

Factors Associated with Utilization of Antenatal Care Services among Rural Women in Metoubas District
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Abstract

Background: Maternal healthcare utilization is influenced by an intricate network of forces, including social, economic, cultural, and religious factors. As a result, theoretical support is required for a thorough understanding of early ANC and its determinants, which are crucial to this work, as well as conceptual clarity. The **goal** of this study is to identify the aspects that influence rural women's use of antenatal care services in Metoubas district. **Design:** A descriptive research design was followed in this study. **Settings:** The study was conducted at 13 family medicine centers in Metoubas district. **Subjects:** A convenient sample of 300 pregnant women attending the previously mentioned settings was proportionally allocated. **Tools:** The data was gathered utilizing an organized interview schedule and pregnant women's knowledge regarding antenatal care services utilization structured interview schedule and characteristic ANC services. **Results:** More than one-tenth of the pregnant women (14.7%) had a poor knowledge score regarding their antenatal care services, whereas 85.3% had a fair knowledge score. Also, nearly three-fourths of the pregnant women (75.7%) had a low utilization of ANC score services, whereas 12.0% and 12.3% had moderate and high utilization of ANC services, respectively. In addition, most of the studied women (90.0 and 90.3%, respectively) do not agree about the acceptability of waiting for a doctor's long time and that MCH provides health education. **Conclusion:** The factors associated with ANC utilization include geographic accessibility, availability, affordability, and acceptability. Also, most of the studied women reported the acceptability of waiting for a doctor's long time and that MCH provides health education, the availability of health workers' regular and adequate medication equipment supplies, the affordability of coastal transportation suitability and coast medication investigation examination and that MCH is easily accessible and that MCH is near their house as factors associated with ANC utilization. **Recommendations:** Enhance pregnant women's knowledge of antenatal care and the appropriate time to begin by informing pregnant women about the necessity of receiving prompt ANC, hazards of pregnancy, and warning signs. Reinforce studies documenting the need to promote the utilization of ANC among pregnant women at the health facility.

Keywords: The factors associated with ANC utilization and ANC utilization

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Introduction

During pregnancy, the pregnant undergoes marked anatomical and physiological changes to care for and accommodate the developing fetus. These alterations occur following conception and impact many organ systems in the body. Understanding the typical physiological changes that take place during pregnancy is crucial because it helps distinguish from abnormal adaptations (Sarker et al., 2021).

Factors that impede women in underdeveloped nations from receiving vital health treatment include cost (direct charges in addition to the expenses of transportation, drugs, and supplies); various demands on women's time; and women's lack of authority to make decisions within their families. The bad quality of services, especially bad treatment by health practitioners, makes some women hesitant to use them (WHO, 2016).

Likewise, Lindelow (2016) concluded that maternal healthcare utilization is influenced by an intricate network of forces, including social, economic, cultural, and religious factors. As a result, theoretical support is required for a thorough understanding of early ANC and its determinants, which are crucial to this work, as well as conceptual clarity.

Aims of the Study

The goal of this study is to identify the aspects that influence rural women's use of antenatal care services in Metoubas district.

Research Question

What are factors associated with utilization of Antenatal Care services among Rural Women in Metoubas district?

Materials and Method

Materials

Design: A descriptive research design was followed in this study.

Settings: This study was conducted at 13 family medicine centers in Metoubas district. The centers were selected by the multi-stage probability sampling technique.

Subjects: A convenience sample of 300 pregnant women attending the previously mentioned settings was recruited. **Women was chosen according to following criteria:**

All women who attend the previously mentioned centers during their third trimester during the time of data collection was recruited.

Tools: Three tools were used:

Tool one: Basic data structured interview schedule:

This tool was developed by the researcher after reviewing related literature (Abou Shady et al., 2021).

Part I: Socio-demographic factors include: age, their level of education, work, marital status, residency, and family type.

Part II: Medical and surgical history: diabetes mellitus, hypertension, previous gynecological operation.

Part III: Reproductive history include gravidity, parity, the number of abortions, stillbirths, nature of prior pregnancies, labor, and postpartum, as well as number, age, and gender of the living children.

Part IV: Profile of current pregnancy: whether it was intended or not, weeks of pregnancy, reason for seeking another place for ANC.

Tool two: Pregnant women's knowledge regarding antenatal care services utilization structured interview schedule:

Part I: This tool was developed by a researcher based on WHO recommendations on antenatal care for a positive pregnancy (2016) to assess pregnant women's knowledge regarding antenatal care services utilization. The subjects' response to each item varies between incorrect answer don't know (1), correct but incomplete (2), correct & complete (3). For each subject total score ranged from 15-48, the pregnant women's knowledge ranks as follow: poor < 26, fair 26 to < 36 and good \geq 36.

Part II: Pregnant women's utilization of antenatal care services: It includes inquiries regarding women's utilization of ANC services as time of initial visit, number of visits, date of each visit in relation to duration of pregnancy, reason for each visit.

Tool three: Characteristic ANC services: This tool was adapted from Efendi et al. (2017) and Paudel et al. (2017). It included 12 questions categorized under health services.

Method

The Faculty of Nursing, Alexandria University sent a formal letter to the competent authorities of the above-stated study centers seeking permission to conduct the research. Tools were tested for content validity by a Jury of five experts in the field. The requested changes will be established, and the final version will be prepared once it has been proven valid. Cronbach's alpha test validated the tool's stability. Pilot research was done on 30 pregnant women from the above-mentioned centers to figure out the clarity, feasibility, and applicability of the tools.

Each subject was individually interviewed after receiving her care at morning shift from (8-2am) in maternal and childcare room.

Ethical considerations:

For each subject, the following problems will be looked at: obtaining informed written consent following explaining the research aim, maintaining privacy, and the ability to leave at any time, and ensuring the confidentiality of the gathered data.

Statistical Analysis

The collected data was processed, tabulated, and statistically evaluated with SPSS (25.0.). Qualitative data has been explained using numbers and percentages. Quantitative data were presented as mean \pm standard deviation.

Results

Table 1 exhibits the distribution of the studied women according to their socio-demographic-characteristics. Regarding the age of the studied women, about 43.7% of women were in the age group of 20 to 30 years, nearly one-third of them 35.0% women were below 20 years and 21.3% women above the 30 years old. Among the study participants' education, about 48.0% of them had basic education while an equal percentage of them (19.3 & 19.7%) had either secondary or university education, respectively. With regards to their occupation, 71.3% of the studied women were housewives, 19.0 % were workers, and only 9.7 % were employers.

Table 2 exhibits distribution of the studied women according to the reproductive history. Around 78.7% of these pregnant women had more than one prior pregnancy. Less than one-fifth of them (11%) were grand multigravida and only 10.3% of them were primigravida. About 42.3% of the pregnant women had given one birth or above.

Table 3 represents the distribution of the examined women based on their awareness of using ANC service. It shows that about 70.7%, and 47.0 % of the pregnant women incompletely reported the definition and importance of ANC, respectively. Concerning the components of ANC, only 45.7 % of the pregnant women reported the correct answer. 100.0% of the pregnant women incorrectly knew the schedule of ANC. About (97.3%, and 56.7% of the pregnant women correctly reported the timing of the first visit and the drugs that should be taken, respectively. It also shows that most of the studied women had incorrect knowledge regarding the minimum number of visits, the range of weight gain, and the schedule of tetanus toxoid (100.0, 88.7, 80.3, and 98.0, respectively).

Table 4 demonstrates the correlation between the studied women's ANCU utilization scores and the factors associated with ANCU scores. There was a

positive correlation between the factors associated with ANCU utilization scores and low ANCU utilization scores.

Figure 1 clarified the distribution of the studied women according to their total knowledge score. It shows that more than one-tenth of the pregnant women (14.7%) had a poor knowledge score regarding their antenatal care services, whereas 85.3% had a fair knowledge score.

Figure 2 demonstrates the distribution of the studied women according to their utilization of ANC services. It revealed that nearly three-fourths of pregnant women (75.7%) had a low utilization of ANC score services, whereas 12.0% and 12.3% had moderate and high utilization of ANC services, respectively.

Discussion

Concerning age, the findings of the current study revealed that forty-three-point seven percent of the studied women were between the age group of twenty to thirty years, nearly one-third of them were below the twenty years old and twenty-one point three above the thirty years old. The age group ranges from less than twenty to more than thirty years old. It means that more than one-half of the studied women in the age group below the twenty and above the thirty years old. These age groups are more likely to experience complications of pregnancy.

Similarly, this finding is congruent with a study conducted by Gebremeskel et al. (2015), entitled "Timing of first antenatal care attendance and associated factors among pregnant women in Arba Minch town and Arba Minch district, Gamo Gofa zone, South Ethiopia. Contrarily, these findings are not in accordance with a study conducted by Mulat et al. (2015) entitled "Antenatal care service utilization and its associated factors among mothers who gave live birth in the past one year in Womberma Woreda, Northwest Ethiopia.

As for education, about one-half of the studied women completed the basic education while an equal percent of them had either secondary or university education and the minority of them were illiterate or unable to read and write. Educated mothers were more likely to be aware of the ANC. Similar findings have been observed in other studies as Adhikari et al. (2016) who studied "Factors associated with utilization of antenatal care services among tribal women: A study of selected States in India". Other studies have reported conflicting findings regarding education by Biranchi et al. (2018) entitled "Factors associated with utilization of antenatal care services among rural women, Telangana, India."

With regards to the occupation, the outcomes of the research showed that most of the studied women were housewives, and approximately one-fifth of them were workers, and only one-tenth was employers. This finding is in the same line as a study conducted by Adhikari et al. (2016). In contrast to our study, these findings are incongruent with the study conducted by Mulat et al. (2015) in Northwest Ethiopia.

In relation to level of knowledge of the studied women regarding the antenatal care services utilization, the findings of the current study reported that most of the study participants have awareness only about timing of the first visit. According to the study findings, more than three-fourths of the studied women had fair knowledge score regarding the antenatal care services.

Likewise, this finding is supported by a study conducted by Dubale Dulla et al. (2017) entitled "Antenatal Care Utilization and Its Associated Factors among Pregnant Women in Boricha District, in Southern Ethiopia," and Wilunda et al. (2015), who studied "Determinants of utilization of antenatal care and skilled birth attendant at delivery in Southwest Shoa Zone, Ethiopia: A cross sectional study."

The current study's rate of timely ANC initiation among pregnant women is similar with prior studies in Bahir Dar, Ethiopia, and Sub-Saharan Africa (Tesfu et al., 2022). However, the percentage was lower than in the study conducted in Southeast Ethiopia (Wanamo et al., 2021). The percentage was also lower than in studies carried out in Nepal and Sindh, Pakistan (Paudel et al., 2017; Aghaand & Tappis, 2016). On the other hand, the current study had a greater rate of timely ANC initiation than previous studies conducted in Southern Ethiopia (Geta et al., 2017).

This study found that pregnant women who were well-informed about the timing of their first ANC visit were more probable to begin their first ANC appointment on time than their counterparts. This study aligns with studies carried out in Mekele City, Ethiopia, and Ambo, Ethiopia (Tolera et al., 2015; & Fisseha et al., 2015). This could be because the more pregnant women are aware of the timing of their first ANC appointment, the more they understand the benefits of starting the visit. As a result, they might be able begin the ANC visit on time. Pregnant women who intended to become pregnant were far more likely to plan their first antenatal care visit on time than those who had an unanticipated pregnancy. This finding was consistent with a study carried out in Arba Minch, Ethiopia (Feleke et al., 2015). This could be because planned pregnancies are more effectively cared for by

pregnant women and their spouses, allowing them to arrange ANC examinations on time.

In relation to the distribution of the studied women according to their utilization of ANC services, the findings of the current study reported that about three-fourths of the studied women belonging to Metoubas district had a low utilization score of ANC services, whereas twelve percent and twelve percent point three had moderate and high utilization of ANC services, respectively. Thus, information about the ANC services is significantly related to its utilization. Less education, more awareness, greater socioeconomic level, good connections, and easy availability of primary health care centers and subcenters were all found to contribute to higher antenatal care service use in this study spot.

This finding is consistent with Nebeb et al. (2015), who studied "Antenatal care utilization in Debre Tabor, Northwest Ethiopia, and Assefa & Tadesse, (2016), who studied "Factors related to the use of antenatal care services in Ethiopia: application of the zero-inflated negative binomial model". In addition, these findings are in accordance with Kebede et al. (2021), who studied "Effects of antenatal care service utilization on maternal near miss in Gamo Gofa zone, southern Ethiopia: retrospective cohort study".

However, these results differ from those of Wilunda et al. (2015). According to the researcher, this could be attributable to differences in the participants' sociodemographic status and cultural aspects, as well as differences in the study's timing. In addition, this is attributed to the fair knowledge score because of the unavailability of training programs, lack of continuous education, and a deficiency in the role of healthcare providers as health educators.

Concerning the factors associated with ANC services utilization, four aspects have appeared to clarify the use of ANC in Metoubas district, namely geographic accessibility including (MCH easy accessible and MCH near house), availability including (health worker regular found, enough medication equipment supplies, suitable work hours, and transportation available), affordability including (coast transportation suitable and coast medication investigation examination), and acceptability including (Waiting doctor long time, Satisfaction of service, and MCH provide health education), become significant factors associated with ANC services utilization.

Regarding the geographic accessibility factors, the findings of the present study revealed that more than one-half of the studied women stated that the MCH was not easily accessible and the MCH was not near

the house. Furthermore, most of the studied women stated that they were not attending ANC service due to the affordability factors including (the cost of the medications, investigations, examination, and the transportation was not suitable) respectively.

Concerning the availability factors, most of the studied women stated that (there was not enough medication equipment supplies, health workers were not regularly found, work hours was not suitable, and transportation not available). In addition, most of the studied women stated that they were not attending ANC service due to the acceptability factors including (MCH was not provide health education, long waiting time, and was not satisfied of the services).

On the contrary, these findings were not in accordance with Talukder et al. (2021), who studied "Utilization of antenatal care services in Bangladesh: A cross-sectional study exploring the associated factors". Their studies clarified that women's education, partner's education, place of residence, wealth index, and maternal age at birth, birth order, religion, and region of residence were significantly correlated with access to ANC services.

According to the study, the causes for not using ANC services were a lack of awareness, a misunderstanding of ANC benefits, and a lack of prior experience with pregnancy. The disparity in findings could be attributed to the level of education of the study participants. Additionally, a woman's living, and cultural circumstances may influence her decision not to use ANC services.

Pregnant women's excuses for not using their prenatal care services included not being sick (being healthy), being overly busy, having to wait a long time, believing that going to prenatal care is ineffective, and others. The main issues with ANC use are accessibility and availability. Women may be discouraged from traveling to remote medical institutions due to the expense and time involved. Even in wealthy nations, women are less likely to use healthcare facilities if they live a longer distance from them (Genet et al., 2022).

Most of the research concluded that rural women are less likely to use ANC, despite significant disagreement in the literature about geography and ANC usage. Traveling in remote places during pregnancy can be challenging for pregnant women, particularly if the roads are in bad condition. Lack of trained attendants is a widespread problem in developing nations, particularly in the countryside. Compared to cities, rural areas lack sufficient professionals (Tiruneh et al., 2017).

The current study revealed that there was a highly statistically significant relationship between the poor

knowledge scores, and ANC services low utilization score. Thus, information about the ANC services is significantly related to utilization of ANC service. Likewise, this finding was supported by a study conducted by Dubale Dulla et al. (2017).

According to their research, people who were aware of an unfavorable pregnancy had a twice as high chance of using antenatal care than those who did not. This could suggest that awareness of the additional aspects of using ANC services (definition, importance, components, schedule of ANC, goal of visits, the minimum number of visits, first action for feeling any abnormal signs & symptoms, importance of nutrition, range of weight gain, importance of exercise, drugs should be taken, importance of pregnancy drugs, importance of tetanus toxoid, and schedule of tetanus toxoid) increases the opportunity to utilize ANC.

In addition, the study findings concluded that compared to women who were unaware of ANC services, those who were aware of prenatal care had a greater chance of using these services. Women who have health knowledge are more prepared to assess their own health and seek suitable medical care (Sohn & Jung, 2020). The research also shows that women become aware of the risks involved in pregnancy and the advantages of receiving antenatal care when they have sufficient knowledge. For example, one study carried out in Ethiopia observed that women who were more aware about antenatal care were far more likely to use the ANC services than those who were not (Akram et al., 2019).

The results of this research showed that there was a highly statistically significant relationship between the factors associated with ANC services and ANC utilization scores. It means that the high barrier factors associated with low utilization of ANC services score.

However, Konlan et al. (2020), who studied "Factors influencing the utilization of Focused antenatal care services during pregnancy, a study among postnatal women in a tertiary healthcare facility, Ghana". Their findings also showed that low use of ANC services may be impacted not only by individual mother characteristics, but also by other social neighborhoods, such as the accessibility of services within reachable distances, not enough media exposure, and insufficient transportation options due to a lack of birth preparations.

The results related to nulliparous women's use of ANC can be clarified through the possibility that these women are more concerned about the health of their future fetus because of their first pregnancy. This hypothesis is in line with other global research projects that indicate parity has an inverse relationship with

ANC use (Qadr et al., 2019). This result can be attributed to the possibility that nulliparous women have less life experience than multiparous women, which would make them more likely to use ANC, a theory that is also supported by the literature (Muwema et al., 2022).

Additionally, nulliparous women may be less self-assured and more aware of their unborn child, which may motivate them to use ANC services more frequently than multiparous women (Agaba et al., 2021). Furthermore, the high rate of ANC use among nulliparous women may be attributed to better time management, greater family resources, and a positive view of the advantages of ANC (Ssetaala et al., 2020).

Therefore, parity affects the use of ANC, and as parity rises, fewer women receive timely ANC initiation because these women may not value ANC services as highly as nulliparous women do (Kassaw et al., 2020). One study done in Ethiopia supports this finding; nulliparous women were about twice as likely to arrange early visits for ANC services than were women with more children (Arefaynie et al., 2022).

Another factor contributing to the lesser use of ANC services is the high cost of healthcare, particularly in these areas of severe poverty (Zegeye et al., 2018). Consequently, funding for the health sector via insurance or other organizations might reduce these barriers. According to the study, getting ANC services was inversely correlated with birth order as well. According to prior studies, women who are excited about becoming pregnant and fear miscarriage are more likely to receive ANC during their pregnancy (Azanaw et al., 2021).

The findings of the present study concluded a favorable association between the ANC services utilization and the factors associated with ANC services utilization, especially the affordability factors. Furthermore, there was a negative correlation between the ANC services utilization and the sociodemographic characteristics, especially the family income.

The use of antenatal care services was found to be associated with sociodemographic characteristics in this study. It was discovered that women who were between the age of twenty and thirty had a greater probability of using the antenatal care utilization service than those who were older. Several studies that looked at women between the age of fifteen and thirty-four also found that age had an impact on the use of prenatal care. This could be because older women are more likely to be pregnant and to have strong cultural prejudices against professional health care. They are also more likely to have several children to raise.

The utilization scores for ANC services showed a notable correlation with the socio-demographic factors. Concerning age, the low ANC service utilization score is associated with the age group of below 20 years old. In addition, age was classified as less than twenty years, twenty to thirty years, and more than thirty years. This was mainly to see the antenatal care utilization of younger (less than twenty) and the old age (more than thirty years). High rates of pregnancy-related complications impact these specific age groups.

Likewise, this finding is in line with Konlan et al. (2020), and their studies reported that younger women under the age of twenty tended to postpone initiating prenatal care and attend fewer antenatal visits, often due to unplanned pregnancies and lack of awareness about their pregnancy. This observation aligns with the research conducted by Gebremeskel et al. (2015) and Konlan et al. (2020), which emphasized a greater utilization of ANC services among middle-aged groups compared to other age categories.

On the contrary, these results diverge from those of Mulat et al. (2015), who indicated that older mothers were more inclined to utilize ANC services compared to younger age groups. This may be rationalized, as this study was a cross-sectional and large sample size.

The researcher's point of view reflected that ANC services are most utilized during the childbearing period, but it can occur in old age if pregnancy accidentally occurs at this age. In addition, this variation of findings between the studies is probably due to differences in the study design, study inclusion criteria, sample size, and methodology.

In contrast, the results of the current study indicated that illiterate women were more inclined to utilize ANC services compared to university-educated women. This outcome is reasonable since education serves as a pathway for acquiring knowledge, and better-educated women typically possess a deeper understanding of the significance of ANC during pregnancy, potentially reducing their need to utilize ANC services. This result is supported by Mohammad et al. (2017), who studied "Importance of maternal education on antenatal care visits in Bangladesh".

This finding is contradicted by a study conducted by Abdon et al. (2020), entitled "Trends and factors associated with the utilization of antenatal care services during the millennium development goals era in Tanzania", and Efendi et al. (2017) entitled "Determinants of utilization of antenatal care services among adolescent girls and young women in Indonesia, Women & health", Ghana.

In addition, these findings are not in accordance with Dickson et al. (2018) who studied "Determinants

of choice of skilled antenatal care service providers in Ghana: analysis of demographic and health survey, Maternal health, neonatology and perinatology", and Khanal et al. (2015) who studied " Under-utilization of antenatal care services in Timor-Leste: results from Demographic and Health Survey 2009–2010, BMC pregnancy childbirth".

Additionally, these findings are not in accordance with Kibusi et al. (2018) who studied "Health insurance is important in improving maternal health service utilization in Tanzania analysis of the 2011/2012 Tanzania HIV/AIDS and malaria indicator survey. BMC health services research" and Khatri et al. (2021), who studied "Utilization of quality antenatal, delivery and postnatal care services in Nepal: An analysis of Service Provision Assessment. Their research findings highlighted a correlation between higher maternal education and enhanced utilization of ANC services. Similarly, women with higher levels of education were more likely to attend four or more ANC visits.

Research indicates that the use of maternal health services is significantly impacted by higher levels of education (Ogbo et al., 2019). Maternal literacy rates in Tanzania have reportedly grown over time (Mekonnen et al., 2019), and the analyses also showed gains in maternal education. According to their research, women who completed at least primary education level had a higher likelihood of attending one to three ANC appointments; this correlation was even more obvious for those who attended four or more ANC visits.

According to Dickson et al. (2018), educated women may be more likely to interact with health-related promotional messages or to understand the advantages of attending ANC, which could account for their increased usage of ANC. In a country like Tanzania, where health treatments are mostly paid for out of pocket, educated women are also more probable to have enough money to cover the direct and indirect expenses of ANC services (Kibusi et al., 2018).

As regards to the occupation, the findings of the study revealed that most of the studied women were not working, about one-fifth of them were workers, and only one-tenth was employers. Nevertheless, the occupational status of the participants in our study did not show any significant correlation with ANC utilization. This finding is consistent with the research conducted by Gebremeskel et al. (2015) in South Ethiopia, which also found no statistical significance between ANC utilization and occupational status. In contrast, our findings diverged from those of Mulat et al. (2015) in Northwest Ethiopia, whose study revealed that women engaged in gainful employment utilized

maternal services more effectively than those who were not employed.

Conclusion

According to the findings of the present study, it can be concluded that the factors associated with ANCU utilization include geographic accessibility, availability, affordability, and acceptability. Also, the present study showed that most of the studied women did not agree about the acceptability of waiting for a doctor's long time and that MCH provides health education, the availability of health workers' regular and adequate medication equipment supplies. Furthermore, most of the studied women were not sure about the affordability of coastal transportation suitability and coast medication investigation examination. In addition, one-quarter of the studied women agree that MCH is easily accessible and that MCH is near their house. Therefore, the study question is answered.

Recommendations

Based on the findings of the current study, the following implications and recommendations are proposed:

- Enhance the understanding of antenatal care among pregnant women by disseminating information about the importance of timely initiation of ANC, pregnancy risks, and warning signs.
- Reinforce studies documenting the need to promote the utilization of ANC among pregnant women at the health facility.
- Health education sessions are recommended to be given to the pregnant women in simple language using diverse teaching methods including lectures, discussions, and colorful booklets to effectively convey information.
- Further investigation into women's perceptions of and satisfaction with ANC and other maternity services is warranted.

Table (1): Distribution of the studied women according to their Socio-demographic- characteristics (N = 300)

Socio-demographic characteristic	No.	%
Age of mother		
<20	105	35.0
20 – <30	131	43.7
>30	64	21.3
Level of education		
Illiterate or read	39	13.0
Basic education	144	48.0
Secondary	58	19.3
University	59	19.7
Occupation of mother		
Housewife	214	71.3
Workers	57	19.0
Employer	29	9.7
Type of family		
Nuclear	70	23.3
Extended	230	76.7
Family income		
Enough	21	7.0
Insufficient	279	93.0

Table (2): Distribution of the studied women according to the reproductive history (N = 300)

Reproductive history	No.	%
Number of pregnancies	31	10.3
Primi gravida	236	78.7
Multi gravida	33	11.0
Grand multi gravida		
Number of labors		
None	36	12.0
Primipara	113	37.7
Multipara	127	42.3
Grand multipara	24	8.0
Number of abortions		
None	247	82.3
Once	45	15.0
Twice or more	8	2.7
Number of living children		
Non	41	13.7
One	112	37.3
Two	65	21.7

Three or more	82	27.3
Planned pregnancy		
Yes	232	77.3
No	68	22.7
Duration of pregnancy		
Seven months	130	43.3
Eight months	163	54.3
Nine months	7	2.3

Table (3): Distribution of the studied women according to their knowledge regarding the antenatal care services utilization

Tool II: Pregnant women’s knowledge regarding antenatal care services utilization structured interview	Incorrect		Incomplete		Correct	
	No.	%	No.	%	No.	%
Definition of ANC	86	28.7	212	70.7	2	0.7
Importance of ANC	22	7.3	141	47.0	137	45.7
components of ANC	23	7.7	140	46.7	137	45.7
Schedule of ANC	300	100.0	0	0.0	0	0.0
Timing of the first visit	8	2.7	0	0.0	292	97.3
Goal of visits	12	4.0	288	96.0	0	0.0
The minimum number of visits	266	88.7	6	2.0	28	9.3
First action for feeling any abnormal signs & symptoms	178	59.3	23	7.7	99	33.0
Importance of nutrition	1	0.3	279	93.0	20	6.7
Range of weight gain	241	80.3	21	7.0	38	12.7
Importance of exercise	31	10.3	263	87.7	6	2.0
Drugs should be taken	0	0.0	130	43.3	170	56.7
Importance of pregnancy drugs	8	2.7	143	47.7	149	49.7
Importance of tetanus toxoid	85	28.3	205	68.3	10	3.3
Schedule of tetanus toxoid	294	98.0	6	2.0	0	0.0

Table (4): Relationship between the studied women's ANC services utilization scores and the factors associated with ANC utilization scores.

Factors associated with ANCU. utilization	Utilization						X ²	P
	Low utilization (n = 227)		Moderate utilization (n = 36)		High utilization (n = 37)			
	No.	%	No.	%	No.	%		
High barrier	89	70.1	36	28.3	2	1.6	70.616*	<0.001*
Moderate barrier	138	79.8	0	0.0	35	20.2		

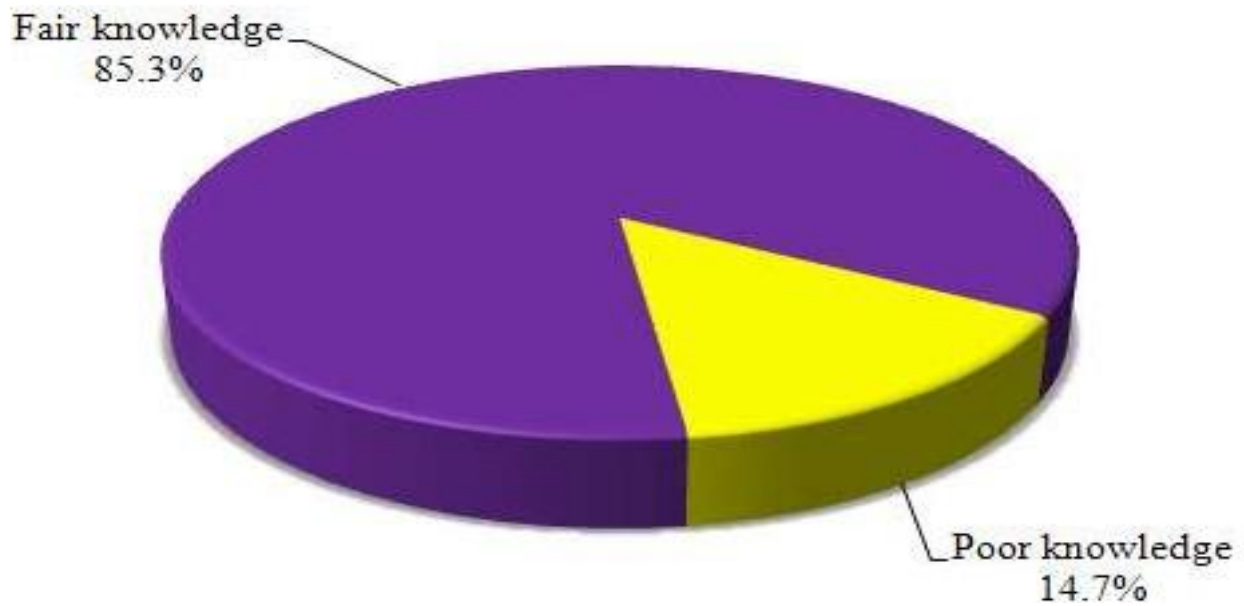


Figure (1): Distribution of the studied women according to their total knowledge score regarding the antenatal care services utilization (N = 300)

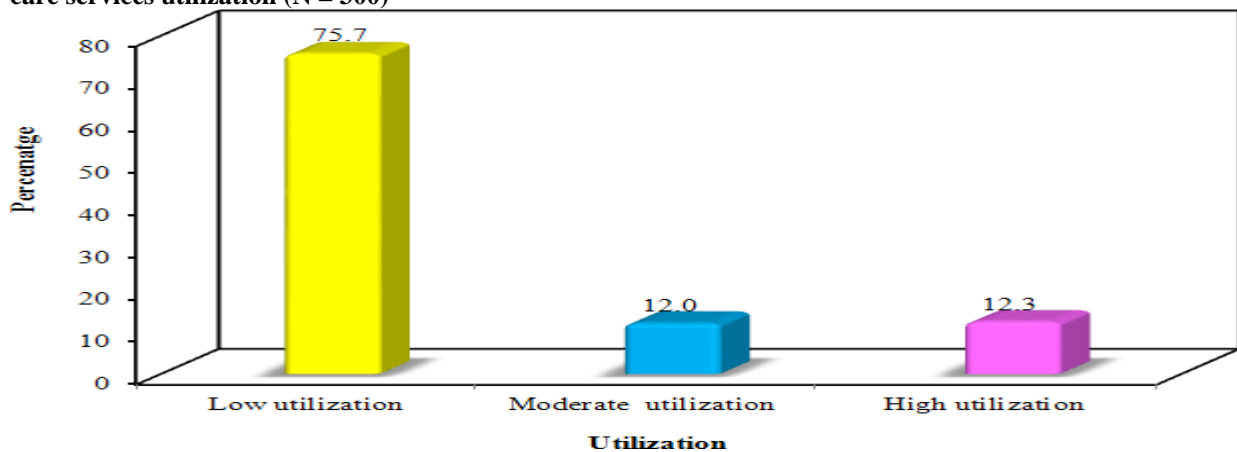


Figure (2): Distribution of the studied women according to their utilization of ANC services (N = 300)

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