Factors Affecting Health Seeking Behavior among Pregnant Women in rural Areas

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Abstract

Background The practice of health seeking behavior has many potential effects on reduction of the occurrence of maternal and fetal morbidity and mortality. **The aim** of this study was to explore factors affecting health seeking behavior among pregnant women in rural areas. **Design**: A descriptive exploratory research design was used. **Subjects and method**: The study was carried out at 5 outpatient clinics of obstetric departments in Tanta University Hospital, El-Menshawy General Hospital, El-Mabara Hospital, Sager Maternal and Child Health centers and Rural health unit in Syperpay. A convenience sample of 250 pregnant women, who were living in rural areas were selected from the previously mentioned settings. **Tools:** Four tools were used for collection of data. Tool (I) Structured interview schedule It included Part a Socio-demographic data, part b reproductive history and part c health service characteristics assessment tool. Tool (II) Pregnant women's knowledge regarding antenatal care. Tool (III) Attitudes towards pregnancy scale. Tool (IV) Health seeking behavior assessment tool. **Results**: The majority of studied pregnant women had satisfactory HSB, nearly half of them had moderate level of knowledge regarding ANC also, less than half of them had positive attitudes toward pregnancy. **Conclusion**: In the current study a significant positive relationship was found between HSB among studied pregnant women and pregnant women's knowledge regarding ANC also, women's attitudes towards pregnancy with a statistically significant relationship. **Recommendations**: More researches to determine the factors affecting health seeking behavior should be done in different areas.

Keywords: Health seeking behavior, pregnant women and Rural area.

Introduction

Pregnancy is not only a period of physical and psychological changes but also a period in which women's health related behavior can affect their life and the life of their unborn fetus.[1, 2] The developed countries have made enormous progress in bringing down the huge morbidity and mortality rates associated with pregnancy.[3] From 2000 to 2017, the global maternal mortality rate (MMR) declined by 38% from 342 mortality to 211 Mortality per 100,000 live births. Egypt in2000-2017 has reduced its MMR to 37.00 per 100,000 live births in 2017 compared to 45 per 100,000 in 2010, 52 per 100,000 in 2005 and 64 per 100,000 in 2000. So, Egypt was close to achieving the targets in the Millennium Development Goals five (MDG 5).[4, 5] Three well-known factors or delays increase the risk for maternal mortality. The *three delays model* developed by Thaddeus and Maine is the most common framework used to evaluate the circumstances surrounding a maternal mortality. These are 1) delay in deciding to seek care, 2) delay in

reaching a health care facility 3) delay in receiving care at the health care facility.[6, 7]

Antenatal care (ANC) is one of the most significant factors that affect the development of the fetus and the newborn as well as the mother health.[8] It is the comprehensive health care provided by skilled health care professionals to pregnant women in order to ensure best health conditions for both mother and baby from the time that conception is confirmed until the beginning of labor.[9- 10]

Researchers have long been interested in what facilitates the use of ANC, and what influences women to behave differently in relation to their health.[11- 12] Health seeking behavior (HSB) of pregnant women is the way mothers takes care of their health and that of the unborn baby in order to carry pregnancy to term very healthy with positive outcome. It is drawing out the factors which enable or prevent pregnant women from making 'healthy choices', in either their lifestyle behaviors or their use of medical care and treatment.[13- 15] One of the most regularly cited HSB determinant model is the revised and updated versions of the Andersen and Newman Behavioral Model of health services utilization (ANBM) which was first developed in 1960s and are still frequently used.[16- 17]

According to ANBM individual determinants or factors affecting HSB can be divided into; predisposing, enabling and need factors.[18- 19] *Predisposing factors* refer to individual characteristics which exist prior to the pregnancy and affect the propensity to use ANC. It can be divided into demographic factors, social factors and health benefit and attitudinal beliefs factors.[20- 23] *Enabling factors* which affects HSB reflect the means or logistics required to make ANC available

to pregnant women. It includes family factors and community factors. [24- 27] The last determinants or factors affecting HSB is *need factors.* The pregnancy-need factors include pregnancy related elements explaining the degree of care needed.[18, 28] In the recent years, health promotion programs worldwide had gone a long way towards promoting a change in pregnant women behaviors towards more beneficial of HSB.[29] But owing to the fact that HSB is a multifaceted effect and owning to the difference in pregnant women's behavior on where and when to seek ANC services especially in rural areas.[30] Finding factors affecting HSB of pregnant women in rural areas would help government, stakeholders, policy-makers and health service providers to adequately allocate and manage existing resources, particularly in developing countries. In Egypt, we still need to improve access to maternal health care services and reduce maternal mortality especially among pregnant women living in rural areas with poor HSB.[31]

The aim of this study was to

Explore factors affecting HSB among pregnant women in rural areas.

Research question

What are the factors affecting HSB among pregnant women in rural areas.

Subjects and method

Study Design

A descriptive exploratory research study design was used.

Setting

The study was conducted at outpatient clinics of obstetric departments of 5 settings selected from Tanta city including Tanta University Hospital, El-Menshawy General Hospital affiliated to the Ministry of Health, El-Mabara Hospital affiliated to the Health

Insurance, Sager Maternal and Child Health centers (MCH) and Rural health unit in Syperpay.

Subjects

Convenience sample of **250** pregnant women at third trimester of pregnancy were selected from the previously mentioned settings 50 women from each setting.

Tools of data collection

To achieve the aim of this study the following four tools were used for data collection

Tool (I) Structured interview schedule This tool was developed by the researcher after review of relevant literatures to collect basic data about the study subjects. It included **3 parts** as follows

-**Part (1) Socio-demographic data of the subjects**

This part was used to collect data about age, age at marriage, current marital status, religion, women's education, husband's education, women's occupation, husband's occupation, duration of marriage, total family members, type of family, and family's income.

-Part (2) Reproductive history of the subjects

It was used to collect data about gravidity, parity, number of abortions, number of living children, history of still birth, history of losing children, duration of current pregnancy (gestational weeks), birth order, current pregnancy by IVF, presence of obstetrical complications in previous pregnancies, deliveries and puerperium, mode and place of previous delivery, attendance of antenatal care follow-up during the current pregnancy, time of the first ANC visit during current pregnancy, reasons of initiating of antenatal care ,place of

antenatal care, sequence of follow-up visits , supportive person during antenatal care and attendance antenatal care classes.

-**Part (3) Health service characteristics assessment tool**

This part was used to collect data about accessibility to health facilities for follow up during current pregnancy, availability of screening for risk factors during current pregnancy, pregnant women's satisfaction with the attitude of health workers, affordability of medical care cost and pregnant women's satisfaction with the services provided.

Tool (II) Pregnant women's knowledge regarding antenatal care

This tool was used to collect data about pregnant women's knowledge regarding antenatal care including definition of ANC, pregnant women's need to go for antenatal check-up, the need to go for ANC even if there is no complication during pregnancy, should first antenatal check-up be done in the first trimester, immunization that should be taken during pregnancy, the need for vitamin supplement and iron folic acid tablet during pregnancy, physical examinations that should be done during first antenatal visit, physical examinations that should be done during subsequent antenatal follow-up visits, lab investigations that should be done during first antenatal visit, lab investigations that should be done during subsequent antenatal follow-up visits and necessity of regular blood pressure examination during pregnancy and the effect of high blood pressure on woman and her fetus health. [8]

The scoring system was as follow

- Correct answers were given score (1).
- Incorrect answers were given score (0).

The total score level was calculated as follows

- High level of knowledge >70% of total score =(9-11)
- Moderate level of knowledge 50% -70% of total score =(6-8)
- Low level of knowledge < 50% of total score =(1-5)

Tool (III) Attitudes towards pregnancy scale

This tool was adapted from The Maternal Adjustment and Maternal Attitude Questionnaire (MAMA) by Kumar et al. (1984) [32]. It was used to assess prenatal attitudes of women towards pregnancy. It included the following items planning and feeling happy towards this pregnancy, prefer specific type of baby sex, thought of wearing maternity clothes appealed to you, thought of having several children appealed to you, looking forward to caring for your baby's needs, thought of breast-feeding your baby - appealed to you, feeling that life will be more - difficult after the baby is born, worrying that you might not be a good mother, worrying about hurting your baby inside you, worrying that you may not have any time to yourself once your baby was born and wondering whether your baby will be healthy and normal.

The scoring system for the Attitudes towards Pregnancy was as follows

-Each question was rated on 4 point scale, where 1 means never, 2 means rarely, 3 means often and 4 means very often.

The total score for the Attitudes towards Pregnancy was calculated as follows

- Positive attitude towards pregnancy ≥60% = (31-44)
- Negative attitude towards pregnancy <60% = (11-30)

Tool (IV) Health Seeking Behavior assessment tool

This tool included 11 closed and open ended questions. It was used to assess HSB among pregnant women. It included the following questions went for antenatal checkup as soon as she knew that she is pregnant, place of antenatal care, first antenatal care visit during current pregnancy, number of antenatal care visit during current pregnancy, pay attention with the problems that may be associated with the pregnancy, presence of health problem related to the current pregnancy encourage for seeking health care, perform heavy workload during current pregnancy, responsible person for decision making on where to go and seek for health care, preferred health care setting, preferred health care provider and sources of health information during current pregnancy.

The scoring system was as follow

Correct answers were given score (2).

Incorrect answers were given score (1).

The total score was calculated as follows

- Satisfactory HSB ≥60% of total score = (18-22).
- Unsatisfactory HSB <60% of total score = (11-17).

Method

The study was implemented according to the following steps-

1. An official permission was obtained from the Faculty of Nursing directed to the responsible authorities of the selected settings clarifying the purpose of the study.

2. Ethical and legal consideration was considered all over the study as the following

   a) Approval of the ethical committee was assured.

b) The researcher introduced herself to the participants, a full explanation of the aim and method of the study was done to obtain their acceptance and cooperation as well as their informed consent.

c) The right of women to abstain or terminate participation at any time was respected.

d) The nature of the study didn't cause any harm or pain for the entire sample.

e) The women were assured about the privacy and confidentiality of collected data and that it was used for the study purpose only.

3. The study tools were developed by the researcher based on literature review, translated into Arabic and then tested for face and content validity by jury of five experts in the field of Obstetrics and Gynecological Nursing before conducting the study.

4. Pilot study was conducted on 25 women (10%) of the total study subjects and it was conducted one month before data collection. These subjects were excluded from the total study subjects. Based on finding of the pilot study; the necessary modifications was made on the study tools.

5. Suitable statistics test was done to test for tools reliability.

6. Results of the pilot study revealed that the statements were clear and relevant.

7. The data was collected through a structured interview schedule using the study tools and was applied individually for each woman attending outpatient clinics of obstetric departments for antenatal follow-up.

8. The researcher introduced herself to the women and the interview schedule sheet was conducted individually for each participant to collect the required data through interviewing the women regarding

- (Tool I part 1, 2 and 3)Socio-demographic, reproductive history and health service characteristics.
- (Tool II) Pregnant women's knowledge regarding antenatal care.
- (Tool III) Attitudes towards pregnancy scale
- (Tool IV) HSB assessment tool.

9. Filling the interview schedule sheet needed approximately from 15-20 minutes.

10. The collected data were organized, tabulated and statistically analyzed using SPSS software (Statistical Package for the Social Sciences, version 21, SPSS Inc. Chicago, IL, USA).

Results

Figure (1) illustrates the total score of the studied pregnant women's knowledge regarding antenatal care. It was observed that almost half (50.4%) of women had moderate level of knowledge regarding ANC and (29.6%) of women had low level of knowledge regarding ANC while, only one fifths (20.0%) of them had high level of knowledge regarding ANC.

Figure (2) represents the distribution of the studied pregnant women according to the total score of their attitudes towards pregnancy. It was observed that more than half (54.8%) of women had negative attitudes towards pregnancy also, less than half (45.2%) of women had positive attitudes towards pregnancy.

Figure (3) represents the total score of HSB assessment among the studied pregnant women. It was observed that the majority of

women (84.4%) had satisfactory HSB while, (15.6%) of them had unsatisfactory HSB.

Table (1) reveals the relationship between total score of HSB assessment, total score of knowledge regarding ANC and total score of attitudes towards pregnancy among the studied pregnant women. It was observed that less than two thirds (63.5%) of women who had low level of knowledge had satisfactory HSB while, the vast majority of women (98.0) who had high level of knowledge had satisfactory HSB. There was significant positive relationship between total score of HSB assessment and total score of knowledge regarding ANC. It was observed that slightly more than three quarters (75.9%) of women who had negative attitudes towards pregnancy had satisfactory HSB and the vast majority of women (94.7%) who had positive attitudes towards pregnancy had satisfactory HSB. Also, there was significant positive relation between total score of HSB assessment and total score of attitudes towards pregnancy.

Table (2) shows the correlation between total score of HSB assessment, total score of knowledge regarding ANC as well as total score of attitudes towards pregnancy among the studied pregnant women. There was significant positive correlation between total HSB score and total knowledge regarding ANC score (P=0.0001). Also, there was significant positive correlation between total HSB score and total attitudes towards pregnancy score (P=0.0001). In addition, there was significant positive correlation between total knowledge regarding ANC score and total attitudes towards pregnancy score (P=0.015).

Table (3) reveals the total score of HSB among the studied pregnant women in relation to their socio-demographic data. It was observed that there was significant relationship between total score level of HSB and the following socio-demographic characteristics; age, age at marriage, women educational level, husband's education level, women occupation, husband's occupation, duration of marriage, and total family members.

Table (4) shows the total score of HSB among the studied pregnant women in relation to their reproductive history. There was significant relationship between total score level of HSB and the following reproductive history; number of previous pregnancies, number of previous delivery, number of living children, birth order, experience of complication during previous puerperium, the mode of previous delivery, attendance of ANC follow-up during the current pregnancy, the number of ANC follow-up visits during the current pregnancy, the first ANC visit during current pregnancy, cause of first ANC visits during current pregnancy, place of ANC, sequence of follow-up visits and supportive person during ANC visit.

Table (5) shows the total score of HSB among the studied pregnant women in relation to health service characteristics. There was significant relationship between total score level of HSB and the following health service characteristics; accessibility to the health care facilities, satisfied with the availability of screening for risk factors during current pregnancy, satisfied with the attitude of health care providers, affordability of medical care cost during current pregnancy and satisfied with the services provided.
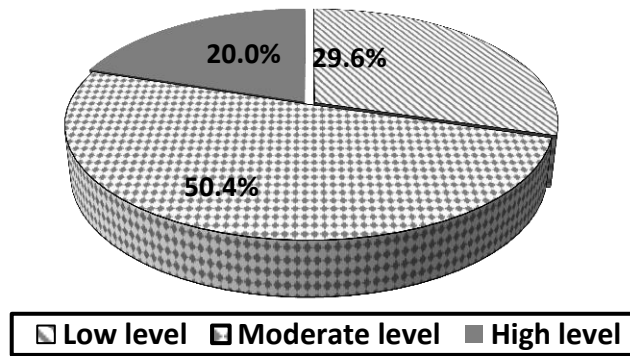
Figure (1) Total score of the studied pregnant women's knowledge regarding antenatal care (n=250).
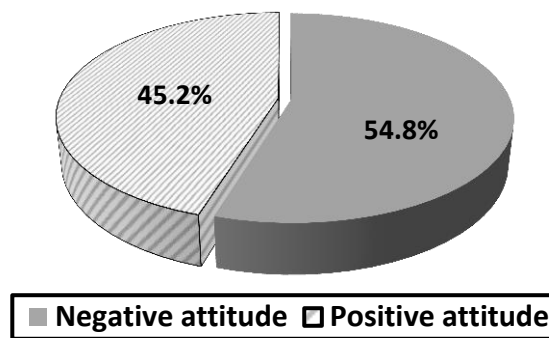

Figure (2) Total score of the studied pregnant women regarding their attitudes towards pregnancy (n=250).

Figure (3) Total score of health seeking behavior assessment among the studied pregnant women (n=250).

Table (1) Relationship between total score of health seeking behavior assessment, total score of knowledge regarding antenatal care and total score of attitudes towards pregnancy among the studied pregnant women (n=250).

Variables	Total score of HSB assessment among the studied pregnant women (n=250)				χ^2 P
	Unsatisfactory (n=39)		Satisfactory (n=211)		
	n	%	n	%	
Total score of knowledge regarding antenatal care					
Low level (n=74)	27	36.5	47	63.5	36.059
Moderate level (n=126)	11	8.7	115	91.3	0.0001*
High level (n=50)	1	2.0	49	98.0	
Total score of attitudes towards pregnancy					
Negative attitudes (n=137)	33	24.1	104	75.9	16.584
Positive attitudes (n=113)	6	5.3	107	94.7	0.001*

 *Significant (P<0.05)

Table (2) Correlation between total score of health seeking behavior assessment, total score of knowledge regarding antenatal care as well as total score of attitudes towards pregnancy among the studied pregnant women (n=250).

Variables	Total score of the studied pregnant women (n=250)			
	Total health seeking behavior score		Total knowledge score	
	R	P	r	P
Total knowledge score	**0.481**	**0.0001***		
Total attitudes score	**0.542**	**0.0001***	**0.153**	**0.015***

*Significant (P<0.05)

r=Pearson's correlation coefficient

Table (3) Total score of health seeking behavior among the studied pregnant women in relation to their socio-demographic data (n=250).

	Total HSB score among the studied pregnant women (n=250)						χ^2 P
	Unsatisfactory (n=39)		Satisfactory (n=211)		Total (n=250)		
	n	%	N	%	n	%	
Age (years)							
18-<25	2	4.8	40	95.2	**42**	**16.8**	19.703
25-<30	7	8.2	78	91.8	**85**	**34.0**	0.0001*
30-<40	23	21.5	84	78.5	**107**	**42.8**	
40-45	7	43.8	9	56.3	**16**	**6.4**	
Age at marriage (years)							
13-<20	29	20.0	116	80.0	**145**	**58.0**	5.076
20-26	10	9.5	95	90.5	**105**	**42.0**	0.024*
Women's education level							
Illiterate	3	60.0	2	40.0	**5**	**2.0**	34.714
Can read and write	10	52.6	9	47.4	**19**	**7.6**	0.0001*
Primary/preparatory	6	11.8	45	88.2	**51**	**20.4**	
Secondary	19	15.1	107	84.9	**126**	**50.4**	
University	1	2.0	48	98.0	**49**	**19.6**	
Husbands' education level							
Illiterate	4	50.0	4	50.0	**8**	**3.2**	26.084
Can read and write	8	40.0	12	60.0	**20**	**8.0**	0.0001*
Primary/preparatory	5	10.6	42	89.4	**47**	**18.8**	
Secondary	21	17.9	96	82.1	**117**	**46.8**	
University	1	1.7	57	98.3	**58**	**23.2**	
Women's occupation							
House wife	39	17.6	183	82.4	**222**	**88.8**	5.828
Employee	0	0	28	100	**28**	**11.2**	0.016*
Husbands' occupation							
Employee	3	4.0	72	96.0	**75**	**30.0**	10.950
Handicraft	36	20.6	139	79.4	**175**	**70.0**	0.001*
Duration of marriage (years)							
1-<15	30	13.2	197	86.8	**227**	**90.8**	10.652
15-26	9	39.1	14	60.9	**23**	**9.2**	0.001*
Total family members							
2-3	0	0	59	100	**59**	**23.6**	14.274
4-5	27	20.5	105	79.5	**132**	**52.8**	0.001*
6 & more	12	20.3	47	79.7	**59**	**23.6**	

 *Significant (P <0.05)

Table (4) Total score of health seeking behavior among the studied pregnant women in relation to their reproductive history (n=250).

Reproductive history	Total score of HSB among the studied pregnant women (n=250)						χ^2 P
	Unsatisfactory (n=39)		Satisfactory (n=211)		Total (n=250)		
	n	%	N	%	n	%	
Gravidity							
Primigravida	4	10.0	36	90.0	**40**	**16.0**	26.228
1-2	4	4.5	84	95.5	**88**	**35.2**	0.0001*
3-4	21	21.0	79	79.0	**100**	**40.0**	
5-6	10	45.5	12	54.5	**22**	**8.8**	
Parity							
Primipara (no previous delivery)	6	6.1	93	93.9	**99**	**39.6**	45.167
1 – 2	5	6.1	77	93.9	**82**	**32.8**	0.0001*
3 – 4	28	40.6	41	59.4	**69**	**27.6**	
Number of living children							
No children	3	5.0	57	95.0	**60**	**24.0**	33.927
1-2	13	9.8	119	90.2	**132**	**52.8**	0.0001*
3- 4	23	39.7	35	60.3	**58**	**23.2**	
Birth order							
1-2	3	5.0	57	95.0	**60**	**24.0**	33.927
3-4	13	9.8	119	90.2	**132**	**52.8**	0.0001*
5 & more	23	39.7	35	60.3	**58**	**23.2**	
Presence of complications during previous puerperium	(n=33)		(n=118)		**(n=151)**		
No	26	18.6	114	81.4	**140**	**92.7**	12.128
Yes	7	63.6	4	36.4	**11**	**7.3**	0.0001*
Mode of previous delivery	(n=33)		(n=118)		**(n=151)**		
Normal delivery	27	39.1	42	60.9	**69**	**45.7**	22.206
Cesarean section	6	7.3	76	92.7	**82**	**54.3**	0.0001*
Attendance of previous antenatal care follow-up during the current pregnancy	(n=39)		(n=211)		**(n=250)**		
No	4	44.4	5	55.6	**9**	**3.6**	5.900
Yes	35	14.5	206	85.5	**241**	**96.4**	0.015*

First ANC visit during current pregnancy							
During first trimester	0	0	197	78.8	**197**	**78.8**	231.293
During second trimester	49	19.6	0	0	**49**	**19.6**	0.0001*
During third trimester	4	1.6	0	0	**4**	**1.6**	
Cause of first ANC visits during current pregnancy							
Follow–up the health status of fetus	0	0	154	61.6	**154**	**61.6**	100.357
Nausea and vomiting	0	0	70	28.0	**70**	**28.0**	0.0001*
Abdominal pain	0	0	17	6.8	**17**	**6.8**	
To determine expected date delivery	9	3.6	0	0	**9**	**3.6**	
Place of antenatal care							
Governmental hospital	0	0	79	31.6	**79**	**31.6**	13.155
Private hospital	0	0	7	2.8	**7**	**2.8**	0.0003*
Private doctor's clinic	0	0	149	59.6	**149**	**59.6**	
MCH centers	0	0	13	5.2	**13**	**5.2**	
**Other	2	0.8	0		**2**	**2.8**	
Sequence of follow-up visits					**(n= 241)**		
More than 6 weeks	123	51.0	0	0	**123**	**51.0**	196.848
Nearly every month	0	0	94	39.0	**94**	**39.0**	0.0001*
Every two weeks or less	0	0	24	10.0	**24**	**10.0**	
#Supportive person during antenatal care visit							
Woman only	35	14.0	0	0	**35**	**14.0**	23.709
Husband	0	0	49	19.6	**49**	**19.6**	0.0001*
Mother in low	0	0	85	34.0	**85**	**34.0**	
Mother	0	0	83	33.2	**83**	**33.2**	
Other	0	0	7	2.8	**7**	**2.8**	

*Significant (P <0.05)

#More than one answer.

Table (5) Total score of health seeking behavior among the studied pregnant women in relation to their health service characteristics (n=250).

Health service characteristics	Total score of health seeking behavior among the studied pregnant women (n=250)						χ^2 P
	Unsatisfactory (n=39)		Satisfactory (n=211)		Total (n=250)		
	N	%	n	%	N	%	
Accessibility to the health care facilities for follow-up							
Not accessible	13	72.2	5	27.8	18	7.2	47.231
Accessible	26	11.2	206	88.8	232	92.8	0.0001*
Availability of screening for risk factors during pregnancy							
No	33	23.3	109	76.8	142	56.8	14.570
Yes	6	5.6	102	94.4	108	43.2	0.0001*
Satisfied with the attitude of health care workers							
No	25	28.1	64	71.9	89	35.6	16.374
Yes	14	8.7	147	91.3	161	64.4	0.0001*
Affordability of medical care cost during current pregnancy							
No	8	66.7	4	33.3	12	4.8	24.966
Yes	31	1.0	207	87.0	238	95.2	0.0001*
Satisfied with the services provided							
No	8	66.7	4	33.3	12	4.8	24.966
Yes	31	1.0	207	87.0	238	95.2	0.0001*

*Significant (P <0.05)

Discussion

During pregnancy proper ANC provides important information and advice to pregnant women and her families to achieve healthy pregnancy, safe childbirth and postnatal recovery.[29] Non utilization or underutilization of ANC services, especially among rural area women are high due to lack of awareness or access to ANC and this calls for understanding the HSB and utilization of services by those in need of them.[28] Therefore this study was conducted to assess factors affecting HSB among pregnant women in rural areas.

Concerning the **total score of knowledge regarding antenatal care of the studied pregnant women,** nearly half of women had

moderate level of knowledge regarding ANC. These findings are supported by **Patel B. et al. (2016)**[33] and **Ogunba B. and Abiodun O. (2017)**[34] who found that more than half of the respondents having a moderate level of knowledge about ANC. In contradict with **Adewoye K. et al. (2013)**[35] findings. They reported that the majority of women in their study were aware of ANC (more than two thirds of women had good knowledge). Also, it disagreed with **Banda C. (2013)**[36] **and Wolde H. et al. (2019)**[37] they observed that nearly three fifth of women had a good level of knowledge.

As regard to the **total score of attitude towards pregnancy** in the present study, less than half of women had positive attitudes towards pregnancy. This finding disagreed with **Moisan C. et al. (2022)**[38] who found that one fifth of their women were having a favorable attitude toward pregnancy. Also, contradict with **Barber J. et al. (2015)**[39] and **Abu Shabana K. et al. (2018)**[40] findings. They found that the majority of studied women had negative attitude toward pregnancy. According to the **total score of HSB assessment**, the majority of women in the current study had satisfactory HSB. These findings are similar with **Metwally A. et al. (2013)**[41] findings of rural women in Egypt**.** Supported by **Almahbashi T. et al. (2017)** [42] findings in Sana'a city, Yemen**.** Also, agreed with **Fenta M. (2005)**[43] findings in Dubti towns, Afar Regional State, North East Ethiopia. Moreover, agreed with **Pathak P. et al. (2017)**[44] and **Pradhan P. et al. (2013)**[45] findings**.**

Regarding the **relationship between total HSB assessment scores and total knowledge scores regarding antenatal care**

in the present study, pregnant women with low level of knowledge were less likely to have satisfactory HSB compared to pregnant women with high knowledge level about ANC. Approximately all women who had high level of knowledge had satisfactory HSB. So, there was significant positive relationship between total HSB assessment scores and total knowledge scores. These findings are supported by **Owusu S. (2021)**[46] findings. Also, **Fenta M. (2005)**[43] reported that the most frequent reasons regarding non- attending of ANC and delivery care services were lack of awareness about ANC and lack of understanding of the nature and the importance of ANC services. Moreover, **Wolde H. et al. (2019)**[37] and **Kadry H. et al. (2014)**[47] who noticed that the level of total knowledge had a significant direct correlation with the antenatal care utilization. Moreover**, Mikaelsdotter C. (2019)**[48] and **Patel B. et al. (2016)**[33] showed a significant association between knowledge of ANC and practice of ANC. While, these findings contradict with **Ogunba B. and Abiodun O. (2017)**[34] found no significant relationship between knowledge and the attendance to antenatal clinic in a study they conducted.

Concerning the relationship between total HSB assessment scores and total attitudes towards pregnancy scores among the studied pregnant women, the majority of women who had positive attitudes toward pregnancy had satisfactory HSB. So, there was significance positive relation between total HSB assessment scores and total attitudes toward pregnancy. These findings agreed with **Ilska M., & Przybyła-Basista H. (2014)**[32] they revealed that the adaptation abilities of women for pregnancy and their

attitudes towards pregnancy can influence both their own wellbeing and the development and health of the child. Negative attitude towards pregnancy and child care is correlated with later health, developmental problems of the child and less HSB. Also, these findings are similar with **Fenta M. (2005)[43]** who revealed that the women attitude towards pregnancy were found to affect maternal health care services utilization. Moreover **Ntambue A. et al. (2012)[49]** mentioned that pregnant women with positive attitude toward pregnancies may probably have more love to such pregnancy and seek proper care for healthy development of their pregnancy.

Regarding correlation between total HSB scores and pregnant women's age, satisfactory HSB was highest among those aged 18-<25 years in the current study. Also, there was significant association between HSB and age. This result strongly supported by **Mathe M. (2014)[50]** who found that young age was likely to influence HSB as they are likely to be exposed to information and education than the older women. While, in contradict with **Wolde F. et al. (2018)[51]** who found that pregnant mother aged 25 years and above were more likely to have a late initiation for ANC follow up than women' age < 25 years old. Also, disagreed with, **Lerebo W. et al. (2015)[52]** who showed that teenagers were more likely to start ANC lately than adults.

Moreover, contradict with **Elshazly H. et al. (2018)[53]** showed that the women age didn't significantly affect the compliance of ANC. Also, in **Dairo M. and Owoyokun K. (2010)[54]** study which was conducted in Nigeria found that women who were 25 years and older were more likely to comply with ANC than women who were 25 years or younger. Furthermore, **Okedo-Alex I. et al. (2019)[55]** reported that maternal age significantly influenced HSB. But they found that older women were more likely to utilize ANC services compared with their younger counterparts.

Regarding correlation between total HSB scores and women educational level, satisfactory behavior was highest among women of university education followed by those of secondary education with statistically significant association in the current study. These findings agreed with **Gidey G. and Abraha D. (2018)[56]** and **Almahbashi T. et al. (2017)[42]** who illustrated that level of education, were found to be associated with early ANC initiation. Moreover, **Wolde F. et al. (2018)[51]** and **Okedo-Alex I. et al. (2019)[55]** reported that there was relationship between maternal education and overall uptake of ANC. These findings are also in line with **Ewunetie A. et al. (2018)[57] and Metwally A. et al. (2013)[41]** who found that level of education affected woman preference for where, how many times and for whom to seek her ANC. While, **Adu J. et al. (2018)[58]** found no statistically significant association between women educational level and HSB. Also, one study in Nigeria by **Oyewale T. and Mavundia T. (2013)[59]** found that more educated women were less likely to use ANC.

Concerning correlation between total HSB scores and husbands' educational level. Satisfactory behavior was highest among those of university education followed by those of secondary education with statistically significant association in the current study. This result agreed with

Gidey.G and Abraha.D (2018)[56] they illustrated that level of husband' education, were found to be associated with early ANC initiation. Also, in the same line with **Elshazly H. et al. (2018)[53]** a study conducted in Tanta District, Gharbia Governorate, Egypt also, in agreement of findings of **Joshi C. et al. (2014)[60]** a study conducted in Nepal and found that the levels of husbands' education increased the level of women getting four or more ANC visits. According to **Bbaale E. (2011)[61]** and **Okedo-Alex I. et al. (2019)[55]** the higher educational status of the husbands, positively associated with attendance to ANC visits.

Regarding correlation between total HSB scores and women occupation, it was observed that satisfactory behavior was highest among employed women with statistically significant associations. This result is supported by **Hajizadeh S. et al. (2016)[62]** and **Okedo-Alex I. et al. (2019)[55]** they reported that occupational status of women is the most common factor affecting the utilization of prenatal care services. Employed women more frequently receive ANC, compared to housewives; in fact, these women are more likely to receive timely ANC services. In contrary **Metwally A. et al. (2013)[41]** and **Almahbashi T. et al. (2017)[42]** found no significant association between working of woman and receiving ANC. Also, disagreed with **Adu J. et al. (2018)[58]** findings.

Concerning correlation between total HSB scores and husbands' occupation satisfactory behavior was highest among employed ones with statistically significant association. This result was supported by **Bbaale E. (2011)[61]** who indicated that husband occupation was significant associated with the frequency of antenatal care visits. Also, agreed with **Okedo-Alex I. et al. (2019)[55]** findings. While, in contrast with **Almahbashi T. et al. (2017)[42]** who reported no significant association between husband occupation and women receiving ANC.

Regarding correlation between total HSB scores and number of previous pregnancies among the studied pregnant women, satisfactory HSB was highest among women who had 1-2 previous pregnancies with statistically significant associations. This result agreed with **Almahbashi T. et al. (2017)[42]** and **Fenta M. (2005)[43]** who found that number of previous pregnancies is an important determinant for utilization of ANC services. While, it contrast with **Banda C. (2013)[36]** who revealed that there was no statistically significant association in the utilization of ANC between the categories of gravidity.

Concerning correlation between total HSB scores and number of previous delivery in the current study, satisfactory HSB was highest among women who didn't have previous delivery and who had 1&2 previous delivery with statistically significant associations. These findings strongly agreed with **Banda C. (2013)[36]** who showed that parity was significantly associated with number of visits to the ANC. Moreover, this corresponds with studies conducted by **Hajizadeh S. et al. (2016)[62]** and **Almahbashi T. et al. (2017)[42]** findings. While, these findings contrast with **Tekelab T. et al. (2019)[63]** and **Ewunetie A. et al (2018)[57]** who found that parity has no association with utilization of ANC.

As regard to the correlation between total HSB scores and accessibility to the health

care facilities, satisfactory HSB was highest among women who had accessibility to the health care facilities, with a statistically significant association. This finding is similar with **Hajizadeh S. et al. (2016)**[62] found a significant association between HSB and accessibility to the health care facilities. Furthermore, agreed with **Ali S. et al. (2018)**[64] and **Okedo-Alex I. et al. (2019)**[55] who mentioned that the increased distance to ANC services negatively impacted the ANC utilization. While, in contradict with **Andrew E. et al. (2014)**[65] who mentioned that the accessibility to ANC health facilities had a limited effect on ANC utilization with no a significant relationship. Also, disagreed with **Ntambue A. et al. (2012)**[49] who reported that the distance was not an obstacle to the utilization of services.

Regarding correlation between total HSB scores and affordability of medical care cost during current pregnancy, satisfactory HSB was highest among women who had afford of medical care cost during current pregnancy with a statistically significant association. This finding agreed with **Adhikari D. and Rijal D. (2015)**[66] who reported that the most common reason for not seeking the health care facility was lack of money for pregnant women. Moreover, similar with **Titaley C. et al. (2010)**[67] they found that the perceived cost of health services emerged as a major issue hindering community members from utilizing antenatal and postnatal care services. Also, the finding of the present study agreed with **Bbaale, E. (2011)**[61] and **Okedo-Alex I. et al. (2019)**[55]'s findings.

Conclusion
A significant relationship was found between studied pregnant women total score

of HSB and socio-demographic characteristics, reproductive history, health service characteristics, total knowledge scores regarding ANC and total attitudes toward pregnancy score.

Recommendations
Based on the results of the study recommended that provision of appropriate and accessible posters and booklets in Arabic language containing basic information regarding antenatal care in all public services providing care for pregnant women.

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