Attitude and Practices of Pregnant Women Attending Antenatal Care

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Abstract

Background: Pregnancy is a critical period marked by substantial physiological changes, necessitating optimal nutrition and lifestyle choices to ensure the health of both mother and child. Despite not being an illness, pregnancy introduces various health risks that can be mitigated through proper antenatal care (ANC). This study aims to evaluate the impact of antenatal care attendance on pregnant women's nutrition, knowledge, attitude, and practices (KAP) and to identify the factors influencing these aspects.

Methods: A descriptive cross-sectional study was conducted at AlRazi Primary Health Care Center in Basrah. One hundred twenty-two pregnant women in their first, second, and third trimesters were selected through systematic random sampling. Data were collected, which covered sociodemographic characteristics, maternal and pregnancy-related information, medical profiles, and KAP regarding nutrition in pregnancy.

Results: The study included 122 women, with 55.7% aged between 20 and 29 years, 62.3% living in urban areas, and 96.7% being housewives. Knowledgeable participants constituted 54.9%, those with a favorable attitude were 50.8%, and those practicing adequately were 42.6%. Significant associations were found between knowledge and maternal education (p = 0.001), husband's education (p = 0.048), and gravidity (p = 0.004). Attitude was significantly associated with maternal education (p = 0.001), husband's occupation (p = 0.028), socioeconomic status (p = 0.005), and hemoglobin levels (p = 0.019).

Conclusions: The study highlights the critical role of antenatal care in enhancing pregnant women's knowledge, attitude, and practices regarding nutrition. Education and socioeconomic status have a significant influence on these factors.

Keywords: Attitude, Practices, Pregnant, Antenatal Care

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Introduction

The World Health Organisation (WHO) states that the true prosperity of society lies in having healthy mothers and children. Pregnancy is a challenging period for a woman as she transitions into motherhood many times. Becoming a mother requires substantial self-reconstruction. Pregnancy is not a sickness, but it poses health risks since all maternal systems undergo significant changes to support the survival and development of the fetus. However, these changes may also lead to conditions including morning sickness, heartburn, and constipation. [1,]

[2] Optimal nutrition and lifestyle choices are crucial during pregnancy to support the development of a healthy baby and may lead to long-term health advantages for the infant. [3]Annually, around 6 million women become pregnant, resulting in the birth of a child in 5 million pregnancies. Utilizing antenatal healthcare appropriately leads to improved mother and newborn health outcomes. Prenatal care is anticipated to impact the development of the fetus, the infant, and the mother. [4]

The World Health Organisation estimates that complications during pregnancy and delivery cause the

deaths of almost 810 individuals per day. [5] Antenatal care is crucial to public health for reducing maternal and newborn morbidity and death worldwide. To prevent congenital impairments, preterm labour, neural tube abnormalities, anaemia, and poor maternal health, the program offers regular check-ups, provides suitable nutritious diets, administers necessary treatments for pregnancy-related complications, and recommends sufficient fluid intake for pregnant women. [6]

The National Family Health Survey defines full ANC as a minimum of three visits for ANC testing, receipt of at least one tetanus toxoid (TT) injection, and intake of 100 tablets of iron and folic acid (IFA). [3]

Utilization of antenatal care is linked to various sociodemographic and economic factors, including the woman's age, education level, employment status, number of children, media exposure, household income, awareness and understanding of antenatal care services, cultural beliefs, autonomy of the woman, availability and accessibility of healthcare services, previous experiences of delivery complications, and motivation from healthcare providers or family members. [7]

Scientific evidence worldwide indicates that the underutilization of prenatal care services is linked to issues including low maternal education, teenage pregnancy multiparity, unplanned pregnancies, and cultural influences. [8]

Aims of the study

This study aims to reveal the impact of antenatal care attendance and assess pregnant women's nutrition, knowledge, attitude, and practices, as well as the factors that affect them.

Method

This is a descriptive cross-sectional study conducted at AlRazi Primary Health Care Center, AlBasrah, to investigate the impact of antenatal care attendance and assess the nutrition, knowledge, attitudes, and practices of pregnant women, as well as the factors that influence them. Data were collected for the period from October 1, 2023, to April 1, 2024.

One hundred twenty-two pregnant women in the 1st, 2nd, and 3rd trimesters were selected by a systematic random sampling method while they were visiting the AlRazi primary health care center in AlBasrah.

Women who refused to participate, Those who became severely ill during data collection, Mothers who were on repeated follow-up visits for the same pregnancy, and Mothers who had difficulties conducting the interview.

The agreement between the University of Basrah, the College of Medicine, and the Basrah Directorate of Health to conduct the study was obtained before commencing the study.

The enrolled women were thoroughly informed about the topic issue and its significance, and verbal consent had been obtained from them before their participation.

The researcher used face-to-face interviews to collect data. The questionnaire was adapted after reviewing similar literature. It includes the following aspects:

- Sociodemographic characteristics of the mother and the husband include age, residency, educational level, occupation, number of family members, and family income.
- Maternal and pregnancy-related characteristics such as parity and inter-pregnancy intervals, pregnancy weight gain, frequency of ANC, and the stage of pregnancy (whether 1st, 2nd, or 3rd trimester)
- Medical profile: any history of chronic disease and chronic use of drugs.
- Questions about knowledge, attitude, and practice regarding nutrition in pregnancy.
- About the knowledge, 10 questions were asked. Each parameter was awarded one mark for a correct response and zero marks for an incorrect response. Thus, the total marks for questions related to knowledge were 10. Those who scored 70% or above were considered to have adequate knowledge, while those who scored below 70% were considered to have inadequate knowledge.
- Regarding the attitude, it was an opinion on dietary changes, iron and folic acid (IFA) intake, and the frequency of intake. Each attitude questionnaire was scaled using a 3-point Likert scale. The total score for questions related to attitude was carrying 27 marks. Those who scored 70% and above were considered to have a good attitude.
- Questions were asked about the women's practices, and 13 questions were posed. Each parameter was awarded one mark for good practice and zero marks if the practice was deemed inappropriate. Thus, the total marks for questions related to practices were 13. Those who scored 70% and above were considered to be practicing adequately, and those who scored below 70% were considered to have inadequate practices.
- Data were entered using computerized statistical software; the Statistical Package for the Social Sciences (SPSS) version 26 was used. In all statistical analyses, the level of significance (p-value) is set at ≤ 0.05, and the results are presented in tables and/or graphs.

Results

*Note: All tables mentioned in this section are provided at the end of the article.

The results of 122 women were included in this study; the highest percentage of women, 55.7%, were aged between 20 and 29 years. 62.3% of them live in urban areas, 60.7% have primary education, and 96.7% of them are housewives.

Regarding the husband's characteristics, 41% of them were aged between 20-29 years, 52.5% had primary education, and 80.3% were self-employed.

More than half of the families, 50.8%, had six or more members. 45.9% of them had moderate socioeconomic income. All these data are presented in Table 1.

Women's clinical characteristics were presented in Table 2. 68.9% of them were multigravida, and 73.8% of them had regular ANC. Regarding the stage of pregnancy, 73.8% of women were met during their 3rd trimester. The women were asked about any chronic medical illnesses, and 73.8% of them had no chronic diseases. The Hb level had been checked; 55.7% of women had an Hb level of 9-10.9. Only 6.6% of the participants had severe anemia.

The knowledge, attitude, and practice scores have been calculated and presented in Table 3. 54.9% of women were classified as knowledgeable, 50.8% of them had a favourable attitude, and only 42.6% of them reported good practice.

Table 4 shows the association between the participant's knowledge and other factors. There is no significant association between the mother's age and their knowledge status. Similarly, for the residency, since the p-value>0.05.

The mother's educational level shows a significant association with knowledge status; women with higher education have higher knowledge compared to illiterate women. P-value=0.001.

The mother's occupation shows no significant association with knowledge status (p-value = 0.241).

The husband's age and husband occupation show no significant association with the mother's knowledge. p value >0.05.

The husband's educational level shows a significant association with the knowledge, with a p-value of 0.048.

The number of family members and socioeconomic status also show no effect on the participant's knowledge.

The mother's gravidity shows a significant association with their knowledge status. Multigravida women demonstrate higher knowledge levels compared to primigravid women. p-value=0.004.

The ANC regularity, stage of pregnancy, history of chronic illnesses, and Hb level show no significant association with

Table 5 shows the association between the participant's attitude and other factors. There is no significant association between mother's age and their attitude since P-value= 0.517. Similarly, for the residency.

The mother's educational level shows a significant association with her attitude; women with higher education tend to have a better attitude compared to illiterate women. P-value=0.001.

The mother's occupation shows no significant association with the attitude. P-value =0. 325.

The husband's age and husband educational level show no significant association with the attitude. p value >0.05.

The husband's occupation shows a significant association with the attitude, with a p-value of 0.028.

The number of family member show no effect on the Women's attitude.

Socioeconomic status is significantly associated with women's attitudes. Individuals with a higher socioeconomic status generally exhibited a more positive attitude compared to those with a lower socioeconomic status. P value =0.005

The mother's Hb level shows a significant association with their attitude. Women who showed higher Hb levels had a better attitude compared to those with anaemia (p-value = 0.019).

The gravidity, ANC regularity, stage of pregnancy, and history of chronic illnesses show no significant association with the knowledge P-value> 0.05.

Table 6 shows the association between participant women's practice and other characteristics. The mother's age and residency show no significant association with their practice p-value > 0.05.

The mothers' educational level shows significant association with their practice. Women with higher education tend to have better practices. p-value=0.002

The mother's occupation, husband's age, husband's educational level, and husband's occupation all show no significant association with the mother's practice since the p-value of more than 0.05

The number of family members shows no significant association with their practice (p-value = 0.105).

Socioeconomic status shows significant association with the women's practice; those with good socioeconomic status had a better practice in comparison to those with poor socioeconomic status P value =0.001

The mother's Hb level shows significant association with their practice. Women who show higher Hb levels had better practice in comparison to those with anaemia p-value=0.001

The gravidity, ANC regularity, stage of pregnancy, and history of chronic illnesses show no significant association with the practice P-value> 0.05.

Discussion

The significance of maternal nutrition and health behaviors during pregnancy cannot be overstated, as these factors are crucial for the well-being of both the mother and the developing fetus. [9] Adequate antenatal care (ANC) and a balanced diet may substantially reduce the likelihood of complications during pregnancy and delivery, thereby enhancing health outcomes. [10]

The KAP evaluation revealed that 54.9% of participants were aware of pregnancy nutrition, 50.8% held a favorable attitude, and 42.6% followed acceptable nutritional practices. While there is a reasonably high level of information, the ability to use this knowledge to develop favorable attitudes and efficient practices is inconsistent. Other research has also revealed disparities between knowledge and practice, often attributed to cultural, social, and economic barriers. Research conducted by Hammouh et al. (2023) [11] in Jordan found that 52.8% of the participants exhibited poor knowledge, 52.7% had negative attitude ratings, and 72.6% had poor practices, which aligns with our results. We agree with the research conducted by Wang et al. (2023) [12] that identified discrepancies between individuals' nutritional knowledge and their attitudes, as well as between attitudes and practices. Consistent with our study's hypothesis, both knowledge and attitude were significant factors in determining practice. The practice is linked to both attitude and knowledge, as noted by Masuku and Lan (2014). [13] This phenomenon thoroughly explained the respondents' positive attitude towards nutrition. However, the limited reserve of nutrition information hindered the translation of nutrition attitudes into nutrition practice. [14]

Higher educational levels in mothers and husbands were significantly associated with better knowledge (p = 0.001 and p = 0.048, respectively), indicating that education is a crucial determinant of health knowledge. Additionally, multigravida women were more knowledgeable than primigravida women (p = 0.004), possibly due to their prior pregnancy experiences. These findings are in line with previous research by Tesfaye et al. (2024) (15) and Gezimu et al. (2022). [16]

Mothers with secondary education and higher socioeconomic status exhibited a significantly more favorable attitude (p = 0.001 and p = 0.005, respectively). This supports the notion that socioeconomic factors influence health attitudes and behaviors. These findings are in line with Gezimu et al. (2022) [16] and Kim et al. (2018). [17]

This study found a significant association between hemoglobin (Hb) levels and the attitude of pregnant women towards nutrition and antenatal care. Women with higher Hb levels (≥11) were more likely to have a favorable attitude compared to those with lower Hb levels (p = 0.019). This finding aligns with existing literature, which suggests that a better nutritional status and overall health have a positive influence on attitudes towards health practices and interventions (18).

A significant association was found between good practice, higher levels of maternal education, and better socioeconomic status (p = 0.002 and p = 0.001, respectively). Furthermore, a significant correlation was found between higher hemoglobin levels (≥11) in women and their likelihood of engaging in good health practices (p = 0.001). This highlights the influence of general health status on health behaviors.

Improved awareness of health issues often correlates with higher levels of education, enabling women to understand the importance of adequate nutrition throughout pregnancy. Women with higher levels of education are more likely to seek and understand health-related information actively, enabling them to make informed choices about their dietary habits and overall well-being. Research repeatedly shows that the level of education a mother has is a reliable indicator of beneficial health behaviors and outcomes during pregnancy. [19] Education enables women to make informed health decisions, express their needs in healthcare settings, and adopt successful dietary habits. Women with higher levels of education are also more likely to have access to resources and support networks that promote favorable dietary practices. [20]

Conclusions

The educational levels of both the mother and father have a substantial impact on their knowledge, attitudes, and practices regarding nutrition during pregnancy. Improved understanding and more positive attitudes towards nutrition are associated with increased educational achievement in both mothers and partners. Participants with a higher socioeconomic status had better dietary habits than those with a lower socioeconomic status. Different degrees of knowledge, attitudes, and practices regarding nutrition during pregnancy were correlated with age and gravidity. Research has shown that regular attendance at antenatal care (ANC) is associated with improved dietary habits, indicating that active participation in healthcare promotes greater adherence to nutritional requirements. Additionally, the study found correlations between haemoglobin levels

and knowledge, attitudes, and practices. This suggests that the health of mothers might impact their dietary behaviors.

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Table 1: the sociodemographic characteristics of the participants

Variables		N. (%)
Mothers age	<20	14 (11.5)
	20-29	68 (55.7)
	30-39	36 (29.5)
	>40	4 (2.3)
Residency	Rural	46(37.7)
	Urban	76 (62.3)
Mothers Educational level	Illiterate	14 (11.5)
	Primary	74 (60.7)
	Secondary	26 (21.3)
	Higher education	8 (6.6)
Mothers occupation	Housewives	118 (96.7)
	Employed	4 (3.3)
Husbands age	<20	8 (6.5)
	20-29	50 (41.0)
	30-39	42 (34.4)
	>40	22 (18.0)
Husband educational level	Illiterate	14 (11.5)
	Primary	64 (52.5)
	Secondary	32 (26.2)
	Higher education	12 (9.8)
Husband occupation	Self-employed	98(80.3)
	Employed	24 (19.7)
Family members	2-4	60 (49.2))
	>5	62 (50.8)
Socioeconomic status	Good	28 (23.0)
	Moderate	56 (45.9)
	Poor	38 (31.1)
Total		122 (100.0)

Table 2: the clinical characteristics of the participants

Variables		N. (%)
Gravida	Primigravida	38 (31.1)
	Multigravida	84(68.9)
Regular ANC	Yes	90 (73.8)
	No	32 (26.2)
Stage of pregnancy	1st trimester	14 (11.5)
	2nd trimester	18 (14.8)
	3rd trimester	90 (73.8)
Any chronic medical illness	Yes	32 (26.2)
	No	90 (73.8)
Hb level	<7	8 (6.6)
	7-8.9	12 (9.8)
	9-10.9	68 (55.7)
	>11	34 (27.9)

Table 3: the knowledge, attitude, and practice percentage among participants

Variables		N. (%)
Knowledge	Knowledgeable	67 (54.9)
	Not knowledgeable	55 (45.1)
Attitude	Favorable	62 (50.8)
	Unfavorable	60 (49.2)
Practice	Good	52 (42.6)
	Poor	70 (57.4)
Total		122(100.0)

the knowledge P-value> 0.05.

Table 4: the association between knowledge and other participant factors

Variables		Knowledgeable N=67	Not knowledgeable N=55	p-value
Mothers age	<20	6 (8.9)	8 (14.6)	0.246
	20-29	34 (50.8)	34 (61.8)	
	30-39	24 (35.8)	12 (21.8)	
	>40	3 (4.5)	1 (1.8)	
Residency	Rural	24 (35.8)	22 (40.0)	0.635
	Urban	43 (64.2)	33 (60.0)	
Mothers Educational level	Illiterate	2 (2.9)	12 (21.8)	0.001
	Primary	39 (58.2)	35 (63.6)	
	Secondary	20 (29.9)	6 (10.9)	
	Higher education	6 (8.9)	2 (3.6)	
Mothers occupation	Housewives	63 (94.0)	55 (100)	0.241
	Employed	4 (6.0)	0 (0.0)	
Husbands age	<20	4 (5.9)	4 (7.3)	0.830
	20-29	27 (40.3)	23 (41.8)	
	30-39	22 (32.8)	20 (36.4)	
	>40	14 (20.9)	8 (14.5)	
Husband educational level	Illiterate	6 (8.9)	8 (14.5)	0.048
	Primary	30 (44.8)	34 (61.8)	
	Secondary	21 (31.4)	11 (20.0)	
	Higher education	10 (14.9)	2 (3.7)	
Husband occupation	Self-employed	53 (79.1)	45 (81.8)	0.707
	Employed	14 (20.9)	10 (18.2)	
Family members	2-4	30 (44.8)	30 (54.5)	0.282
	>5	37 (55.2)	25 (45.5)	
Socioeconomic status	Good	16 (23.9)	12 (21.8)	0.144
	Moderate	35 (52.2)	21 (38.2)	
	Poor	16 (23.9)	22 (40.0)	
Gravida	Primigravida	12 (17.9)	26 (47.3)	0.004
	Multigravida	55 (82.1)	29 (52.7)	
Regular ANC	Yes	50 (74.6)	40 (72.7)	0.812
	No	17 (25.4)	15 (27.3)	
Stage of pregnancy	1st trimester	6 (7.0)	8 (14.5)	0.333
	2nd trimester	8 (11.9)	10 (18.2)	
	3rd trimester	53 (79.1)	37 (67.3)	
Any chronic medical illness	Yes	18 (26.9)	14 (25.5)	0.860
	No	49 (73.1)	41 (74.5)	
Hb level	<7	2 (3.0)	6 (10.9)	0.165
	7-8.9	5 (7.5)	7 (12.7)	
	9-10.9	38 (56.7)	30 (54.6)	
	>11	22 (32.8)	12 (21.8)	

Table 5: the association between attitude and other participant's factors

Variables		Favorable N=62	Unfavorable N=60	p-value
Mothers age	<20	7 (11.3)	7(11.7)	0.517
	20-29	31(50.0)	37(61.7)	
	30-39	22 (35.5)	14(23.3)	
	>40	2 (3.2)	2 (3.3)	
Residency	Rural	22 (35.5)	24 (40.0)	0.606
	Urban	40 (64.5)	36 (60.0)	
Mothers Educational level	Illiterate	1(21.6)	13 (21.7)	0.001
	Primary	37 (59.7)	37 (61.7)	
	Secondary	19 (30.6)	7 (11.6)	
	Higher education	5 (8.1)	3 (5.0)	
Mothers occupation	Housewives	59 (95.2)	59 (98.3)	0.325
	Employed	3 (4.8)	1 (1.7)	
Husbands age	<20	4 (6.5)	4 (6.7)	0.955
	20-29	26 (41.9)	24 (40.0)	
	30-39	20 (32.2)	22 (36.7)	
	>40	12 (19.4)	10(16.6)	
Husband educational level	Illiterate	6 (9.7)	8 (13.3)	0.146
	Primary	28 (45.2)	36 (60.0)	
	Secondary	19 (30.6)	13 (21.7)	
	Higher education	9 (14.5)	3 (5.0)	
Husband occupation	Self-employed	45 (72.6)	53(88.3)	0.028
	Employed	17 (27.4)	7 (11.7)	
Family members	2-4	30 (48.4)	30 (50.0)	0.858
	>5	32 (51.6)	30 (40.0)	
Socioeconomic status	Good	20 (32.2)	8 (13.4)	0.005
	Moderate	30 (48.4)	26 (43.3)	
	Poor	12 (19.4)	26 (43.3)	
Gravida	Primigravida	15 (24.2)	23 (38.3)	0.092
	Multigravida	47 (75.8)	37 (61.7)	
Regular ANC	Yes	45 (72.6)	45 (75.0)	0.761
	No	17 (27.4)	15 (25.0)	
Stage of pregnancy	1st trimester	7 (11.3)	7 (11.7)	0.533
	2nd trimester	7 (11.3)	11 (18.3)	
	3rd trimester	48 (77.4)	42 (70.0)	
Any chronic medical illness	Yes	18 (29.0)	14 (23.3)	0.474
	No	44 (70.1)	46 (76.7)	
Hb level	<7	1 (1.6)	7 (11.7)	0.019
	7-8.9	3 (4.8)	9 (15.0)	
	9-10.9	37 (59.7)	31 (51.7)	
	>11	21 (33.9)	13 (21.6)	

Table 6: the association between practice and other participant factors

Variables		Good N=52	Poor N=70	p-value
Mothers age	<20	6 (11.6)	8 (11.4)	0.247
	20-29	29 (55.8)	39 (55.7)	
	30-39	15 (28.8)	21 (30.0)	
	>40	2 (3.8)	2 (2.9)	
Residency	Rural	17 (32.7)	29 (41.4)	0.969
	Urban	35 (67.3)	41 (58.6)	
Mothers Educational level	Illiterate	1 (1.9)	13 (18.6)	0.002
	Primary	27 (51.9)	47 (67.1)	
	Secondary	17 (32.7)	8 (11.4)	
	Higher education	7 (13.5)	2 (2.9)	
Mothers occupation	Housewives	50 (96.2)	68 (97.1)	0.762
	Employed	2 (3.8)	2 (2.9)	
Husbands age	<20	4 (7.7)	4 (5.7)	0.941
	20-29	20(38.5)	30 (42.9)	
	30-39	18 (34.6)	24 (34.3)	
	>40	10 (19.2)	12 (17.1)	
Husband educational level	Illiterate	5 (9.6)	9 (12.9)	0.077
	Primary	23(44.2)	41 (58.6)	
	Secondary	15 (28.8)	17 (24.3)	
	Higher education	9 (17.3)	3 (4.2)	
Husband occupation	Self-employed	40 (76.9)	58 (82.9)	0.414
	Employed	12 (23.1)	12 (17.1)	
Family members	2-4	30 (57.7)	30 (42.9)	0.105
	>5	22 (42.3)	40 (57.1)	
Socioeconomic status	Good	20 (38.5)	8 (11.4)	0.001
	Moderate	27 (51.9)	29 (41.4)	
	Poor	5 (9.6)	33 (47.2)	

Gravida	Primigravida	18 (34.6)	20 (28.6)	0.475
	Multigravida	34 (65.4)	50 (71.4)	
Regular ANC	Yes	40 (76.9)	50 (71.4)	0.456
	No	12 (23.1)	20 (28.6)	
Stage of pregnancy	1st trimester	5 (9.6)	9 (12.9)	0.116
	2nd trimester	4 (7.7)	14 (20.0)	
	3rd trimester	43 (82.7)	47 (67.1)	
Any chronic medical illness	Yes	12 (23.1)	20 (28.6)	0.495
	No	40 (76.9)	50 (71.4)	
Hb level	<7	0 (0.0)	8 (11.4)	0.001
	7-8.9	4 (7.7)	8 (11.4)	
	9-10.9	20 (38.5)	48 (86.6)	
	>11	28 (53.8)	6 (8.6)	