received antenatal care that was related to their knowledge and education of ANC. Within the study, 64.7% of expectant women gave a positive response to a question on their understanding of prenatal care. the attitude has been shown to be positive somewhere, therefore 61% of individuals showed prenatal care-friendly behaviors [11].

The experimental groups in this study revealed an increase in mean values from 71.08 before intervention to 93.33 after intervention, indicating that HEI had a beneficial effect on pregnant women's awareness of and desire to use antenatal care facilities in the Edu LGA [12].

To enhance awareness among pregnant women in Saudi Arabia of the importance of periodic pregnancy examinations and their role in preventing risks that may affect the lives of the mother and fetus. The previous researches don't talk about the reason most woman leave ANC. This study aims to assess knowledge and awareness levels of the importance of Antenatal care among pregnant women in Saudi Arabia.

Materials and Methods:

Study design:

This study was a cross-sectional questionnaire survey of data from pregnant women who participate in KSA and the study between 2018 and 2024. The study's population consisted of Saudi pregnant women (aged 18 and over) participants were recruited in August 2023 – May 2024 from people receiving the questionnaire.

ISSN:1624-1940
http://magellanes.com/

Inclusion and Exclusion Criteria:
This study included all pregnant Saudi women 18 years old and over who could provide informed consent to participate in our study. Pregnant woman younger than 18 years old, non-Saudi pregnant woman, and health field student was excluded.

Sample size:
By using, Qualtrics calculates the minimum sample size was 384. The sample size was approximately calculated with a confidence level of 95%.
By using the following formula:
n= P (1-P) * Zα 2/ d 2 confidence level of 95%.
n= (1.96)2 X 0.50 X 0.50/ (0.05) 2 = 384.
N: sample size
Z: confidence level (1- a) = 1.96
P: estimated knowledge
Q: (1 – 0.50) = 0.50
D: maximum acceptable error = 0.05

Method for data collection and instrument (Data collection Technique and tools):
Data collection was done in the form of the participant's responses to the questions. to assess pregnant women's awareness levels regarding antenatal care. The questionnaire Our study included a questionnaire that was derived from [3,13]. The questionnaire included demographic features such as age, Nationality, educational level, Occupation, Reproductive history, Marital Status, Monthly income and Residence region. The participants were asked about Booking visits, one of the most important screenings performed during pregnancy, Concerning the changes that take place during the first and third trimesters of pregnancy. The participants' knowledge of medications, dietary supplements, caffeine, weight gain, and stress during pregnancy, as well as the significance of follow-up care for expectant mothers, was evaluated.

Scoring system:
The overall scoring was twenty, 6 statements were used to assess awareness level, and 15 statements for knowledge level. Awareness score: 6 statements for each one 1 point, if the answer was yes giving 1 score, if the answer was no give 0.
The scoring system was divided into; a high level of awareness (5-6), moderate level (4), and low level of awareness (0-3). knowledge level: 14 statements for each correct answer 1 point and 0 points for incorrect answer or don’t know.
The scoring system was divided to three category: high level of knowledge (11-14), moderate level of knowledge (9-10), low level of knowledge (0-8).

Analyzes and entry method:
The computer's "Microsoft Office Excel Software" (2021) program for Windows was used to input data. Then, to perform statistical analysis, data transmitted to the SPSS application, version 20 (IBM SPSS Statistics for Windows, Version 20.0; Armonk, NY: IBM Corp.).

ISSN:1624-1940
http://magellanes.com/

Results:

Table (1) displays various demographic parameters of a group of people. The table outlines various parameters such as age, nationality, marital status, education level, reproductive history, monthly income in SAR, occupation, and region of residence. It is observed that most participants were aged between 25 to 45 years, with Saudi nationals comprising a significant proportion of the sample. Additionally, a large percentage of participants were married and held a bachelor's degree as their highest level of education. The distribution of participants across different categories of reproductive history, monthly income, occupation, and region of residence also offers valuable insights into the demographic composition of the study population.

Table (1): Sociodemographic characteristics of participants (n=447)

Parameter		***No.***	***Percent (%)***
Age	18 to 24	74	16.6
	25 to 35	119	26.6
	36 to 45	168	37.6
	more than 45	86	19.2
Nationality	Saudi	431	96.4
	Non-Saudi	16	3.6
Marital status	Single	2	.4
	Married	421	94.2
	Divorced	12	2.7
	Widow	12	2.7
Education level	Elementary	4	.9
	Intermediate	12	2.7
	High school	55	12.3
	Diploma	74	16.6
	Bachelor's degree	274	61.3
	Post-graduate	27	6.0
	None	1	.2
Reproductive history	Primigravida	120	26.8
	2	157	35.1
	4-3	52	11.6
	More than 5	118	26.4
Monthly income in SAR	less than 5000 SAR	111	24.8
	5000 - 10000 SAR	160	35.8
	11000 - 15000 SAR	122	27.3
	More than 15000 SAR	54	12.1
Occupation	Employee in the government sector	211	47.2
	Employee in the private sector	22	4.9
	Free business	14	3.1
	Housewife	16	3.6
	Student	42	9.4
	Unemployed	125	28.0

ISSN:1624-1940
http://magellanes.com/

	Other	17	3.8
Region of residence	Northern region	155	34.7
	Southern region	3	.7
	Middle region	18	4.0
	Eastern region	46	10.3
	Western region	225	50.3

Table (2) reveals several key findings. Firstly, regarding the practice of PCV check during pregnancy, it is notable that 63.1% of participants responded affirmatively, indicating a moderate level of adherence to this aspect of antenatal care. Conversely, 25.5% answered in the negative, suggesting a significant proportion may not be engaging in this recommended practice. Additionally, 11.4% indicated uncertainty, highlighting a potential lack of awareness or information on the topic. Moving on to blood sugar screening, a substantially higher percentage of 87.9% reported having undergone this test, indicating a relatively strong awareness and compliance rate in this area. However, it is concerning that 12.1% did not undergo blood sugar screening, which could pose risks to both maternal and fetal health if undetected. Furthermore, the data reveals disparities in the rates of screening for infectious diseases such as HIV, hepatitis B, hepatitis C, and syphilis during pregnancy, with varying levels of compliance observed across different parameters. Notably, the relatively low rates of screening for certain infections such as syphilis (24.4%) and HIV (31.8%) raise concerns about missed opportunities for early detection and intervention.

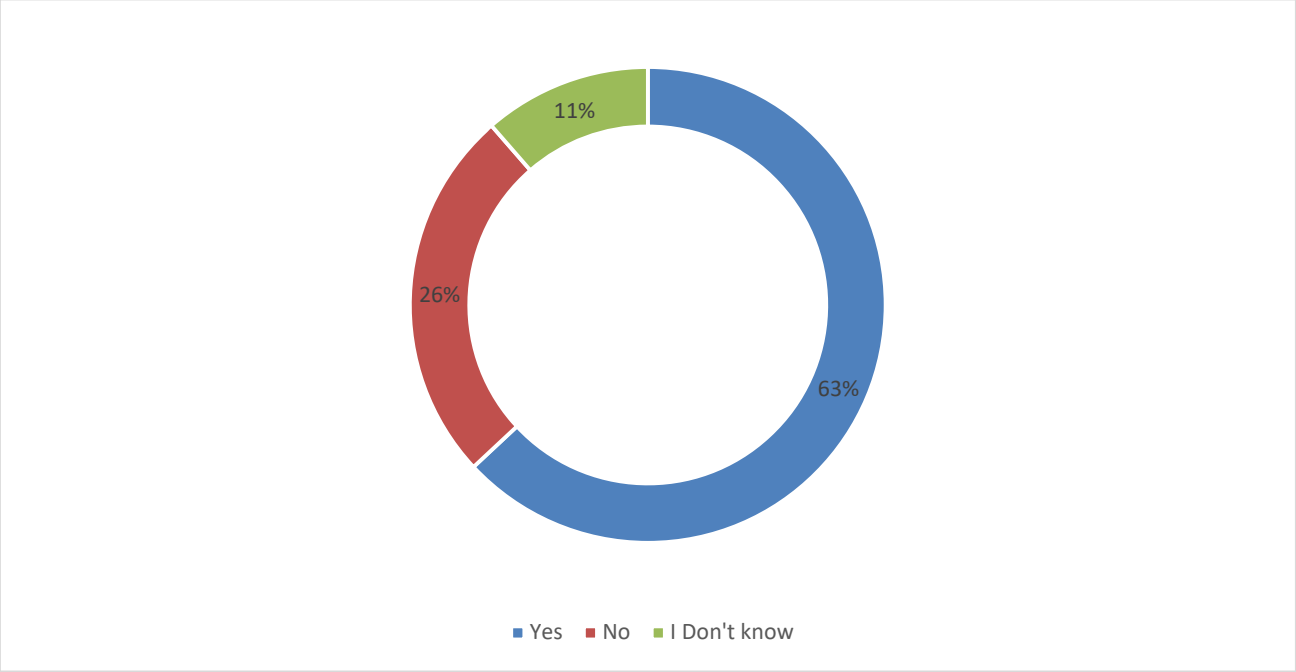
Table (2): Participants' knowledge and awareness level of pregnant women towards the importance of antenatal care (n=447).

Parameter	***Yes***	***No***	***I Don't know***
Did you do the PCV check during pregnancy?	282 63.1%	114 25.5%	51 11.4%
Did you do blood sugar screening during pregnancy?	393 87.9%	54 12.1%	-
Did you do HIV screening during pregnancy?	142 31.8%	305 68.2%	-
Did you do hepatitis B screening during pregnancy?	213 47.7%	234 52.3%	-
Did you do hepatitis C screening during pregnancy?	169 37.8%	278 62.2%	-
Did you do syphilis screening during pregnancy?	109 24.4%	338 75.6%	-

As illustrated in Figure 1; 63.1% of participants checked their PCV during pregnancy and 25.5% they don't checked their PCV during pregnancy.

ISSN:1624-1940
http://magellanes.com/

Figure (1): Illustrates if the participants checked their PCV during pregnancy.



As illustrated in table (3), The table provides insights into the dietary supplements commonly taken by pregnant women during the first month of pregnancy, with a significant proportion opting for folic acid (90.2%), followed by iron (54.8%), calcium (42.7%), iodine (5.4%), and vitamin D (23.3%). Additionally, the data indicates that most respondents are aware that smoking can lead to a child being underweight at birth (49.9% answered 'Yes'). Most participants also understand the importance of seeking medical advice before using any medication during pregnancy (95.5% answered 'No' to using drugs without medical consultation). Furthermore, the findings highlight the awareness among pregnant women about the risks associated with excessive caffeine consumption (90.8% answered 'No'). The table also addresses common pregnancy-related symptoms and healthcare practices, such as the role of a gynaecologist in monitoring foetal development and overall well-being, as well as the need for medical attention in case of pregnancy complications.

Table (3): Parameters related to knowledge and awareness level of pregnant women towards the importance of antenatal care (n=447).

Parameter		***No.***	***Percent (%)***
What kind of dietary supplement does a pregnant lady take throughout the first month? **	Iodine	24	5.4
	Folic acid	403	90.2
	Iron	245	54.8
	Calcium	191	42.7
	Vitamin D	104	23.3
Does smoking cause a pregnant lady to have a child that is underweight at birth?	Yes	223	49.9
	No	27	6.0
	I don’t know	197	44.1

ISSN:1624-1940
http://magellanes.com/

Can a pregnant lady use any drug without first seeking medical advice?	Yes	17	3.8
	No	427	95.5
	I don't know	3	.7
Can a pregnant lady consume large amount of caffeine?	Yes	15	3.4
	No	406	90.8
	I don't know	26	5.8
The desire to vomit, while feeling sluggish is one of the changes that happened during the first trimester?	Yes	422	94.4
	No	16	3.6
	I don't know	9	2.0
Due to salt and water retention does pregnancy include weight gain?	Yes	376	84.1
	No	38	8.5
	I don't know	33	7.4
Is gynaecologist responsible to assist you in keeping tract of both the fetus and your general well-being?	Yes	417	93.3
	No	20	4.5
	I don't know	10	2.2
Frequent urination, back pain, and breathing difficulty are a few of the changes that take place throughout the third trimester?	Yes	369	82.6
	No	42	9.4
	I don't know	36	8.1
Are violent sports beneficial to expectant mothers because they speed up the birth process?	Yes	30	6.7
	No	334	74.7
	I don't know	83	18.6
Does a pregnant women's psychological stress harm the upcoming child?	Yes	407	91.1
	No	15	3.4
	I don't know	25	5.6
Uterine contraction with back discomfort and secretions are signs of near birth?	Yes	408	91.3
	No	20	4.5
	I don't know	19	4.3
Blood should be tested for infections (HIV, HPV, etc) during prenatal booking?	Yes	220	49.2
	No	48	10.7
	I don't know	179	40.0
Describe the pregnancy risk signs (you can choose more than one) **	Spotting, and bleeding	345	77.2
	Heavy vaginal discharge	203	45.4
	Persistent swelling	181	40.5
	Weak, or no fetal movement	410	91.7
	Excessive vomiting	112	25.1
What actions should be performed if the same issue arise?	Self- treatment	14	3.1
	Visit the gynecologist	433	96.9

ISSN:1624-1940
http://magellanes.com/

***** Results may overlap***

Table (4) data reveals that a substantial portion of the participants, 63.5% to be precise, exhibited a low level of awareness, while only 27.3% demonstrated a high level of awareness. The remaining 9.2% fell into the category of moderate awareness. These findings underscore the pressing need for targeted interventions aimed at enhancing awareness among pregnant women about the significance of antenatal care.

Table (4): Shows awareness level of pregnant women towards the importance of antenatal care score results.

	Frequency	**Percent**
High Level of Awareness	122	27.3
Moderate Level of Awareness	41	9.2
Low level of Awareness	284	63.5
Total	447	100.0

Table (5) displays the distribution of responses among the participants, with 55.9% of them having a high level of knowledge, 33.8% possessing a moderate level of knowledge, and 10.3% exhibiting a low level of knowledge on the subject. This breakdown allows us to gauge the overall awareness and understanding of antenatal care among the surveyed pregnant women. The substantial percentage of participants with a high level of knowledge is encouraging as it indicates a good grasp of the importance of antenatal care. However, the presence of individuals with a moderate or low level of knowledge highlights areas for improvement in education and awareness campaigns targeted at pregnant women.

Table (5): Shows knowledge level of pregnant women towards the importance of antenatal care score results.

	Frequency	**Percent**
High level of Knowledge	250	55.9
Moderate level of Knowledge	151	33.8
Low level of Knowledge	46	10.3
Total	447	100.0

Table (6) shows that the awareness level of pregnant women towards the importance of antenatal care has statistically significant relation to age (p value=0.012), reproductive history (p value=0.005), occupation (p value=0.017), and region of residence (p value=0.003). It also shows statistically insignificant relation to nationality, education level and monthly income.

Table (6): Relation between awareness level of pregnant women towards the importance of antenatal care and sociodemographic characteristics.

Parameters	***Awareness level***		***Total (N=447)***	***P value****
	High or moderate	**Low**		

ISSN:1624-1940
http://magellanes.com/

Nationality	Saudi	160	271	431	0.134
		98.2%	95.4%	96.4%	
	Non-Saudi	3	13	16	
		1.8%	4.6%	3.6%	
Age	18 to 24	34	40	74	**0.012**
		20.9%	14.1%	16.6%	
	25 to 35	53	66	119	
		32.5%	23.2%	26.6%	
	36 to 45	49	119	168	
		30.1%	41.9%	37.6%	
	more than 45	27	59	86	
		16.6%	20.8%	19.2%	
Marital status	Single	2	0	2	N/A
		1.2%	0.0%	0.4%	
	Married	150	271	421	
		92.0%	95.4%	94.2%	
	Divorced	3	9	12	
		1.8%	3.2%	2.7%	
	Widowed	8	4	12	
		4.9%	1.4%	2.7%	
Education level	Elementary	2	2	4	0.692
		1.2%	0.7%	0.9%	
	Intermediate	2	10	12	
		1.2%	3.5%	2.7%	
	High school	23	32	55	
		14.1%	11.3%	12.3%	
	Diploma	26	48	74	
		16.0%	16.9%	16.6%	
	Bachelor’s degree	99	175	274	
		60.7%	61.6%	61.3%	
	Post-graduate	11	16	27	
		6.7%	5.6%	6.0%	
	None	0	1	1	
		0.0%	0.4%	0.2%	
Reproductive history	Primigravida	59	61	120	**0.005**
		36.2%	21.5%	26.8%	
	2	46	111	157	
		28.2%	39.1%	35.1%	
	3-4	20	32	52	
		12.3%	11.3%	11.6%	
	More than 5	38	80	118	
		23.3%	28.2%	26.4%	
Monthly Income	Less than 5000 SAR	40	71	111	0.504
		24.5%	25.0%	24.8%	

ISSN:1624-1940
http://magellanes.com/

	5000 – 10000 SAR	53	107	160	
		32.5%	37.7%	35.8%	
	11000 – 15000 SAR	46	76	122	
		28.2%	26.8%	27.3%	
	More than 15000 SAR	24	30	54	
		14.7%	10.6%	12.1%	
Occupation	Employee in the government sector	73	138	211	**0.017**
		44.8%	48.6%	47.2%	
	Employee in the private sector	8	14	22	
		4.9%	4.9%	4.9%	
	Free business	4	10	14	
		2.5%	3.5%	3.1%	
	Housewife	2	14	16	
		1.2%	4.9%	3.6%	
	Student	24	18	42	
		14.7%	6.3%	9.4%	
	Unemployed	49	76	125	
		30.1%	26.8%	28.0%	
	Other	3	14	17	
		1.8%	4.9%	3.8%	
Region of residence	Northern region	49	106	155	**0.003**
		30.1%	37.3%	34.7%	
	Southern region	1	2	3	
		0.6%	0.7%	0.7%	
	Middle region	12	6	18	
		7.4%	2.1%	4.0%	
	Eastern region	25	21	46	
		15.3%	7.4%	10.3%	
	Western region	76	149	225	
		46.6%	52.5%	50.3%	

****P value was considered significant if ≤ 0.05.***

Table (7) shows that the knowledge level of pregnant women towards the importance of antenatal care has statistically insignificant relation to nationality, age, marital status, education level, reproductive history, monthly income, occupation, and region of residence.

Table (7): Relation between knowledge level of pregnant women towards the importance of antenatal care and sociodemographic characteristics.

Parameters	***Knowledge level***		***Total (N=447)***	***P value****
	High level	**Moderate or Low**		

ISSN:1624-1940
http://magellanes.com/

Nationality	Saudi	239	192	431	0.215
		95.6%	97.5%	96.4%	
	Non-Saudi	11	5	16	
		4.4%	2.5%	3.6%	
Age	18 to 24	38	36	74	0.165
		15.2%	18.3%	16.6%	
	25 to 35	60	59	119	
		24.0%	29.9%	26.6%	
	36 to 45	105	63	168	
		42.0%	32.0%	37.6%	
	more than 45	47	39	86	
		18.8%	19.8%	19.2%	
Marital status	Single	0	2	2	0.094
		0.0%	1.0%	0.4%	
	Married	234	187	421	
		93.6%	94.9%	94.2%	
	Divorced	6	6	12	
		2.4%	3.0%	2.7%	
	Widowed	10	2	12	
		4.0%	1.0%	2.7%	
Education level	Elementary	2	2	4	N/A
		0.8%	1.0%	0.9%	
	Intermediate	7	5	12	
		2.8%	2.5%	2.7%	
	High school	29	26	55	
		11.6%	13.2%	12.3%	
	Diploma	40	34	74	
		16.0%	17.3%	16.6%	
	Bachelor's degree	155	119	274	
		62.0%	60.4%	61.3%	
	Post-graduate	16	11	27	
		6.4%	5.6%	6.0%	
	None	1	0	1	
		0.4%	0.0%	0.2%	
Reproductive history	Primigravida	58	62	120	0.246
		23.2%	31.5%	26.8%	
	2	90	67	157	
		36.0%	34.0%	35.1%	
	3-4	32	20	52	
		12.8%	10.2%	11.6%	
	More than 5	70	48	118	
		28.0%	24.4%	26.4%	
Monthly Income	Less than 5000	64	47	111	0.818

ISSN:1624-1940
http://magellanes.com/

	SAR	25.6%	23.9%	24.8%	
	5000 – 10000 SAR	90	70	160	
		36.0%	35.5%	35.8%	
	11000 – 15000 SAR	69	53	122	
		27.6%	26.9%	27.3%	
	More than 15000 SAR	27	27	54	
		10.8%	13.7%	12.1%	
Occupation	Employee in the government sector	120	91	211	0.069
		48.0%	46.2%	47.2%	
	Employee in the private sector	7	15	22	
		2.8%	7.6%	4.9%	
	Free business	5	9	14	
		2.0%	4.6%	3.1%	
	Housewife	8	8	16	
		3.2%	4.1%	3.6%	
	Student	27	15	42	
		10.8%	7.6%	9.4%	
	Unemployed	76	49	125	
		30.4%	24.9%	28.0%	
	Other	7	10	17	
		2.8%	5.1%	3.8%	
Region of residence	Northern region	93	62	155	N/A
		37.2%	31.5%	34.7%	
	Southern region	0	3	3	
		0.0%	1.5%	0.7%	
	Middle region	9	9	18	
		3.6%	4.6%	4.0%	
	Eastern region	27	19	46	
		10.8%	9.6%	10.3%	
	Western region	121	104	225	
		48.4%	52.8%	50.3%	

P value was considered significant if ≤ 0.05.

Discussion:

Antenatal care (ANC) that includes education, screening, counseling, treatment, promoting, and monitoring is an important step for the safety of the mother and fetus [14]. ANC provides both psychological and medical needs of pregnant women within the context of health care delivery system,

ISSN:1624-1940
http://magellanes.com/

culture, and religion in which the women live. Regular use of antenatal care by pregnant women gives opportunities to health workers to predict and manage pregnancy complications to ensure acceptable maternal and perinatal outcomes. Confidential inquiries into maternal deaths in developing countries have found a positive association with inadequate antenatal care as a risk factor for maternal mortality [15]. Understanding maternal knowledge and practices of the community regarding care during pregnancy and delivery is required for program implementation. Almost 90% of maternal deaths occur in developing countries, and over half a million women die each year due to pregnancy and childbirth-related causes [16].

Different factors influence the awareness regarding importance of antenatal checkups which include role of education, income, support of the family and equitable distribution of health services between rural and urban population. It has been documented that as the educational status of the females in urban settings is improving leading to increase in the awareness regarding importance of antenatal care. It is seen that educated mothers make conscious decision of availing ANC services from government or private hospitals. The estimates also support that, maternal deaths can also be reduced by capacity building of the health personals both at government and private sector who can identify the pregnancy related complication and at the same time provide health education to the expectant mother [17]. Thus, we aim in this study to assess knowledge and awareness levels of the importance of Antenatal care among pregnant women in Saudi Arabia.

As regard the score of awareness level of pregnant women towards the importance of antenatal care, we have found that 63.5% to be precise, exhibited a low level of awareness, while only 27.3% demonstrated a high level of awareness. The remaining 9.2% fell into the category of moderate awareness. Moreover, knowledge score among our participants revealed that 55.9% of them having a high level of knowledge, 33.8% possessing a moderate level of knowledge, and 10.3% exhibiting a low level of knowledge on the subject.This study produced lower scores than a similar study conducted in Ilorin, which observed that over two-thirds of the respondents (87.7%) were aware of ANC services [18]; it also showed lower scores than a study conducted in Ghana that recorded 79.2% of women sampled as having good knowledge [19].

On the other hand, another descriptive cross-sectional study, conducted by Adewoye et al [18] found that 87.7% of the respondents were aware of ANC, out of which most of them had good knowledge which is higher than our results. Moreover, in a study in Osun, Nigeria, Onasoga et al [20] identified the lack of knowledge about existing services in ANC. In contrast to our results, a study conducted by Damilola A. Jesuyajolu et.al, (2022) [21], revealed that over 90% of the women sampled knew each activity carried out during ANC, and over 97% had excellent knowledge of ANC. Furthermore, a study conducted in North Western Asmara, Eritrea, in 2017, revealed that most of the participants had good knowledge related to timing of first ANC visit and participants showed positive attitudes towards the ANC services provided to them [22]. Consistently, a study conducted by Hailemichael Gebremariam et.al, (2023) [23], revealed that 84.1% of the mothers had good comprehensive knowledge. This was almost similar to a study in Benghazi, Libya (85.3%) [23], and higher to a study done in Maharashtra (58%) [24] and in Nigeria (44.2%) [25]. This higher level of knowledge reflects the interventions already done by the Ministry of Health and the reproductive health department in increasing awareness on different aspects of antenatal care.

As regard the relation between awareness level of pregnant women towards the importance of antenatal care and sociodemographic characteristics, we have found a statistically significant relation to age (p value=0.012), reproductive history (p value=0.005), occupation (p value=0.017), and region of residence (p value=0.003). There was also a statistically insignificant relation to nationality, education level and monthly income. On the other hand, another cross-sectional study conducted in Eritria (2019)

ISSN:1624-1940
http://magellanes.com/

[26], revealed that age, occupation, and ethnicity had showed significant association to their comprehensive knowledge. Moreover; their level of gravidity and parity had indicated statistically significant association to their knowledge and practice which is consistent with our results. This was different to a study conducted in Pakistan that knowledge about antenatal care was much higher in primigravid, younger educated women [27]. This had shown that being multiparous, multigravida, married, and housewife have an option to have direct contact with health professionals on antenatal care visits for counseling.

Conclusion:

In conclusion, the majority of the pregnant women had low level of awareness but adequate level of knowledge about the importance of antenatal care. The level of overall knowledge of the respondents about ANC had a significant positive relation to their age, occupation and residence. These findings underscore the pressing need for targeted interventions aimed at enhancing awareness among pregnant women about the significance of antenatal care. Thus, health professionals should advocate in increasing community awareness on antenatal care and the possible complications during delivery to decrease the preventable maternal deaths. As the WHO recommendation, starting antenatal care as early as possible in the first trimester and having regular visits to about eight times should be advocated.

Acknowledgement:

We thank the participants who all contributed samples to the study.

Ethical approval

An informed consent was obtained from each participant after explaining the study in full and clarifying that participation is voluntary. Data collected were securely saved and used for research purposes only.

Funding

The study did not receive any external funding.

Conflict of interests

The authors declare that there are no conflicts of interest.

Informed consent:

Written informed consent was obtained from all individual participants included in the study.

Data and materials availability

All data associated with this study are present in the paper.

References:

1. Alqatifi AA, Rowaithy NMMA-, Alazmi AMS, Almutairi WH, Almotiry SF, Almotteri SF, et al. Colorectal Cancer (CRC) Awareness among Primary Healthcare Providers. Int J Med Sci Clin Res Stud [Internet]. 2023;03:1179–87.
2. Zuhriyah L, Kalzum Kiah F, Wayan Agung Indrawan I. EAS Journal of Nursing and Midwifery Abbreviated Key Title: EAS J Nurs EAS Journal of Nursing and Midwifery Abbreviated Key Title: EAS J Nurs Midwifery Knowledge, Attitude, and Utilization of Antenatal Care in Kupang City, East Nusa Tenggara, Indonesia. 2020; Available from: https://www.easpublisher.com/easjnm
3. Omotayo RS, Akintan AL, Akadiri O, Bade-Adefioye AM, Omotayo SE. Level of awareness of primigravida about pregnancy and antenatal care at the time of booking in a South West Nigerian tertiary hospital. Int Res J Med Med Sci [Internet]. 2020;8:83–96. Available from: http://www.netjournals.org/z_IRJMMS_20_029.html
4. Sitalakshmi V, Bavyasri P, Talapala R, Kopperla M. Study on knowledge, attitude and practice of ante-natal care among pregnant women attending antenatal tertiary care institution. Int J Reprod Contraception, Obstet Gynecol. 2020;9:1169.
5. Ali N, Elbarazi I, Alabboud S, Al-Maskari F, Loney T, Ahmed LA. Antenatal Care Initiation Among Pregnant Women in the United Arab Emirates: The Mutaba'ah Study. Front Public Heal. 2020;8:1–7.
6. Gebremariam H, Tesfai B, Tewelde S, Kiflemariam Y, Kibreab F. Level of Knowledge, Attitude, and Practice of Pregnant Women on Antenatal Care in Amatere Health Center, Massawa, Eritrea: A Cross-Sectional Study, 2019. Infect Dis Obstet Gynecol. 2023;2023.
7. Mohammed Salama A, Kamal Aly F. Effect of Antenatal Instructional Package on Pregnant Women' Knowledge, Attitude and Practices. Am J Nurs Res. 2019;7:519–33.
8. Wolde HF, Tsegaye AT, Sisay MM. Late initiation of antenatal care and associated factors among pregnant women in Addis Zemen primary hospital, South Gondar, Ethiopia. Reprod Health. 2019;16.
9. Bashir S, Ansari AH, Sultana A. Knowledge, Attitude, and Practice on Antenatal Care Among Pregnant Women and its Association With Sociodemographic Factors: A Hospital-Based Study. J Patient Exp. 2023;10.
10. Afaya A, Azongo TB, Dzomeku VM, Afaya RA, Salia SM, Adatara P, et al. Women's knowledge and its associated factors regarding optimum utilisation of antenatal care in rural Ghana: A crosssectional study. PLoS One. 2020;15.
11. Akhtar S, Hussain M, Majeed I, Afzal M. Knowledge Attitude and Practice Regarding Antenatal Care among Pregnant Women in Rural Area of Lahore. Int J Soc Sci Manag. 2018;5:155–62.
12. Jibril UN, Saleh GN, Badaki O, Anyebe EE, Umar A, Kamal A. Health education intervention on knowledge and accessibility of pregnant women to antenatal care services in Edu, Kwara State, Nigeria. Int J Women's Heal Reprod Sci [Internet]. 2018;6:154–60. Available from: http://dx.doi.org/10.15296/ijwhr.2018.26
13. Al-Fadhly A, Alosaimi M, Alqurashi W, Aldawsari A, Alhawiti M, Alharthi A, et al. Assessment of antenatal care knowledge and awareness among women living in Saudi Arabia. Med Sci. 2022;26:1–11.
14. 2. Al Hamazi J. M., Habib H. M., Sebeih S. H., Khan M. I., Elmaghrabi S. A., Tharwat R. J. Awareness of antenatal care importance among Saudi pregnant women in Madina. Journal of Gynecology and Womens Health . 2017;4 doi: 10.19080/JGWH.2017.04.555649. [CrossRef] [Google Scholar]

ISSN:1624-1940
http://magellanes.com/

15. 5. Shafqat T., Fayaz S., Rahim R., Saima S. Knowledge and awareness regarding antenatal care and delivery among pregnant women. Journal of Medical Sciences . 2015;23(2):88–91. [Google Scholar]
16. NIPS:Pakistan Demographic and Health Survey Islamabad:National Institute of Population Studies Islamabad. Cited on 24 August 2017. Available on http://www.nips.org.pk/abstract_files/PDHS%20-%202017-18%20Key%20indicator%20Report%20Aug%202018.pdf .
17. 12. Adewoye KR, Musa IO, Atoyebi OA, Babatunde OA. Knowledge and Utilization of Antenatal Care Services by Women of Child-Bearing Age in Ilorin-East Local Government Area, North Central Federal Republic of Nigeria. International Journal of Science and Technology 2013; 3: 188–193.
18. 13. Afaya A, Azongo TB, Dzomeku VM, et al. Women's knowledge and its associated factors regarding optimum utilisation of antenatal care in rural Ghana: a cross-sectional study. PLoS One. 2020;15 [PMC free article] [PubMed] [Google Scholar]
19. Onasoga OA, Afolayan J, Oladimeji B. Osun State Nigeria; 2012. Factors influencing utilization of antenatal care services among pregnant women in Ife Central Lga.https://www.researchgate.net/publication/308698442_Factors_influencing_utilization_of_antenatal_care_services_among_pregnant_women_in_Ife_Central_Lga_Osun_State_Nigeria Available at: Accessed January 22, 2022. [Google Scholar]
20. Jesuyajolu, D. A., Ehizibue, P., Ekele, I. N., Ekennia-Ebeh, J., Ibrahim, A., & Ikegwuonu, O. (2022). Antenatal-care knowledge among women of reproductive age group in Ido Ekiti, Nigeria. AJOG global reports, 2(3), 100073. https://doi.org/10.1016/j.xagr.2022.100073
21. Ghilagabr B. Knowledge and Attitude among Women of Child Bearing Age towards Timing of First Antenatal Care Visit in North . Eritrea: Western Asmara; 2017. [Google Scholar]
22. Gebremariam, H., Tesfai, B., Tewelde, S., Kiflemariam, Y., & Kibreab, F. (2023). Level of Knowledge, Attitude, and Practice of Pregnant Women on Antenatal Care in Amatere Health Center, Massawa, Eritrea: A Cross-Sectional Study, 2019. Infectious diseases in obstetrics and gynecology, 2023, 1912187. https://doi.org/10.1155/2023/1912187
23. Ibrahim H. K., el Borgy M. D., Mohammed H. O. Knowledge, attitude, and practices of pregnant women towards antenatal care in primary healthcare centers in Benghazi, Libya. The Journal of the Egyptian Public Health Association . 2014;89(3):119–126. doi: 10.1097/01.EPX.0000455673.91730.50. [PubMed] [CrossRef] [Google Scholar]
24. Patel B. B., Gurmeet P., Sinalkar D. R., Pandya K. H., Mahen A., Singh N. A study on knowledge and practices of antenatal care among pregnant women attending antenatal clinic at a Tertiary Care Hospital of Pune, Maharashtra. Medical Journal of Dr. D.Y. Patil University . 2016;9(3):p. 354. doi: 10.4103/0975-2870.182507. [CrossRef] [Google Scholar]
25. Rosliza A. M., Muhamad J. J. Knowledge, attitude and practice on antenatal care among Orang Asli women in Jempol, Negeri Sembilan. Malaysian Journal of Public Health Medicine . 2011;11(2):13–21. [Google Scholar]
26. Gebremariam, Hailemichael et al. “Level of Knowledge, Attitude, and Practice of Pregnant Women on Antenatal Care in Amatere Health Center, Massawa, Eritrea: A Cross-Sectional Study, 2019.” Infectious diseases in obstetrics and gynecology vol. 2023 1912187. 24 Jan. 2023, doi:10.1155/2023/1912187
27. Shafqat T., Fayaz S., Rahim R., Saima S. Knowledge and awareness regarding antenatal care and delivery among pregnant women. Journal of Medical Sciences . 2015;23(2):88–91. [Google Scholar]

ISSN:1624-1940
http://magellanes.com/