

Concern of Pregnant Women Regarding Benefits of Utilizing Antenatal Care in Selected Maternal and Child Health Centers at Minia City

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Abstract

Background: Antenatal care (ANC) is an essential method for reducing maternal morbidity and mortality by increasing the chances of detecting high-risk pregnancies early **Aim of the study:** was to assess concern of pregnant women regarding benefits of utilizing antenatal care in selected Maternal and Child Health Centers at Minia City. **Study design:** A descriptive cross-sectional research design. **Subject:** all women who attend to the Maternal& Child Health (MCH) center during time of data collection (285). **Setting:** This research was conducted at four MCH centers at Minia city (Minia Eastern Health Center, Minia Western Health Center, Minia first & second Health Care Center). **Tools:** Four tools were utilized in this study, the **First tool;** was an interviewing structured questionnaire sheet concerned with socio-demographic features, obstetric history of studied women. **Second tool;** concerned with women knowledge assessment questionnaire about utilization of MCH center. **Third tool;** it was concerned with the assessment of women attitude toward the utilization of MCH services. **Forth tool;** It was concerned with women practices regarding utilization of antenatal services. **Results;** 51.5% of study sample their age ranged from 20-30 years with mean 19.8±12.4, the majority of study subjects 92.7% have satisfactory knowledge score regarding antenatal care and was positive statistically significant relationship between knowledge score, age and education p value 0.001 and 0.001. **Conclusion:** The majority of research participants had adequate information and appropriate practices of antenatal treatment, as well as constructive attitudes toward these programmes. **Recommendations:** Health education sessions for pregnant women should be applied and encouraged from the stakeholders at health directorate and health administration.

Keywords: Pregnant Women, Utilizing Antenatal Care, Maternal& Child Health

Introduction

Antenatal care (ANC) is an essential method for reducing maternal morbidity and mortality by increasing the chances of detecting high-risk pregnancies early. Globally, nearly 303,000 women died from pregnancy-related causes, with low and middle-income countries accounting for 99 % of all maternal deaths, making maternal mortality the health predictor with the largest difference between developed and developing countries (Warri & George, 2020).

Because of a lack of access to appropriate and high-quality antenatal care, millions of women in developing countries are more likely to have life-threatening or pregnancy-related complications. According to the World Health Organization (WHO), providing pregnant women with four antenatal appointments, the first of which should be arranged during the first trimester of pregnancy, is an indicator of adequate treatment (Laksono, Rukmini et al., 2020).

Antenatal care is a set of treatments provided by coordinated health care providers to a pregnant woman, in antenatal treatment, there are several different procedures. During a pregnancy, these treatments can be delivered as 12-16 antenatal care visits. The goal of antenatal care is to help a woman approach pregnancy and birth as positive experiences by preventing, identifying, and treating conditions that may threaten the health of the fetus/newborn and/or the mother (Tsegaye & Ayalew, 2020).

Non-use of antenatal and delivery care facilities is strongly linked to maternal complications and poor perinatal outcomes. Unbooked pregnant women have worse results than booked pregnant women, ANC programmes assist pregnant

women by detecting pregnancy-related conditions or illnesses that could have a negative impact on the pregnancy. Women receive a variety of therapies during antenatal appointments, including advice on safe diets, iron/folic acid supplements, and tetanus toxoid vaccination (Fagbamigbe & Idemudia, 2017).

New technology must be introduced on a regular basis, and older services must be reconsidered. Each pregnant woman's care must be tailored to her specific needs and preferences. Antenatal care begins with pregnancy planning and continues through the neonatal and postpartum periods, it is widely accepted by health providers that it starts with a pregnant woman's first appointment for antenatal treatment and lasts until she gives birth (Tekelab, Chojenta et al., 2019).

The antenatal care for pregnant woman include (12-16) visits to health-care facilities, as well as provider visits to her home. The first visit usually consists of a thorough social, family, medical, and obstetric background, a thorough physical examination, and a risk assessment, which may include a variety of laboratory tests. Easier exams are performed on subsequent visits, but some examinations are still performed on any visit. Exams later in pregnancy are focused on the developing fetus's health and the planning for a healthy delivery (John, Binu et al., 2019).

The recommendations for routine ANC treatment are established by (WHO, 2016), guidelines for handling of pregnancy-related risks. Good clinical practices, according to the WHO, include routine screening for hypertensive diseases in pregnancy by daily blood pressure measurement, testing for

foetal heart rhythms, and advice on birth preparation and postpartum family planning (Ali, Sultana et al., 2018).

The safe motherhood initiative strongly emphasized ensuring the accessibility and use of antenatal services as most of the deaths occurring from obstetric complications are preventable. Though antenatal care service utilization is very essential for improvement of maternal and child health, the use of the service is still very limited in developing world. World Health Organization (WHO) recommends a four-visit ANC schedule for low risk pregnancies. During these visits, the components of antenatal care include iron supplementation, blood and urine tests, at least two Tetanus Toxoid (TT) injections, blood pressure measurement, intestinal parasite drugs, and health education related to pregnancy and detection of the problems that make the pregnancy high risk one (WHO, 2016).

Community health nurse (CHN) is capable of providing a wide range of programmers and events, including basic health care, health education, and encouraging the use of facility-based healthcare services. By offering a range of interventions, such as home-based malaria care, food safety education, and promotion of exclusive breastfeeding, CHN programmes can be effective in reducing maternal and child mortality in low-income settings (Yeneneh, Alemu et al., 2018).

Significance of the study:

In Egypt, the maternal mortality rate has been reduced to <50/100,000 live births in 2015 but still stationary over 10 years (El-Agwany, 2021). According to Millennium Development Goals, 2015, some Egyptian Governorates have high rates of MMR, that is 60–65 deaths per 100 000 live births in Assiut, Gharbia, Beni Suef, Qena, and Sohag, whereas others have low rates of MMR „24–37 deaths per 100 000 live births“ in New Valley, Ismailia, Suez, and Port Said (Mahmoud & Omar, 2018).

Also El-Agwany, (2021), who studied "Severe maternal outcomes: World health organization maternal near-miss and maternal mortality criteria in University Tertiary Hospital Egypt" reported that During the 24-month study period, there were 28,877 deliveries, 185 women suffered maternal complication: 171 maternal near-miss and 14 deaths. severe maternal outcome ratio is 6.5/1000 live birth, maternal near-miss incidence ratio of 5.9/1000 live births, maternal death incidence ratio 0.5/1000 live birth, maternal mortality ratio of 48.48/100,000 live births, maternal near-miss mortality ratio is 12:1, and a mortality index of 7.5%.

Aim of the study

The aim of the current study was to assess concern of pregnant women regarding benefits of utilizing antenatal care in selected Maternal & Child Health Centers at Minia City.

Research Questions:

The study will answer the following questions:

- 1- What pregnant women's level of knowledge regarding the benefits of utilizing antenatal?
- 2- What pregnant women's attitude towards the use of antenatal care utilization?
- 3- What pregnant women's practices towards the use of antenatal care utilization?
- 4- Are there a relation between socio demographic data of women & their level of knowledge, attitude and

practices regarding benefits of utilizing antenatal care?

Subjects and methods

Research design:

A descriptive cross-sectional research design used in this study.

Setting

The research was carried out in four MCH centers at Minia city (Minia Eastern Health Center, Minia Western Health Center, Minia first and second Health Care Center). These centers were selected randomly. These centers provide a variety of programs, including mandatory vaccinations, family planning, antenatal and postnatal care, and antenatal and postnatal care for women who visit MCH centers for family planning and antenatal care.

Sample: Purposive sample was used (Every health center was chosen based on the estimated number of women seen during the data gathering). All pregnant women attended for antenatal care in selected health centers. Sample size was determined as number of all pregnant women visiting maternal and child health at selected centers (No. of pregnant women visited each MCH center during six (6) months. The total number of the women was 285 who had included in the study for each center as follow:-

Setting	No of pregnant women.
Minia Eastern Health Center	80 women
Minia Western Health Center	100 women
Minia first Health Center	35 women
Minia second Health Center	70 women

Inclusion criteria:

All Pregnant women (primi gravida, multigravida) who had at least one previous ANC visit during their current pregnancy in 3rd trimester.

Exclusion Criteria:

- pregnant women with complication as (gestational diabetes, preeclampsia, preterm labor, miscarriage, anemia, infections)

Tools:

Tool I: interviewing Questionnaire:-

Tools for data collection was consisted of four tools:

The first tool: Structured interview questionnaire was developed by the investigator to collect data related to;

- **Part (1):-** Included eight (8) questions, it was involved with the socio-demographic features of the women who were being examined and encompass item such as (age, education, occupation residence, income, living condition and type of family), with response multiple choice.
- **Part (2):** It included eleven (11) questions, to assess the present and past obstetric history of the studied women and women's health care service utilization, such as: (How many times have you been pregnant, how many children do you haveetc.

The second tool: To assess knowledge on antenatal care among women which is composed of twenty five (25) open-ended questions related to: (Do pregnant women need to go

for an antenatal check-up? If yes is it required to go for antenatal care even if there is no complication during pregnancy?.....etc.). With response (Yes, No).

Scoring system:-

The total optimal score = thirty one (25) points, this score ranged between zero (0) for incorrect responses, one (1) for correct responses and represent 100% for all items for every question which categorized into two levels as unsatisfactory level

(less than 60%) and satisfactory level 60-100%.

Third tool: To determine attitudes towards antenatal care among women who attend ANC services at a specific health centers it includes thirteen (13) questions, with response strongly agree, agree and Disagree are three option by using a Likert scale (Fantanesh and Desalegn, 2015).

Scoring system:-

The total score are equal 26 point, which distributed as following strongly agree scored as (2 mark), agree equal (1mark) while disagreeing response equal as (Zero mark). - Scores > (14) (60%) was classified as positive attitude Scores ≤ (14) (60%) was classified as negative attitude.

Fourth tool: it includes sixteen (16) questions, to assess Practices towards antenatal care among women, such as: (registration, Examination, Fetal examinationetc.) With response done or not done.

Scoring system:-

The total optimal score= sixteen (16) this score ranged between zero (0) for not done, one (1) for done practices and represent 100% for all items for every question which categorized into two levels as poor practices level for 0- 60%, and good practices level 60-100%.

The Validity of the Tool:

The tool was submitted to a jury of five experts in the field of community health from the faculty of nursing at Minia Universities. Tool content validity was done to identify the degree to which tools are supposed to be measured. The tools were examined for content coverage, the sequence of items, clarity, relevance, applicability, wording, length, format, and overall appearance. Some modifications were done.

Reliability of the Tool:

The Reliability of the tool was performed to confirm the consistency of the tool. The internal consistency measured to identify the extent to which the items of the tool measured what it was intended to measure. The internal consistency of the tool was assessed with the Cronbach's alpha coefficient. Cronbach's alpha coefficient of 0.00 indicates no reliability and a coefficient of 1.00 indicates perfect reliability.

Pilot Study:-

Before starting to collect the data, a pilot study was carried out on (10%) of sample to test the applicability of the questionnaire and excluded from the study, and to identify the most suitable time to collect data. The results of the pilot

study were not included in the study results because some changes were applied to the questionnaire to clarify some questions.

Data Collection Procedure:-

- Before beginning data collection, the Dean of the Faculty of Nursing at Minia University sent an official letter to the head manager of MCH Centers in Minia, requesting permission to gather information.
- Objectives, aim of the research were clarified to the MCH centers managers to gain their cooperation and to allow meeting with women.
- The investigator attended to the MCH center and give sessions to explain the aim and nature of study and how to fulfill this questionnaire briefly through direct personal communication, verbal agreement was obtained from respondents before they were allowed to take part in the research.
- Investigator was visited the MCH centers four days/week (Saturday, Sunday, Tuesday, Thursday,) at the official time from 8 Am: 12 Pm, and she filled out a number of five to six questionnaires per day. The questionnaires were filled by the women who are able to read and write and the investigator help them, and the investigator fills the questionnaire for women who were unable to read and write.
- The questionnaire had taken time from 25 to 30 minutes according to women's tolerance and every woman was allowed to ask any question to clear any misunderstanding. The investigator stayed with women's during fulfilling the questionnaires and remind with women to answer all questions that present in questionnaires.
- The data was gathered over a six-month period, starting in in the first of August 2020 and ending in January 2021.

Ethical Consideration:

The women were informed that their participation in the study was completely voluntary and there was no harm if they not participated in the study. Oral consent was taken to be included in the study subject, explanation about the study was done to the women included the aim of the study and the potential benefits. The participant was informed about the withdrawal procedures if they decided to leave the study at any time before and during the completion of data collection. Confidentiality of data, privacy, identity, voluntary participation, and the right to refuse to participate in the study was emphasized to subjects.

Statistical Analysis

Data were analyzed using the statistical package for social science (SPSS) version 20. Numerical data were expressed as mean and SD. Quantitative data were expressed as frequency and percentage. Relations between different numerical variables were tested using the using chi square test. Person's correlation was used. A statistically significant level was considered when the p-value was less than 0.05.

Results
Table (1); Distribution of Study Sample Regarding their Socio Demographic Characteristics (n=285)

Demographic Characteristics	N	%
Age		
Less than 20 yrs	96	33.6
20-30 yrs	147	51.5
More than 30 yrs	42	14.9
Mean ± SD = 19.8 ± 12.4		
Education		
Illiterate	66	23.1
Read and write	64	22.5
Primary education	18	6.3
Secondary	94	33.0
University	43	15.1
Occupation		
House wife	238	83.5
Employed	45	15.8
Student	2	0.7
place of residence:		
Urban	275	96.5
Rural	10	3.5
Income		
Enough	168	58.9
Not enough	117	41.1
Type of family: (with whom do you live ?)		
Nuclear family	225	80.0
Single parent family	24	8.4
Childless family (without children)	18	6.3
Extended family-	18	6.3
In the past three months have you seen, read or hear anything about importance of attending Antenatal care at health facility .		
-Yes	187	65.6
-No	98	34.4
Did your husband support you in attending Antenatal care :		
Yes	213	74.7
NO	72	25.3

Table (1) shows that, 51.5% of the study sample their age ranged from 20-30 years, 14.9% their age more than 30 years old with a mean age Mean ± SD = 19.8 ± 12.4. Regarding their education 33% of secondary school, 22.5% are able to read and write, and 3.6% of primary school. In addition 83.5% are house wives, 15.8% are employees and 0.7% is students. Also 96.5 of study sample are from urban, 3.5% from rural, 58.9% their income are enough but 41.1% their income is not enough. Regarding their living condition 80% of sample have nuclear family, 3.6% lived in extended family and 65.6% of study sample hear about importance of attending antenatal care at health facility. in addition 74.7% of sample receive support from husband in attending antenatal care.

Table (2): Distribution of Study Sample Regarding Their Obstetric Information (n=285)

Obstetric Information	N	%
Gravidity		
-Frist	138	48.4
-Second	102	35.8
-Third	33	11.6
-More than third	12	4.2
.How many children do you have?		
-One	191	67.1
-Two	76	23.5
-Three	21	7.4
-More	6	2.1
.How many years between your deliveries in average?		
- ≤ 2 years	206	72.3
- > 2 years	79	27.7
-Age of women at the first delivery		
-18-24 y	225	79.0
-25-30	54	18.9
-> 30yrs	6	2.1
what gestational age was your first visit?		
-Within12 weeks	179	62.8
-Within 24 week	88	30.9
- Within 36 weeks	18	6.3

Table (2) shows that, 48.4% of study subject's had first pregnancy, 35.8% had second pregnancies and 4.2% had more than three pregnancies. Regarding their Number of children 67.1% have one child, 23.5% have two children and 4.7% have three children. Regarding average years between deliveries 72.3% of study sample have ≤ 2 years and 27.7% have > 2 years. Regarding age at the first delivery 79% of study sample has 18-24 years, 18.9% have 25-30 years old and 62.8% first visit within 12 weeks but 30.9% the first visit within 24 weeks.

Table (3); Distribution of Study Sample Regarding Their Information Given During Antenatal Visit (n=285)

Antenatal Information	N	%
During your antenatal visit or delivery at health institution, did the health professional informed about the following points		
Importance of antenatal check-up for pregnant women		
-yes	240	84.2
-NO	45	15.8
-When to start antenatal check-up		
-Yes	246	86.3
-No	39	13.7
-What is the importance of human immune deficiency virus (HIV) test		
-yes	152	53.3
-No	133	46.7
-What is the danger signs of pregnancy		
-Yes	239	83.9
-No	46	16.1
-What is the exclusive of breast feeding		
-yes	257	90.2
-No	28	9.8
place of last delivery		
-Home	102	35.8
-Health center	4	1.4
-Hospital	127	44.6
-Others	52	18.2

Table (3) shows that, 84.2%, 86.3%, 53.3%, 83.9 and 90.2 respectively of study subjects during antenatal visits the health professional informed them about the following points -Importance of antenatal check-up for pregnant women, when to start antenatal check-up, the importance of HIV test, the danger signs of pregnancy and exclusive of breast feeding babies. Regarding place of last delivery 35.8% of study subjects delivered at home, 44.6% delivered at hospital, and 1.4% delivered at health centers.

Table (4): Distribution of Study Sample Regarding Their Total Knowledge Score About Antenatal Care Services (n=285).

- Total Knowledge	No	%
Satisfactory	264	92.7
Un satisfactory	21	7.3
Mean±SD	22.3±3.8	

Table (4): illustrates that 92.7% of study subjects have satisfactory knowledge score but 7.3% of study subjects have unsatisfactory knowledge scores about antenatal care services.

Table (5): Distribution Of Study Sample Regarding Their Total Attitudes Score About Antenatal Care Services (n=285).

- Total Attitudes	No	%
Positive	261	91.5
Negative	24	8.5
Mean±SD	20.7±4.6	

Table (5): illustrates that 91.5% of study subjects have positive attitudes but 8.5% of study subjects have negative attitudes about antenatal care services.

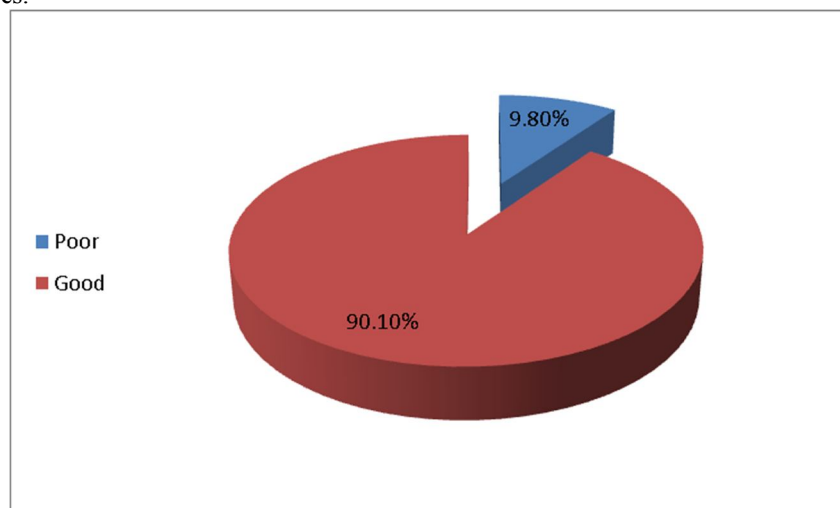


Figure (1): Distribution of Study Sample regarding their total Practices score about Antenatal Care services (n=285).

Figure (1): illustrates that 90.1% of study subjects have good practices scores but 9.8% of study subjects have poor practices scores about antenatal care services.

Table (6): Relation between Total Knowledge level of Study Sample and Their Selected Socio- Demographic Variables (n=285).

Variables	Satisfactor y		Un satisfactory		Chi	P-Value
	N	%	N	%		
Age					684.5	0.002
• Less than 20 years	82	28.7	14	4.9		
• 20-30 years	111	38.9	36	12.7		
• More than 30 yrs	32	11.3	10	3.5		
Education					167.8	0.001
• Illiterate	55	19.3	11	3.8		
• Read and write	58	20.3	6	2.3		
• Primary education	14	4.9	4	1.5		
• Secondary	94	32.9	0	00.0		
• University	22	7.7	21	7.3		

Significant at (p-value <0.01)

Table (6): points statistically significant relationship between knowledge score and age and education p value 0.002 and 0.001 respectively.

Table (7): Relation between Practices of Study Sample and Their Selected Socio- Demographic Variables (n=285).

Variables	Good		Poor		Chi	P
	N	%	N	%		
Age					550.3	0.004
• Less than 20 yrs	78	27.3	18	6.3		
• 20-30 yrs	139	48.7	8	2.8		
• More than 30 yrs	40	14.0	2	0.7		
Education					103.3	0.001
• Illiterate	53	18.5	13	4.5		
• Read and write	57	20.0	7	2.5		
• Primary education	16	5.6	2	0.8		
• Secondary	88	30.9	6	2.2		
• University0	43	15.0	0	00.0		

significant at (p-value <0.01)

Table (7): points statistically significant relationship between practices score and age and education p value 0.004 and 0.001 respectively.

Table (8): Relation between Attitudes Of Study Sample And Their Selected Socio- Demographic Variables (n=285).

Variables	Positive		Negative		Chi	P
	N	%	N	%		
Age					975.5	0.001
• Less than 20 yrs	71	24.9	25	8.7		
• 20-30 yrs	135	47.3	12	4.2		
• More than 30 yrs	42	14.7	00	00.0		
Education					290.2	0.001
• Illiterate	54	18.9	12	4.3		
• Read and write	60	21.0	4	1.4		
• Primary education	14	4.9	0	00.0		
• Secondary	94	32.9	6	2.2		
• University	37	12.9				

significant at (p-value <0.01)

Table (8): points statistically significant relationship between attitudes score and age and education p value 0.001 and 0.001 respectively.

Table (9) Correlations between knowledge, attitudes and practices of study sample About Antenatal Care Services (n=285).

Variables	Knowledge	Attitudes	Practices
Knowledge			
- r.value	-	.365**	.558**
- P.value	-	.001	.001
Attitudes			
- r.value	.365**	-	.485**
- P.value	.001	-	.001
Practices			
- r.value	.558**	.485**	-
- P.value	.001	.001	-

Table (9) shows that correlations between knowledge, attitudes and practices of study sample, have highly statistically significant correlation.

Discussion

The aim of the current study was to assess concern of pregnant women regarding benefits of utilizing antenatal care in selected Maternal & Child Health Centers at Minia City.

Pregnancy is a special event, and the family and the community should treat a pregnant woman with particular care. Knowledge and awareness among pregnant women are important factors that can affect the acceptance and utilization of health services. Antenatal care (ANC) services are considered to be the key element in the primary health care delivery system. Appropriate knowledge and attitude is vital in ensuring sustainable acceptance of antenatal services (Ali, Sultana et al., 2020).

Regarding the socio demographic characteristics of the studied women, the present study showed that, more than half of studied sample their age ranged from 20-30 years, with a mean age Mean \pm SD = 19.8 \pm 12.4, one third of them had secondary school and more than fifth able to read and write, the most of them worked as house wife and the majority of them live in urban region. As regarding income more than half of them had enough income. Also the majority of them had nuclear family. The current result may be related to that the age of 20:30 years is the main reproductive age.

This result comes in the line with (Othman, Abubaker et al.; 2017) who studied "factors affecting utilization of antenatal care services in Sana'a city, Yemen" and reported that The majority (82.1%) of the mothers were between 20- 34 years old. Also the most of the studied sample that 75.3% are literate and 24.7% are illiterate. Among literate mothers, 35 % of the mothers were able to read and write. Around one third of sample (32.6%) was resident Al-Sabeen district and most of the participants (95.9 %) were house wives.

Also this result come in agree with (Mphake, 2017) who studied " Factors influencing utilization of Antenatal care among women of childbearing age in Zimbabwe " and reported that In terms of the age of the respondents it was observed that the highest proportion of the women that used ANC were aged between 25-34 years.

But this result come inconsistent with (Aung, 2020) who studied "Utilization of Antenatal Care Services in Myanmar: A Case Study at A Public Hospital in South Okkalapa Township, Yangon" and stated that The mean age of the respondents was 30.21 years (SD = 7.9). But the same author agree with the current study in reporting that the majority of respondents' education level were in secondary (69%), unemployed (40%) for women, the majority of them had enough income.

Also the current study revealed that slightly less than two third of the studied sample had hear about importance of attending antenatal care at health facility and the most of them received support from husband in attending antenatal care. This result was confirmed with (M-Marzouk, Hewiada et al.; 2018) who reported that the most of the studied sample had hear about antenatal care. More this result come in the line with (Othman, Abubaker et al., 2017) who reported that the most of the studied sample had heard about importance of attending antenatal care.

Regarding women obstetric information, the current study showed that, slightly less than half of the studied subject's had first pregnancy. Regarding their Number of children more than two third of the studied sample had one child. Regarding average years between deliveries the most of

the studied of study sample had \leq 2 years. Regarding age at the first delivery the most of them had 18-24 years. This may be due to that the marriage age of the Egyptian women was starting 18 years old.

This result come in the line with (Joseph et al.; 2017) who reported that more than two fifth 43% of the studied sample had the first pregnancy, the most of them had on child and the majority of them had their first delivery at 18-24 years. But this result contraindicated with (Dayna & Chaudhary, 2020) who stated that the majority of the studied sample 83.4% were multigravida.

Regarding women knowledge about information that given during antenatal visit, the present study showed that, the majority of the studied sample had good knowledge about the information that given during antenatal visit. This may be due to that the studied women were compline to antenatal care so they had good information about these services. This result come in accordance with (Tekelab, Chojenta et al.; 2019) who studied " Factors affecting utilization of antenatal care in Ethiopia: A systematic review and meta-analysis" and reported that the most of the studied women had worthy back ground about antenatal services. This may be due to that the studied women were compline to antenatal care so they had good information about these services.

Regarding the women total knowledge regarding antenatal care, the current study illustrated that the majority of study subjects have satisfactory knowledge score but 7.3% of study subjects have unsatisfactory knowledge scores about antenatal care services. This result come in accordance with (Ambreen & Shah, 2018), who studied "Assessing knowledge of married women regarding antenatal care" and reported that the most (75.9%) of the participants had good knowledge regarding antenatal care. Also this result was supported by (Afaya, Azongo et al., 2020) who reported that who reported that the highest percentage (85.3%) of pregnant women had a high knowledge score regarding antenatal care. This may be as a result of a recent training initiative emphasizing the importance of prenatal treatment.

Regarding the women total attitudes score about antenatal care services, the current study illustrated that the majority of studied subjects have positive attitudes but 8.5% of study subjects have negative attitudes about antenatal care services. This result come in accordance with (Jibril, Saleh et al., 2018) who studied "Health education intervention on knowledge and accessibility of pregnant women to Antenatal care services in Edu, Kwara state, Nigeria" and reported that the most of the studied sample 69% had positive attitude.

Regarding the women total practices score about antenatal care services, the current study illustrated that the majority of study subjects have good practices scores but 9.8% of study subjects have poor practices scores about antenatal care services. This result come in accordance with (Sharma, Loxton et al., 2018) who mentioned that the most of the studied sample had good practices. In addition this result come in the line with (Lee, Newton et al.; 2018) who stated that more than half of the studied sample had good practices. This result may be related to the previous training courses to the pregnant women about optimized antenatal care utilization.

Regarding the relation between knowledge of studied sample and their selected demographic variables, the current study pointed that a positive statistically significant relationship between knowledge score and age and education

p value 0.001 and 0.001 respectively. This may be due to the higher level of education, the more they will have a good understanding of health problems and health services according to their needs. Besides, good knowledge and higher educational background support pregnant women to search for the information of antenatal care (ANC). This result come in the line with (Mgogo, 2020), who studied "Factors Associated with Antenatal Care Utilization among Women in Nsanje District Malawi" and reported that there were a positive statistically significant relationship between knowledge score and education. This may be due to the high level of education and have a good understanding of health problems and health services according to their needs. Besides, good knowledge and higher educational background support pregnant women to search for the information of ANC.

Also this result was confirmed by (Janakiraman, Yihunie et al.; 2021) who studied "Knowledge, attitude, and practice of antenatal exercises among pregnant women in Ethiopia: A cross-sectional study" and reported that there was significant association between the studied sample knowledge and their socio-demographic data.

Regarding the relation between practices of study sample and their selected demographic variables, the current study pointed that a positive statistically significant relationship between practices score and age and education p value 0.004 and 0.001 respectively. This result was supported by (Akhtar, Hussain et al.; 2018) who reported that there was positive association between the studied sample practices and their qualification. This may be due to the high educational level the good practices of the women.

Regarding the relation between attitudes of study sample and their selected demographic variables, the present study pointed that a positive statistically significant relationship between attitudes score and age and education (p value 0.001 and 0.001 respectively). This result were supported by (Gupta, Shora et al.; 2015) who reported that there were statistical significance deference's between the women attitude toward utilization of antenatal care and their age and education.

Conclusion

- Based on the findings of the present study, it can be concluded that, the majority of study subjects 92.7% have satisfactory knowledge score regarding antenatal care.
- 91.5% of them have positive attitudes about antenatal care services.
- 90.1% of study subjects have good practices scores about antenatal care services.
- Also there was statistically significant relationship between knowledge score and age and education (p value 0.001 and 0.001).
- There was statistically significant relationship between practices score and age and education (p value 0.004 and 0.001) respectively and statistically significant relationship between attitudes score and age and education (p value 0.001 and 0.01).

Recommendations:

1. Acceptability of ANC services, and awareness and use of supplements therapy should be promising implemented in the population.

2. Empowered of women toward the primary level of education should be focused in order to have good maternal health outcome.
3. Health education sessions for pregnant women should be applied and encouraged from the stakeholders at health directorate and health administration.
4. Pregnant women should be offered information based on the current available evidence together with support to enable them to make informed decisions about their care. This information should include where they will be seen and who will undertake their care.

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