Factors Associated With Late Antenatal Enrolment Among Pregnant Women Aged 15-49 Years At Masindi Hospital

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Abstract

Introduction: *Early ANC attendance is vital for early identification of pregnancy related health risks to either mother or baby or both, and interventions instituted. This results in good delivery outcomes.*

Objective: *The main objective of this study was to assess the factors associated with late antenatal care enrollment among pregnant mothers of 15–49 years at Masindi district hospital.*

Methodology: *Analytical cross-sectional study using quantitative method was used. The study included 380participants. A semi-structured questionnaire was used and SPSS 16.0software was used to analyses the results.*

Results: *The proportion of late enrollment into ANC was 81.1% since they made their first ANC visit after 12 weeks. Late enrolment for ANC was independently associated with being Protestants (AOR-9.043; 95% CI-1.089-90.821; p-0.042), knowledge that the right time for first ANC is after 28 weeks of pregnancy (AOR-3.019; 95% CI-1.001-6.342; p-0.000), knowledge that right time to seek first pregnancy was immediately (AOR-0.007; 95% CI-.001-.093; p-0.007), knowledge on the recommended number of ANC visits as four times(AOR-0.777; 95% CI-294-.890; p-0.001), among others. It was also associated with disagreeing that Antenatal care follow-up is good to monitor mother's and fetus's health (AOR-33.189; 95% CI-2.639-42.419; p-0.019), strongly disagreeing that Antenatal care follow-up is good to monitor mother's and fetus's health (AOR-36.348; 95% CI-4.365-92.711; p-0.009).*

Conclusion: *The general proportion of late enrollment for ANC was high at 81.1% and knowledge of women on ANC, social demographic characterizes attitude and played key role in women attending ANC on time.*
Keywords: *Late ANC Visit, Pregnant women, Sulphadoxinepyremethamine, Attitude, Malaria*

1. INTRODUCTION
1.1 Background of the study

Antenatal care can be defined as the care provided by skilled health-care professionals to pregnant women and adolescent girls in order to ensure the best health conditions for both mother and baby during pregnancy(1). The same author denotes that within the continuum of

reproductive health care, antenatal care (ANC) provides a platform for important health-care functions, including health promotion, screening and diagnosis, and disease prevention. Pregnancy is an important phase in the life of a woman, family and society. During this period, antenatal care plays a crucial role for both mother and her unborn child to ensure good health (2). As one of the four pillars of the Safe Motherhood Initiative , when started early, it is key in improving maternal and new born health hence contributing to the SDG target 3.1 which is: to reduce the global maternal mortality ratio to less than 70 per 100 000 live births by 2030 (3).

Women who attend ANC to have 'positive pregnancy experience which can create the foundations for healthy motherhood'(1). A study (4) revealed that key elements for a positive pregnancy experience include: maintaining physical and socio-cultural normality; maintaining a healthy pregnancy for mother and baby (preventing and treating risks, illness and death); having an effective transition to positive labor and birth; and achieving positive motherhood (maternal self-esteem, competence and autonomy). It (5) further noted that that ANC reduces maternal and perinatal morbidity and mortality both directly by detection and treatment of pregnancy-related complications, and indirectly, through the identification of women and girls at increased risk of developing complications during labor and delivery, hence ensuring referral to an appropriate level of care. Some of the recommendations by (6) emphasize that antenatal care should be started as soon as the mother has missed one menstrual period followed by eight ANC visits which are spread out over her pregnancy period. This should be done by a skilled health worker at a health facility with the aim of reducing perinatal mortality and improving the mother's experience of care. The Antenatal care visits are packaged in a way that vital actions are carried out on the mother.

It has been estimated that 25 percent of maternal deaths occur during pregnancy, with variability between countries depending on the prevalence of unsafe abortion, violence, and disease in the area (7). However, adequate antenatal care attendance has shown to reduce preventable causes of death and disability for both the pregnant mother and unborn child (8). This is achievable through treatment of health related conditions such as eclampsia, malaria, anemia, HIV and perinatal per vaginal bleeding; and referrals where necessary (9). The same author further stated that 94 % occurred in low-resource settings like Uganda with sub-Saharan Africa contributing about 86%. The five outstanding causes of these deaths were: severe bleeding, infections, high blood pressure during pregnancy (pre-eclampsia and eclampsia), complications from delivery and unsafe abortion (3).

In Low income countries like Uganda, ANC attendance is still very low as showed by some reports from (11). The 2016 UBOS report mentions that 95% of pregnant women got at least one antenatal visit; 60% received four and more visit with Bunyoro having the at least four or more ANC attendance at 45% which indicate that Bunyoro has the lowest percentage. Most women in Uganda have registered late ANC attendance, averagely at 5.5 months of pregnancy and do not complete the required four visits (12). Late booking to antenatal care is associated with poor outcomes for both mothers and babies(13).

Nevertheless, a large number of mothers in Uganda enroll late for first antenatal visit; contrary to the WHO recommendations(14). This leads to mothers missing out on antennal packages suggested for the first months and they are unable to finish the recommended eight antenatal visits(7). When the full antenatal package is missed, some of these mothers may develop complications before and during labor; leading to disability or death of the mother or baby or both; that would have be identified and treated earlier if the mother attended

antenatal. This causes grief to the family, community and country at large due to reduced productivity and large expenses on such mothers (3).

The Uganda government has adopted and implemented WHO guidelines on ANC, recruited health workers to deliver ANC services and providing funding to these services. Some local NGOs and private health facilities in Uganda also provide ANC. With all this effort, many mothers still enrol for ANC late in the months as in the case of our study area the Bunyoro region. Therefore, this study intends to assess the factors leading late ANC enrolment among mothers attending ANC clinic at Masindi Hospital.

1.2 Study area

The study was carried out at Masindi Hospital. The hospital is located in the town of Masindi, in Masindi District, in Bunyoro sub-region, about 66 kilometres (41 mi), by road, northeast of Hoima Regional Referral Hospital. Built in 1922 as a health aid post of the workers of the East African Railways, by 1935 it was acquired by the colonial government and developed into a Health Center IV facility. In 1965 it was handed over to the government of Uganda and in 1988, it was upgraded to a 100-bed general hospital. 54 gynecology beds were added in 2008, to bring the bed capacity to 154. Patients served come from the districts of Masindi, Buliisa, Nakasongola, Nakaseke, Hoima and Nebbi.

1.3 Broad objective

To assess the factors associated with late antenatal enrollment among pregnant mothers aged 15-49 years at Masindi hospital

1.4 Specific objectives

(1) To determine the time of enrolment for Antenatal Care (ANC) among pregnant women aged 15-49 Years at Masindi Hospital
(2) To determine the socio-demographic factors associated with late ANC enrolment among pregnant mothers aged 15-49 years in Masindi Hospital
(3) To establish whether knowledge of Mothers on antenatal care services was associated with late ANC visit in Masindi Hospital
(4) To establish whether attitudes of mothers towards ANC services was associated with late ANC visit in Masindi Hospital

2. METHODOLOGY

2.1 Study design

This was analytical cross-sectional study employing quantitative methods of data collections.

2.2 Study population

This study focused on expectant mothers aged 15 to 49 years attending antenatal at Masindi Hospital.

2.3 Inclusion and Exclusion Criteria

2.3.1 Inclusion criteria

Pregnant women15 to 49 years of age, who have had their first antenatal visit after 14 weeks of gestation. This includes women who have come for follow-up visits, though their first visit was after 14 weeks. This is because the first trimester pregnancy stage is the fastest

developmental period of the fetus, in which all organs become well developed and needs special attention.

2.3.2 Exclusion criteria

In-patients, mothers in labor, very weak patients and speech-impaired mothers were excluded from the study. The weak may require more health services and unable to wait for an interview; while the speech-impaired mothers were not be able to give a verbal answer to the questions asked.

2. 4 Sample size estimation

Participants were drawn from patients exiting the facility. The sample size was estimated using the Cochran (1963) formula for cross sectional studies $n = \dfrac{z^2 pq}{e^2}$

Thus, *n* =380 respondents.

This is a non-probability convenience sampling method was used where by the sample is selected based on the availability of respondents who meet all the inclusion criteria was included in the study by the researcher.

2.5 Sampling procedure

The researcher used quota sampling method. This is a non-probability sampling method where by the sample is selected from a location convenient for the researcher. When a person with this visible characteristic is identified, the subject is requested to participate in the study; the process continues until you are able to acquire the appropriate number of respondents(15). In this study, the researcher liaised with health workers to identify the pregnant women who had enrolled for their first antenatal visits after gestation of 14 weeks. An ultrasound scan was further performed to confirm the actual weeks of the pregnancy and interviews were carried out on the selected mothers until the appropriate sample size was obtained.

2.6 Data collection tools

A researcher-administered questionnaire was used to collect the data. It contained both open-ended and closed-ended questions.

2.7 Data analysis and presentation

The data of the study was analyzed using Microsoft Office Excel 2012 and SPSS 16.0. Presentations are in form of tables, pie-charts and graphs. This was done at all levels using SPSS version 22. Univariate analysis obtained the frequency and distribution of study variables. Bivariate analysis used Chi-square test to determine the association between the two variables. Where P<0.05 were considered significant. Multivariate analysis was performed to control the confounding variables by logistic regression analysis. Variables with P <0.05 at bivariate analysis were put into model to establish factors independently associated late enrolment for ANC.

2.8 Ethical considerations

Ethical considerations were taken care including but not limited ethical approval, informed consent and confidentiality

3. RESULTS

3.1 Socio-demographic Characteristics of Respondents

Table 1: Univariate analysis of socio-demographic characteristics

Variable	Frequency (n=380)	Percentage %
Age		
▪ 15-19 years	102	26.8
▪ 20-24 years	110	28.9
▪ 25-29 years	95	25.0
▪ 30-34 years	56	14.7
▪ >34 years	17	4.5
Age at Marriage		
▪ 15-19 years	294	77.4
▪ 20-24 years	29	7.6
▪ 25-29 years	30	7.9
▪ 30-34 years	27	7.1
Age at first child		
▪ 15-19 years	321	84.5
▪ 20-24 years	18	4.7
▪ 25-29 years	20	5.3
▪ 30-34 years	20	5.3
▪ > 34 years	1	.3
Parity		
▪ One	73	19.2
▪ Two	122	32.1
▪ Three	111	29.2
▪ More than three	74	19.5
Religion		
▪ Catholics	133	35.0
▪ Protestants	109	28.7
▪ Muslims	54	14.2
▪ Pentecostals	84	22.1
Marital status		
▪ Married	136	35.8
▪ Single	178	46.8
▪ Divorced	66	17.4
Highest Education attained		
▪ No formal education	106	27.9
▪ Primary	102	26.8
▪ Secondary	109	28.7
▪ Tertiary	63	16.6
Occupation		
▪ Peasant farmer	71	18.7
▪ Housewife	94	24.7
▪ Business woman	97	25.5
▪ Civil servant/formal employment	58	15.3
▪ Informal employment/casual labour	60	15.8
Husband's Highest Education Attained		
▪ No formal education	98	25.8
▪ Primary	133	35.0
▪ Secondary	108	28.4
▪ Tertiary	41	10.8
Husband's occupation		
▪ Peasant farmer	81	21.3
▪ Business man	191	50.3

▪ Civil servant/formal employment	79	20.8
▪ Informal employment/casual labour	29	7.6

Most 28.9% of the respondents were aged between 20-24 years, majority 77.4% of the respondents were aged between 15-19 years at marriage, most 84.5% of the respondents were aged between 15-19 years at first child, most 32.1% of the respondents had a parity of two, most 35.0% of the respondents were Catholics , most 46.8% of the respondents were single, most 28.7% of the respondents attained secondary education level, most 25.5% of the respondents were business women, majority 35.0% of the respondents had husbands who had attained primary education, and most 50.3% of the respondent s whose husbands occupation were businessmen.

3.2 Time of Enrolment for Antenatal Care (ANC) Among Mothers

Early enrolment was defined as enrolment on Antenatal care (ANC) within 12 weeks of gestation whereas late enrolment was after 12weeks of gestation

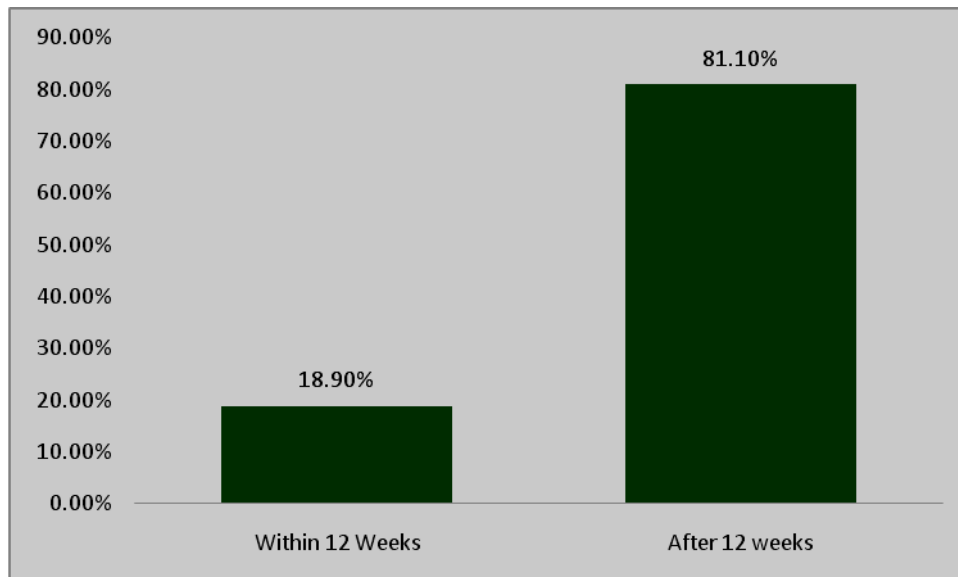*Figure: showing the time at enrollment for ANC*

Figure 1: Time of Enrolment for Antenatal Care (ANC) Among Mothers

When the women were asked when they first made their ANC visit with this current pregnancy, majority 81.1% made their first ANC visit after 12 weeks (Late enrolment) while only 18.9% made their ANC visit within the first trimester.

3.3 Socio-demographic Factors Associated with Late Enrolment for ANC

Analysis of socio-demographic factors associated with late enrolment was done and the result shown in table 2 below

Table 2: Bivariate analysis of socio-demographic factors associated with late enrollment for ANC

Socio-demographic Variables	ANC Enrolment		Total	x^2	P-value
	Late	Early			
Age				2.619 Df=4	.623
▪ 15-19 years	81(26.3%)	21(29.2%)	102		
▪ 20-24 years	88(28.6%)	22(30.6%)	110		
▪ 25-29 years	75(24.4%)	20(27.8%)	95		
▪ 30-34 years	49(15.9%)	7(9.7%)	56		
▪ >34 years	15(4.9%)	2(2.8%)	17		
Age at Marriage				7.830 Df=3	**.050***
▪ 15-19 years	242(78.6%)	52(72.2%)	294		
▪ 20-24 years	26(8.4%)	3(4.2%)	29		
▪ 25-29 years	23(7.5%)	7(9.7%)	30		
▪ 30-34 years	17(5.5%)	10(13.9%)	27		
Age at first child				3.385 Df=4	.496
▪ 15-19 years	256(83.1%)	65(90.3%)	321		
▪ 20-24 years	15(4.9%)	3(4.2%)	18		
▪ 25-29 years	19(6.2%)	1(1.4%)	20		
▪ 30-34 years	17(5.5%)	3(4.2%)	20		
▪ > 34 years	1(.3%)	0(.0%)	1		
Parity				22.569 Df=3	**.000***
▪ One	56(18.2%)	17(23.6%)	73		
▪ Two	85(27.6%)	37(51.4%)	122		
▪ Three	103(33.4%)	8(11.1%)	111		
▪ More than three	64(20.8%)	10(13.9%)	74		
Religion				14.802 Df=3	**.002***
▪ Catholics	110(35.7%)	23(31.9%)	133		
▪ Protestants	76(24.7%)	33(45.8%)	109		
▪ Muslims	46(14.9%)	8(11.1%)	54		
▪ Pentecostals	76(24.7%)	8(11.1%)	84		
Marital status				2.987 Df=2	.225
▪ Married	116(37.7%)	20(27.8%)	136		
▪ Single	142(46.1%)	36(50.0%)	178		
▪ Divorced	50(16.2%)	16(22.2%)	66		
Highest Education attained				5.242 Df=3	.155
▪ No formal education	89(28.9%)	17(23.6%)	106		
▪ Primary	89(28.9%)	14(19.4%)	103		
▪ Secondary	82(26.6%)	27(37.5%)	109		
▪ Tertiary	49(15.9%)	14(19.4%)	63		
Occupation				8.449 Df=4	.076
▪ Peasant farmer	54(17.5%)	17(23.6%)	71		
▪ Housewife	80(26.0%)	14(19.4%)	94		
▪ Business woman	74(24.0%)	23(31.9%)	97		
▪ Civil servant/formal employment	45(14.6%)	13(18.1%)	58		
▪ Informal employment/casual labor	55(17.9%)	5(6.9%)	60		
Husband's Highest Education Attained				10.832 Df=3	**.013***
▪ No formal education	73(23.7%)	25(34.7%)	98		
▪ Primary	119(38.6%)	14(19.4%)	133		
▪ Secondary	82(26.6%)	26(36.1%)	108		
▪ Tertiary	34(11.0%)	7(9.7%)	41		

Husband's occupation					
▪ Peasant farmer	61(19.8%)	20(27.8%)	81	3.555	.314
▪ Business man	161(52.3%)	30(41.7%)	191	Df=3	
▪ Civil servant/formal employment	64(20.8%)	15(20.8%)	79		
▪ Informal employment/casual labor	22(7.1%)	7(9.7%)	29		

$\square^2$=Chi square, **Df**=Degree of freedom

Among the socio-demographic factors, having age at marriage ($\square^2$=7.830, *p= 0.050*), parity ($\square^2$=22.569, *p=0.000*), religion ($\square^2$=14.802, *p=0.002*), and husbands education level ($\square^2$= 10.832, *p=0.013)* were significantly associated with late enrolment for ANC.

3.4 Knowledge of Mothers on antenatal care services

Bivariate analysis of knowledge of women on ANC services associated with late enrolment for ANC was done. See table 3 below

Table 3: Bivariate analysis of Knowledge of women on ANC services

Knowledge Variables	ANC Enrolment		Total	$\square^2$	P-value
	Late	Early			
What is antenatal care?					
▪ Medical care of a pregnant woman during pregnancy.	142(46.1%)	14(19.4%)	156	17.270	**.000***
▪ Taking of medication by pregnant women	121(39.3%)	41(56.9%)	162	Df=2	
▪ I don't know	45(14.6%)	17(23.6%)	62		
When is the right time to seek antenatal care?					
▪ After 14 weeks of pregnancy	79(25.6%)	15(20.8%)	94	18.679	**.000***
▪ After 28 weeks of pregnancy	121(39.3%)	22(30.6%)	143	Df=3	
▪ After 32 weeks of pregnancy	54(17.5%)	29(40.3%)	83		
▪ Immediately	54(17.5%)	6(8.3%)	60		
Do you think it is important to book early for antenatal care?					
▪ Yes	98(31.8%)	24(33.3%)	122	.061	.453
▪ No	210(68.2%)	48(66.7%)	258		
If yes, give at least 2 benefits of early booking by pregnant mothers					
▪ Early detection, treatment and care of infections	48(49.0%)	16(66.7%)	64	2.418 Df=1	.092
▪ Improved neonatal health	50(51.0%)	8(33.3%)	58		
What is the recommended number of times to attend antenatal care among pregnant mothers?					
▪ times	123(39.9%)	8(11.1%)	131	46.932	**.000***
▪ 5 times	84(27.3%)	50(69.4%)	134	Df=2	
▪ 4 times	101(32.8%)	14(19.4%)	115		
Who makes your decisions to seek health care services like antenatal care?					
▪ I make the decision	86(27.9%)	26(36.1%)	112	3.385	.336
▪ My partner makes the decision	103(33.4%)	26(36.1%)	129	Df=3	
▪ My mother-in-law	75(24.4%)	12(16.7%)	87		
▪ We both make the decision	44(14.3%)	8(11.1%)	52		
Fansidar for prevention of malaria in pregnant should be given to pregnant women every month [from 14 weeks] until she delivers					
▪ True	189(61.4%)	40(55.6%)	229	.822	.219

▪ False	119(38.6%)	32(44.4%)	151	Df=1	
Screening blood for infections (HIV and Syphilis) should be carried out during antenatal care check-up.					
▪ True	164(53.2%)	47(65.3%)	211	3.421	**.042***
▪ False	144(46.8%)	25(34.7%)	169	Df=1	
Supplementation of iron and folic acid are good for mother and fetus					
▪ True	147(47.7%)	28(38.9%)	175	1.835	.110
▪ False	161(52.3%)	44(61.1%)	205	Df=1	

$\square^2$=Chi square, **Df**=Degree of freedom

Meaning of Antenatal care ($\square^2$=17.270, p-value of 0.000), knowledge of the right time to seek antenatal care ($\square^2$=18.679, p-value of 0.000), knowledge of the recommended times of antenatal attendance ($\square^2$= 46.932, p-value of 0.000) and knowledge the screening blood for infections ($\square^2$=3.421, p-value of 0.042) were the knowledge of antenatal care services associated with late enrolment.

3.5 Attitudes of Mothers towards ANC services
The attitudes of mothers towards ANC services was analysed for any association with late ANC visit and the result are tabulated below

Table 4: Bivariate Analysis of Attitudes of Mothers Towards ANC Enrolment

Attitude Variables	ANC Enrolment		Total	$\square^2$	P-value
	Late	Early			
It is necessary to register during pregnancy for antenatal check up					
▪ Strongly Agree	55(17.9%)	16(22.2%)	71	4.960	.175
▪ Agree	88(28.6%)	26(36.1%)	114	Df=3	
▪ Disagree	93(30.2%)	21(29.2%)	114		
▪ Strongly Disagree	72(23.4%)	9(12.5%)	81		
It is importance for a pregnant woman to have early antenatal booking					
▪ Strongly Agree	74(24.0%)	9(12.5%)	83	25.953	**.000***
▪ Agree	91(29.5%)	7(9.7%)	98	Df=3	
▪ Disagree	77(25.0%)	24(33.3%)	101		
▪ Strongly Disagree	66(21.4%)	32(44.4%)	98		
Antenatal care follow-up is good to monitor mother's and fetus's health					
▪ Strongly Agree	69(22.4%)	4(5.6%)	73	17.516	**.001***
▪ Agree	103(33.4%)	35(48.6%)	138	Df=3	
▪ Disagree	104(33.8%)	31(43.1%)	135		
▪ Strongly Disagree	32(10.4%)	2(2.8%)	34		
Antenatal care is very vital for the health of the mothers and the baby					
▪ Strongly Agree	50(16.2%)	24(33.3%)	74	17.324	**.001***
▪ Agree	110(35.7%)	12(16.7%)	122	Df=3	
▪ Disagree	68(22.1%)	12(16.7%)	80		
▪ Strongly Disagree	80(26.0%)	24(33.3%)	104		
I prefer to go to TBA/ instead of going for Antenatal care					
▪ Strongly Agree	49(15.9%)	12(16.7%)	61	11.825	**.008***
▪ Agree	125(40.6%)	16(22.2%)	141	Df=3	
▪ Disagree	62(20.1%)	26(36.1%)	88		

▪ Strongly Disagree	72(23.4%)	18(25.0%)	90		
My religious beliefs does not allows ANC				5.318	.150
▪ Strongly Agree	62(20.1%)	10(13.9%)	72	Df=3	
▪ Agree	86(27.9%)	18(25.0%)	104		
▪ Disagree	72(23.4%)	26(36.1%)	98		
▪ Strongly Disagree	88(28.6%)	18(25.0%)	106		
Am willing to attend ANC services when am pregnant				18.206	**.000***
▪ Strongly Agree	36(11.7%)	18(25.0%)	54	Df=3	
▪ Agree	100(32.5%)	32(44.4%)	132		
▪ Disagree	83(26.9%)	14(19.4%)	97		
▪ Strongly Disagree	89(28.9%)	8(11.1%)	97		
My family and the society support me to follow ANC services				23.999	**.000***
▪ Strongly Agree	60(19.5%)	24(33.3%)	84	Df=3	
▪ Agree	62(20.1%)	14(19.4%)	76		
▪ Disagree	146(47.4%)	14(19.4%)	160		
▪ Strongly Disagree	40(13.0%)	20(27.8%)	60		
I feel sulphadoxinepyremethamine (SP) treatment are important for prevention of Malaria during their pregnancy				36.496	**.000***
▪ Strongly Agree	64(20.8%)	17(23.6%)	81	Df=3	
▪ Agree	80(26.0%)	3(4.2%)	83		
▪ Disagree	120(39.0%)	22(30.6%)	142		
▪ Strongly Disagree	44(14.3%)	30(41.7%)	74		
By screening for HIV means that I have understanding of HIV transmission from the mother to child in the community.				10.887	**.012***
▪ Strongly Agree	35(11.4%)	18(25.0%)	53	Df=3	
▪ Agree	123(39.9%)	30(41.7%)	153		
▪ Disagree	104(33.8%)	16(22.2%)	120		
▪ Strongly Disagree	46(14.9%)	8(11.1%)	54		

x^2=Chi square, **Df**=Degree of freedom

Importance for a pregnant woman to have early antenatal booking (x^2=25.953, p=0.000), Antenatal care follow-up is good to monitor mother's and fetus's health (x^2= 17.516, p= 0.001), antenatal care is very vital for the health of the mothers and the baby (x^2=17.324, p=0.001), preference to go to TBA/ instead of going for Antenatal care (x^2=11.825, p=0.008), willing to attend ANC services when pregnant (x^2=18.206, p=0.000), feeling of family and the society support to follow ANC services (x^2=23.999, p=0.000), feeling that sulphadoxinepyremethamine (SP) treatment are important for prevention of Malaria during their pregnancy (x^2=36.496, p=0.000) and feeling that by screening for HIV means that I have understanding of HIV transmission from the mother to child in the community (x^2=10.887, p= 0.012) were associated with late enrolment for ANC.

Table 5: Multivariate analysis of factors associated with late enrollment for ANC

Variables	Adjusted OR (AOR), 95% CI (L-U)	p-value
Religion		
▪ Catholics	1.0	
▪ Protestants/Pentecostal	9.943(1.089-90.821)	**.042***
▪ Muslims	.083(.002-4.095)	.211
▪ Pentecostals	.714(.044-11.706)	.814

Knowledge on right time to seek first antenatal care		
▪ After 14 weeks of pregnancy	1.0	
▪ After 28 weeks of pregnancy	3.019(1.001-6.342)	**.000***
▪ After 32 weeks of pregnancy	2.214(.154-31.912)	.559
▪ Immediately	.007(.001-.093)	**.007***
Recommended number of ANC visits		
▪ times	1.0	
▪ 5 times	.556(.355-5.684)	.169
▪ 4 times	.777(.294-.890)	**.001***
Antenatal care follow-up is good to monitor mother's and fetus's health		
▪ Strongly Agree	1.0	
▪ Agree	12.327(.036-49.952)	.391
▪ Disagree	33.189(2.639-42.419)	**.019***
▪ Strongly Disagree	36.348(4.365-92.711)	**.009***
I prefer to go to TBA instead of going for Antenatal care		
▪ Strongly Agree	1.0	
▪ Agree	1.015(.007-2.026)	.051
▪ Disagree	.216(.106-.989)	**.049***
▪ Strongly Disagree	.232(.112-6.056)	.105
Am willing to attend ANC services when am pregnant		
▪ Strongly Agree	1.0	
▪ Agree	6.010(2.005-15.026)	**.000***
▪ Disagree	8.021(2.008-12.089)	**.000***
▪ Strongly Disagree	10.033(4.009-.30.100)	**.000***
My family and the society support me to follow ANC services		
▪ Strongly Agree	1.0	
▪ Agree	1.204(.012-3.614)	.279
▪ Disagree	4.037(1.013-5.352)	**.013***
▪ Strongly Disagree	1.209(.010-4.594)	.321
I feel sulphadoxinepyremethamine (SP) treatment are important for prevention of Malaria during their pregnancy		
▪ Strongly Agree	1.0	
▪ Agree	2.111(1.025-7.068)	**.002***
▪ Disagree	3.032(1.008-10.010)	**.000***
▪ Strongly Disagree	2.035(1.002-9.708)	**.029***

Respondents who were Protestants/Pentecostal were 9.943 times more likely to have late enrolment compared to those who were Catholics. Respondents who were knew that the right time to seek first ANC is after 28 weeks were 3.019 times more likely to enrol late compared to those knew that the right time to seek first ANC was after 14 weeks while those who knew that the right time to seek first ANC were 0.007 times less likely to enrol late.

Respondents who knew that the recommended number of ANC visits were 4 times were 0.777 times less likely to enrol late compared to those who knew that the recommended ANC visits are two times

Respondents who disagreed and strongly disagreed that ANC follow up is good to monitor mothers and fetus health were 33.189 and 36.348 times more likely to have late ANC enrolment.

Respondents who disagreed that they prefer to go to TBA instead of going for ANC were 0.216 times less likely to have late enrollment for ANC compared to those who strongly agreed that they prefer to go to TBA instead of going for ANC.

Respondents who agreed, disagreed and strongly disagreed that they were willing to attend ANC services when they are pregnant were 6.010, 8.021 and 10.033 times more likely to have late ANC enrolment respectively.

Respondents who disagreed that their family and society support them to follow ANC services were 4.037 times more likely to have late ANC enrolment.

Respondents who agreed, disagreed and strongly disagreed that they feel sulphadoxinepyremethamine (SP) treatment are important for prevention of Malaria during their pregnancy were 2.111, 3.032 and 2.035 times more likely to have late ANC enrolment.

4. DISCUSSIONS

4.1 Late enrolment for ANC

The study found that the prevalence of late enrolment was 81.1% visit among the study respondents with only 18.9% enrolled early for ANC. This is probably because the women are not well-informed on importance of timely first ANC visit since there is no formal education and no health extension workers affected the timing of 1st ANC in the community. This is slightly above the prevalence by some scholars (16) which found that 17.4% of the mother reported for the first ANC within the recommended time. Finding here is similar to one study (14) which found the prevalence at 9.7% of the respondents had their first ANC visit at the recommended time frame. A related study (17) found that over 40% of pregnant women do not initiate 1st ANC visit in the first trimester. The difference in the study could probably be the difference in study setting. This implies that there is need to give an advice, improve economic capacity and avoid unplanned pregnancy through family planning.

4.2 Socio-demographic factors

In this study, religious of the participants was significantly associated with late enrollment for ANC; Protestants/Pentecostals had high chances of late enrollment. This is similar to a study by (18) who found that the timing and frequency of antenatal visits were significantly associated with religious differences. Similarly(14), it was found that cultural beliefs and religious ideas about pregnancy can influence women to make a decision about when to start ANC early or not to attend at all.

In the study, education level of the respondents was found to be associated with late enrolment for ANC. This is probably because educated women are exposed to information regarding ANC and its importance to the woman and the child since they can read some of the information besides being able to work and support themselves and more educated mothers had better income, income increases the ability to pay for health care services, transportation, and other indirect costs. This is consistent with one scholar(18) who noted that timing and frequency of antenatal visits were significantly associated with education of the mother. Similarly(19), one stated that underutilization of ANC was due to lack of education, pregnant mothers with no formal education (illiterate women) attended late ANC than women who had formal education. This implies that women should be empowered and given equal opportunity on education in communities

4.3 Knowledge on ANC services

The study found that knowledge about the number of visit was associated with late enrolment; knowing that there were four recommended ANC was associated with reduced chances of late enrolment. This is in line with a study (20), which showed that many of the mother's income were low, so they failed to raise money for transport, lunch while on ANC visit lacked what to put on like maternity dresses and knickers and lack of the required number of visit. In addition (14), it was also shown that only 9.7% of the respondents had

their first ANC visit at the recommended time frame those most of them did not know their gestation age.

The study found that knowledge that one should start ANC immediately was associated with reduced chance of late enrolment to ANC. This is supported by a related study (17) which found that over 40% of pregnant women do not initiate 1st ANC visit in the first trimester largely due to lack of correct knowledge of the recommended ANC schedule.

4.4 Attitude towards ANC services

The study found that believing in TBA as an alternative was associated with increased chance of late uptake of ANC services. This is in line with a study (12), which observed that in many countries, TBAs are an important source of social and cultural support to women during childbirth, due to economic constraints and difficulty in posting trained professionals to rural areas forcing many women continue to deliver with TBAs which prevent them from access ANC services from qualified health professionals. This is also Delivery also was conducted at home or TBA because of fear of mode of delivery at hospital, encouraged by mother or mother in law, husband's decision, lack of problems during pregnancy and very few being interested in delivering at health facility. This means that there is inadequate sensitization done specifically in these rural areas to empower pregnant women and their husbands as to improve timing of 1st ANC attendance.

In the study, feeling of having support from family and society to follow ANC services was associated with reduced chance of late ANC visits. This is in line with a study by another scholar(18) who noted that some mothers enrolled for ANC late because they had not gotten permission from their husbands. In addition(20), it was also found that out late recognition of pregnancy and not being supported by the husband or partner were identified as factors associated with a late antenatal care booking and (21) also found that lack of male partner support during antenatal period are associated with delayed booking for antenatal care.

5. CONCLUSIONS

The general proportion of late enrolment for ANC was high at 81.1%. Being protestants/Pentecostals was associated with high occurrence of late enrolment for ANC. Knowledge that ANC should start immediately and that the recommended number of ANC visits should be four were associated with low chance of late enrolment. While knowing that ANC should start after 28 weeks was positively associated with late enrolment. Having strong agreement that Antenatal care follow-up is good to monitor mother's and fetus's health, willing to attend ANC services when am pregnant, having support from family and society to follow ANC services and having feelings that sulphadoxinepyremethamine (SP) treatment are important for prevention of Malaria during their pregnancy were negatively associated with late enrolment for ANC while having strong agreement of preferring TBA instead of going for ANC was associated with high chance of late enrolment for ANC

6. RECOMMENDATIONS

The study, therefore, recommends that the District stake holders, District health office and community leaders should sensitize the community on the importance of keeping the girl child at school up to the time of completion of their studies. Health care providers are encouraged to give enough information during health education on the importance of timing of 1st antenatal care, number of visits and encourage mothers deliver from health facility and

future qualitative studies exploring the enablers and factors to early antenatal care booking in other public health facilities within Masindi District.

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8. DECLARATION

The authors declare that they had no conflict of interest.

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