LATE ANTENATAL CARE BOOKING AND ASSOCIATED FACTORS AMONG PREGNANT WOMEN ATTENDING ANTENATAL CARE AT LIRA REGIONAL REFERRAL HOSPITAL, LIRA CITY: CROSS-SECTIONAL STUDY.

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ABSTRACT
Background
Globally, many pregnant women especially in Sub-Saharan Africa still initiate Antenatal care (ANC) contacts after the first 12 weeks of pregnancy, and yet it is highly associated with increased risk for poor pregnancy outcomes such as preterm delivery, and low birth weight. Therefore, determining the associated factors was crucial to developing the appropriate interventions to combat the problem of late ANC booking with its related complications.

Methods
This was a cross-sectional study using a quantitative approach to assess the late ANC booking and associated factors among 262 pregnant women attending ANC at Lira Regional Referral Hospital (LRRH) between October 2023 and June 2024. Data was collected using semi-structured questionnaires, coded, and entered into Epi data version 3.1 and exported to SPSS version 23 for analysis. Bivariate and multivariate logistic regression models were utilized to determine factors associated with the outcome variable.

Results
The prevalence of late ANC booking was 59.5% among pregnant women attending ANC at Lira Regional Referral Hospital, Lira City. Factors that were found significantly associated with late ANC booking at a P-value < 0.02 included; Knowing the ANC frequency [(AOR)= 0.092; p=0.002; 95%CI; 0.030-0.289], timing of the first ANC [AOR= 68.070; p<0.001; 95%CI; 15.972-290.104], waiting at the facility [AOR=0.326; p=0.013; 95%CI; 0.135-0.786], being uncomfortable telling others that one was pregnant [AOR= 7.308; p= 0.016; 95%CI= 1.455- 36.696] and having a complication in the past pregnancy [AOR= 8.979; p<0.001; 95%CI; 2.639-30.557].

Conclusion
The findings in this study indicated that late ANC booking amongst pregnant women attending ANC in the study area was still high.

Recommendation
Therefore, intervention efforts to improve early ANC booking require targeting of these hindering factors. This can be done by paying special attention to reducing the waiting time at the facility and educating the mothers on the recommended ANC booking time.

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INTRODUCTION
Globally, many pregnant women (41.4%) still initiate Antenatal care (ANC) contacts after the first 12 weeks of pregnancy, even though the benefits of early ANC are well known. This prevalence varies across regions, with 51.9% in developing regions and 15.2% in developed regions (Moller, Petzold, Chou, & Say, 2017). In Africa, a review of the literature shows that the magnitude of late ANC booking also varies across regions with Northern Africa at 29.6% and Sub-Saharan Africa at 75.1% (Moller et al., 2017). Uganda is one of the developing countries with high rates of late ANC booking at 71% (UBoS, 2018).

The World Health Organization (WHO) defines Antenatal care (ANC) as "the care provided by skilled health-care professionals to pregnant women to ensure the best health conditions for both mother and baby during pregnancy" (WHO, 2016a). It comprises several components such as prevention and management of pregnancy-related or

concurrent diseases such as malaria, HIV, tuberculosis, syphilis, and tetanus; risk identification; and promotion of health and well-being which is done through education and support for nutrition, recognition of danger signs such as severe headache, blurred vision; cessation of substance abuse such as alcohol; and birth preparedness (Downe, Finlayson, Tunçalp, & Metin Gülmezoglu, 2016; McCauley, Lowe, Furtado, Mangiaterra, & van den Broek, 2022; WHO, 2016a).

The first ANC contact, also known as booking, should be done within the first 12 weeks of gestation as it is paramount in ensuring the best mother, fetal, and newborn health outcomes (WHO, 2016a). It renders a vital opportunity to determine the baseline information on the mother's general well-being such as body mass index, weight, blood pressure, and hemoglobin estimation hence giving a fair idea of the pre-pregnancy state of the woman; correct gestational age determination, especially among women who could have forgotten the dates for their last normal menstrual period, multiple pregnancies, and fetal malformations in case of any (WHO, 2016a). It also renders an appropriate time to create awareness of pregnancy's danger signs and symptoms, which may lead to immediate access to appropriate emergency obstetric care (Gidey et al., 2017). Iron and folic acid supplementation, which is best given during the first 12 weeks of pregnancy, has been associated with the well-being of the mother and fetus by helping to prevent or lower pregnancy complications such as anemia, fetal neural tube defects (NTDs) such as spinal bifida and anencephaly given that the organs of the fetus primarily grow and develop during that period (Brown, Cohen, Edwards, Gustin, & Noreen, 2021). Women who present early for the first ANC have higher chances for better pregnancy outcomes such as full-term delivery and normal birth weight. In contrast, those who present late have a higher risk for pregnancy complications such as preterm delivery, low birth weight, fetal growth restriction, neural tube defects, maternal anemia, and maternal and fetal death (Hofmeyr et al., 2023; Jinga, Mongwenyana, Moolla, Malete, & Onoya, 2019).

In an attempt to lower late ANC booking with its associated complications, Uganda's Ministry of Health (MoH) has continued to involve development and implementing partners to improve the quality of and access to ANC such as coming up with ANC recommendations, making access to ANC clinics free of charge, mobilizing the community using VHTs, continuous training of the health workers, increasing male involvement in ANC, and empowering women (Ministry Of Health, 2022; UBoS, 2018).

Despite having the above interventions to curb late ANC booking and its associated complications, very few pregnant women, 29% report early for ANC in Uganda (UBoS, 2018). This leaves Uganda's Maternal mortality ratio high at 189 deaths per 100, 000 live births given that most of its causes could be mitigated if the booking was done early (UDHS, 2022), hence jeopardizing the achievement of the global target of lowering the maternal mortality to less than 70 deaths per 100,000 live births by 2030 (WHO, 2015, 2016a, 2016b).

Studies done across the world have identified having home delivery in a previous delivery, low knowledge about the advantage and service availability of ANC, maternal age, region, women's occupation, distance from the health facility, husband's educational status, having an unplanned pregnancy, parity and gravidity to be the some of the factors associated with late ANC booking in low-resource countries (Adulo & Hassen, 2023; Dorji et al., 2019; Ebonwu, Mumbauer, Uys, Wainberg, & Medina-Marino, 2018; Grum & Brhane, 2018; Okwany & Kimono, 2023; Tadele, Getachew, Fentie, & Amdisa, 2022; Wolderufael, Areda, Ganebo, & Gebreyesus, 2020). However, these factors vary from place to place because of the difference in settings.

There were very few previous studies about ANC booking done in Uganda and still mainly focused on early ANC booking amongst pregnant women hence leaving a paucity of literature on late ANC booking which necessitated conducting this study to come up with appropriate solutions to combat.

METHODOLOGY
Research design
An analytical cross-sectional study design using a quantitative approach was utilized to assess the late ANC booking and associated factors. This is a research design that analyses data collected at one given point in time across a sample population. This study design was chosen because of its ability to identify, describe, and measure characteristics in the particular population without influencing them. Besides that, it could also provide data at a given point in time.

Study site and setting
The ANC clinic at Lira Regional Referral Hospital (LRRH), located in Lira, Northern Uganda, served as the study's institution. The administrative, commercial, and commercial town of Lira District was once known as Lira Municipal. Lira City is situated roughly 337 kilometers (209 miles) north of Kampala, Uganda's capital and largest city, via road. Lira City's coordinates are 2°14'50.0"N 32°54'00.0"E (3.25000 latitude, 02.2472 longitude).

It is bordered to the north by the Pader District, to the east by the Otuke District, to the south by the Dokolo District, to the west by the Apac District, and to the west by the Kole District.

LRRH is one of Uganda's seventeen regional referral hospitals. It exists and provides services to all nine of the Lango sub-region's districts: Alebtong, Apac, Dokolo, Otuke, Kole, Lira, Oyam, Otuke, and Kwania.

It provides inpatient and outpatient care. General outpatient care, specialty clinics offering HIV counseling and testing, laboratory tests, family planning, ANC, eMTCT (eliminating mother-to-child transmission), postnatal care, and vaccination services are among the outpatient services

offered. A 346-bed inpatient unit, theater services, prenatal care, maternity, surgical, and medical admissions are among the inpatient services offered. The prenatal clinic sees roughly 640 pregnant women each month and is open Monday through Friday, often from 9:00 to 16:00 hours.

Study population
Target population
The study targeted pregnant women attending ANC at LRRH, Lira City between the period of September 2023 to June 2024.

Accessible population
The study was conducted among pregnant women at any gestational age attending ANC at LRRH during the period of study.

Inclusion criteria
Pregnant women at any age and gestational age attending ANC at LRRH during the period of study and had consented were eligible to participate in the study.

Exclusion criteria
Pregnant women who were severely ill that they needed emergency management.
Those who were unable to provide valid data such as the mentally ill.

Sample size calculation
The sample size of this study was determined by using the Yamane (1967) formula for sample size determination for finite populations as follows.
Where,
N was the average expected number of pregnant women at any gestational age attending ANC at the ANC unit of LRRH in one month, N= 640.
n was the sample size.
e was the marginal error, e= 0.05

$$n=$$

n= 246 participants
Therefore, the total sample size was 271 participants, including 10% which catered for the non-response rate.

Sampling technique and procedure
The research participants were chosen at random using a simple random sampling technique. To reduce prejudice, this guaranteed that any woman who satisfied the eligibility requirements had an equal chance of being chosen for the study. A lottery-style method was used to choose study participants. Eligible women were asked to select small cards labeled "YES" and "NO" from a small box. Those who selected small cards labeled "YES" were the ones chosen to continue with the study until the desired sample size was reached.

Dependent variable
Late ANC booking

Independent variables
These included maternal age, parity, and gravidity, contraceptive use, husband's educational level, media inaccessibility, longer waiting times at the facility, history of home delivery in previous pregnancies, maternal occupation and educational level, number of family members, number of live biological children, among others.

Primary outcome
Prevalence of Late ANC booking among pregnant women attending ANC at LRRH, Lira City.

Secondary outcome
Factors associated with late ANC booking among pregnant women attending ANC at LRRH, Lira City.

Data collection methods and procedures
To obtain authority for data collection from the study site, a signed permission letter was requested from the Lira University Research and Ethics Committee (LUREC). The LRRH Management was contacted to obtain the administrative clearance. After receiving training, research assistants assisted in gathering data from expectant mothers who had given their consent to be included in the study at the ANC unit.

Data was collected using a quantitative cross-sectional method by use of a self-administered questionnaire prepared in English and translated to Lango for those who could not b comprehend the tool. For respondents who were unable to read and write an interview guide was used with the help of the research assistant. The study recruited an average of 14 participants each working day for 20 working days to cover the target sample size of 271 participants.

A semi-structured questionnaire was used to gather information about late ANC bookings and related variables. For those who did not understand English, it was translated into Lango after being written in English. The conceptual framework and study objectives directed the construction of the study instrument.

Data management
The data collected was stored in a key and lock area, coding of questionnaires was done for easy identification and to avoid double entering. Microsoft Excel was used for data entry that was created in Epi Data version 3.1 and entered in duplicate. After that, any discrepancies were cleaned up, and their completeness was verified. Data was entered using Epi Data version 3.1 and the final analysis and coding was done using the Statistical Package for Social Sciences (SPSS) version 23.0 after it was exported. To prevent tampering with confidentiality, hard copy data was kept behind locked

doors, and soft copy data was stored on a computer protected by a strong password.

Data Analysis

Version 23 of the Statistical Package for Social Sciences (SPSS) was used to analyze the data at three different levels:

univariate, bivariate, and multivariate. Data was summarized in percentages, proportions, and frequencies at the univariate level.

The dependent variable (late ANC booking) was compared at the bivariate level to the independent variables (social demographic characteristics, such as age and place of residence); pregnancy-related factors, such as gravidity, parity, unplanned pregnancy, complications from prior pregnancies, home delivery in the past, etc.); and other factors related to late ANC booking, such as husband's educational level, media access, transportation availability, waiting times, and distance to the healthcare facility. Odds ratios, confidence intervals, and P-values were used to summarize the data. A 95% level of confidence was used for the logistic regression, and P-values less than 0.05 indicated mean significance.

The variables that were significant in the bivariate analysis were used to identify predictors of late ANC booking among pregnant women at the multivariate level. The data was summarized using adjusted odds ratios and P-values. P-Values less than 0.02 were considered noteworthy.

Quality control
Reliability

The degree to which the questionnaire yielded consistent findings under both identical and dissimilar settings was measured by reliability. To make sure that the study instruments yielded consistent results, the questionnaire was pretested at Ober Health Center III among a comparable set of study participants, not on the actual study population. Before collecting data, research assistants got training on data collection techniques, instruments, and study ethics.

Validity

The suitability of the instrument is referred to as validity. My supervisor went over the prepared questionnaire to make sure it addressed all pertinent study components. After that, it was pretested at Ober Health Center III among a comparable group of study participants, from whom responses were collected for a single day. This allowed researchers to assess the questions' readability, their capacity to elicit the necessary data, and their ability to identify any potential ambiguities.

Informed consent

Before taking part in the study, all participants were asked for their written informed permission, and a copy of the signed informed consent form was given to the research participants after the study. To obtain informed consent, participants were given information about the study's goals and purpose, its methods, potential risks and benefits, and assurances regarding confidentiality. There was no any kind of coercion involved in the study; participation was only voluntary. Once participants consented to the study, they were asked to sign.

Privacy and Confidentiality

Participants completed the questions in a quiet, closed setting without disclosing their names, phone numbers, or other identifying information. The research team had exclusive access to all participant data, which was utilized only for the study. Computer-based data entry employed unique number identities. To prevent tampering with confidentiality, hard copy data was kept behind locked doors, and soft copy data was stored on a computer protected by a strong password.

Results
Socio-demographic characteristics of study participants (N=262)

The socio-demographic characteristics in this study included; age, marital status, religion, place of residence, level of education, occupation, family size, husband's level of education and occupation, and source of information.

The majority 72 (27.5%) of the participants fell in the age group of 25 to 29 years. Analysis of the data indicated that 100 women were Catholics by religion, accounting for 38.2% of the study participants while the rest belonged to other religious sects. Amongst these women, about half 135 (51.5%) were living in urban areas while the rest were in rural areas. Up to 99 women, 37.8% had utmost completed primary education while 38(14.5%) had no formal education, about a third 85 (32.4%) had utmost completed secondary education, and only 40 (15.3%) had utmost completed tertiary education. Most of the women 153 (58.4%) were employed while the rest were unemployed. Regarding marital status, the majority 244 (93.1%) were married while the remaining 18 (6.9%) were single. More than half of these women were living in families consisting of less than 5 members making up to 156 (59.5%) of the study participants. Regarding their sources of information about antenatal care, 240 (91.6%) got information through phone calls, about a half 132 (50.4%) via radio, only 11 (4.2%) via Newspapers, and nearly a third 84 (32.1%) via Television. About half of them 128 (48.9%) had husbands who had reached secondary education while almost all of them, 251 making up 95.8% had husbands who were employed. (**Table 1**).

**Table 1: Showing socio-demographic characteristics of study participants (N=262)**

Variable	Frequency (N= 262)	Percentage (%)
Age		
15 to 19	28	10.7
20 to 24	67	25.6
25 to 29	72	27.5
30 to 34	64	24.4
35 and above	31	11.8
Residence		
Rural area	127	48.5
Urban area	135	51.5
Religion		
Catholic	100	38.2
Protestant	94	35.9
Pentecostal	54	20.6
Seventh Day Adventist	5	1.9
Muslim	9	3.4
Women's Educational Level		
No Formal Education	38	14.5
Primary Education	99	37.8
Secondary education	85	32.4
Post-secondary	40	15.3
Woman's Occupation		
Employed	153	58.4
Unemployed	109	41.6
Marital status		
Single	18	6.9
Married	244	93.1
Divorced/ separated	0	0
Family Size		
Less than 5	156	59.5
Greater or equal to 5	106	40.5
Source of information		
Radio	132	50.4
Television	84	32.1
Newspaper	11	4.2
Phone	240	91.6
Husband's Education Level		
No Formal education	4	1.5
Primary education	83	31.7
Secondary education	128	48.9
Post-secondary	47	17.9
Husband's Occupation		
Employed	251	95.8
Unemployed	11	4.2

Source: Primary data (2024)

Prevalence of Late ANC Booking Among Pregnant Women Attending ANC at LRRH.
The prevalence of Late ANC booking among Pregnant women attending ANC at LRRH was 59.5% (156). (**Figure 2**)

Figure 1: Prevalence of Late ANC Booking Among Pregnant Women Attending ANC at LRRH
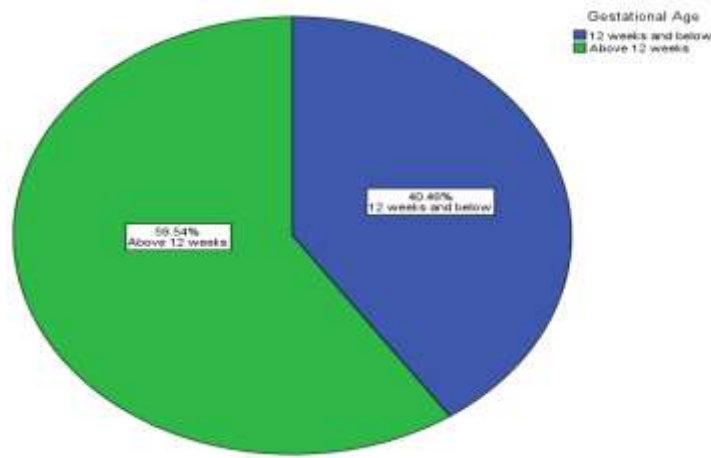
Source: Primary data (2024)

Obstetrics factors of the study participants.

Analysis of the data showed that out of the 262 respondents, 154 knew that the recommended number of ANC attendance in a normal pregnancy was at least eight times, accounting for 58.8% while slightly more than half 146 (55.7%) knew that the first ANC visit should be within the first 12 weeks. The majority, 157(59.9%) became aware that they were pregnant after missing their periods. The majority of these women came alone for ANC making up to 178 (67.9%) while up to 209 (79.8%) were comfortable telling others that they were pregnant. Concerning family planning use, slightly more than half, 132 (50.4%) had never used any modern family planning method. Regarding gravidity, 155 women accounting for 59.2% of the study participants had had two to four pregnancies while concerning parity, the majority, 170 (64.9%) had had one to four deliveries. Of the 183 (69.8%) who had delivered before, the majority 172 (94.0%) had delivered from a health facility while the remaining few were from home. The majority, 203 (77.5%) had never experienced a miscarriage and 174 (66.4%) had had no complication in the current pregnancy. Of the 201 (76.7%) who had had at least two pregnancies, the majority 190 (94.5%) and 140 (69.7%) had attended ANC and had had no complications respectively in the previous pregnancies. (**Table 2**).

Table 2: Showing obstetrics factors of the study participants.

Variable	Frequency (N= 262)	Percentage (%)
ANC frequency		
<8	108	41.2
≥8	154	58.8
Timing of first ANC visit		
Within the first 12 weeks	146	55.7
After the first 12 weeks	116	44.3
Companion to the hospital		
Husband	63	24.0
Friend	15	5.7
Family relative	6	2.3
No one	178	67.9
Comfortable telling others that she is pregnant		
Yes	209	79.8
No	53	20.2
Awareness of current pregnancy		
Missed period	157	59.9
Physiological change	65	24.8
Urine test	40	15.3
Family Planning use		
Yes	130	49.6
No	132	50.4
Gravidity		
1	61	23.3
2 to 4	155	59.2
5 and above	46	17.6
Parity		
0	79	30.2
1 to 4	170	64.9
5 and above	13	5.0
Place of delivery (N= 183)		
Health facility	172	94.0
Home	11	6.0
Miscarriage		
Yes	59	22.5
No	203	77.5
Complications in current pregnancy		
Yes	88	33.6
No	174	66.4
ANC attendance in past pregnancy (N= 201)		
Yes	190	94.5
No	11	5.5
Complication In Past Pregnancy (N=201)		
Yes	61	30.3
No	140	69.7

Source: Primary data (2024)

Health facility factors of the study participants

Generally, the majority, 165 traveled a distance of about five kilometers to reach the health facility making up to 63.0% of the study participants. Regarding waiting at the facility, the majority 172 (65.6%) waited for more than two hours. The majority 175 (66.8%) used a boda boda to come to the health facility and the rest used other means, while 230 (87.8%) involved their husbands in deciding to come to the health facility and the remaining few did not. (**Table 3**)

Table 3: Showing Health facility factors of the study participants.

Variable	Frequency (N= 262)	Percentage (%)
Distance to the facility.		
About 5Km	165	63.0
About 10km	70	26.7
More than 10km	27	10.3
Waiting at the facility		
Less than 2 hours.	90	34.4
More than 2 hours	172	65.6
Transport Means		
Walking	44	16.8
Bicycle	27	10.3
Boda Boda	175	66.8
Vehicle	16	6.1
Husband included in ANC decision-making		
YES	230	87.8
NO	32	12.2

Source: Primary data (2024)

Bivariate analysis for Socio-demographic factors.

On bivariate analysis of socio-demographic factors and late ANC booking using cross-tabulation and binary logistic regression, at a p-value of <0.05, none of the factors was statistically associated with late ANC booking among pregnant women attending ANC at LRRH whereby Age (P=0.628), residence (p=0.549), religion (p=0.412), woman's educational level (p=0.340), woman's occupation (p=0.459), marital status (p=0.888), family size (p=0.977), husband's educational level (p=0.329), husband's occupation (p=0.777), access to a radio (p=0.062), access to a television (p=0.587), access to newspapers (p=0.730), and access to a phone (p=0.160). (**Table 4**).

Table 4: Showing bivariate analysis for Socio-demographic factors.

Variable	ANC Booking		Crude OR	P-value
	12 weeks and below	Above 12 weeks	95%CI	
Age				
15 to 19	12 (42.9%)	16 (57.1%)	Ref	0.628
20 to 24	22 (32.8%)	45 (67.2%)	1.534 (0.620-3.795)	
25 to 29	29 (40.3%)	43 (59.7%)	1.112 (0.459-2.693)	
30 to 34	29 (45.3%)	35 (54.7%)	0.905 (0.370-2.217)	
35 and above	14 (45.2%)	17 (54.8%)	0.911 (0.325-2.551)	
Residence				
Rural area	49 (38.6%)	78 (61.4%)	Ref	0.549
Urban area	57 (42.2%)	78 (57.8%)	0.860 (0.524-1.409)	
Religion				
Catholic	41 (41.0%)	59 (59.0%)	Ref	0.412
Protestant	35 (37.2%)	59 (62.8%)	1.171 (0.657-2.087)	
Pentecostal	23 (42.6%)	31 (57.4%)	0.937 (0.479-1.832)	
Seventh Day Adventist	4 (80.0%)	1 (20.0%)	0.174 (0.019-1.611)	
Muslim	3 (33.3%)	6 (66.7%)	1.390 (0.329-5.878)	
Women's Educational Level				
No Formal Education	17 (44.7%)	21 (55.3%)	Ref	0.340
Primary Education	33 (33.3%)	66(66.7%)	0.989 (0.405-2.416)	
Secondary Education	38 (44.7%)	47 (55.3%)	1.619 (0.754-3.416)	
Post-secondary Education	18 (45.0%)	22 (55.0%)	1.001 (0.464-2.161)	
Woman's Occupation				
Employed	59 (38.6%)	94 (61.4%)	Ref	0.459
Unemployed	47 (43.1%)	62 (56.9%)	0.828 (0.200-5.641)	
Marital status				
Single	7 (38.9%)	11 (61.1%)	Ref	0.888
Married	99 (40.6%)	145(59.4%)	0.932 (0.502-1.365)	
Family Size				
Less than 5	63 (40.4%)	93 (59.6%)	Ref	0.977
Greater or equal to 5	43 (40.6%)	63 (59.4%)	0.992 (0.600-1.641)	
Husband's Education Level				
No Formal Education	2 (50.0%)	2 (50.0%)	Ref	0.329
Primary Education	27 (32.5%)	56 (67.5%	1.136 (0.147-8.757)	
Secondary Education	55 (43.0%)	73 (57.0%)	2.074(0.277-15.527)	
Post-secondary Education	22 (46.8%)	25 (53.2%)	1.327 (0.181-9.719)	
Husband's Occupation				
Employed	102(40.6%)	149(59.4%)	Ref	0.777
Unemployed	4 (36.4%)	7 (63.6%)	0.835 (0.238-2.925)	
Access to a radio				
Yes	46 (34.8%)	86 (65.2%)	Ref	0.062
No	60 (46.2%)	70 (53.8%)	0.624 (0.380-1.026)	
Access to a television				
Yes	36 (42.9%)	48 (57.1%)	Ref	0.587
No	70 (39.3%)	108(60.7%)	1.157 (0.683-1.959)	
Access to a newspaper				
Yes	5 (45.5%)	6 (54.5%)	Ref	0.730
No	101(40.2%)	150(59.8%)	1.238 (0.368-4.164)	
Access to a phone				
Yes	94 (39.2%)	146 60.8%)	Ref	0.160
No	12 (54.5%)	10 (45.5%)	0.537 (0.223-1.291)	

Source: Primary data (2024), OR indicates Odds Ratio.

Bivariate analysis of obstetrics factors.

The factors that were found statistically associated with late ANC booking at p value < 0.05 include; Knowing the ANC frequency (p<0.001), timing of the first ANC (p<0.001), companion (p=0.015), being comfortable telling others that you are pregnant (p<0.001), miscarriage (p=0.006), complication in current pregnancy (0.025), and complication in past pregnancy (p<0.001). Factors that were not statistically associated with late ANC booking included; how a woman knows that she is pregnant, family planning use, gravidity, parity, place of delivery, and ANC attendance in the past pregnancy. (**Table 5**).

Table: Showing bivariate analysis of obstetrics factors

Variable	ANC Booking		Crude OR 95%CI	P-value
	12 weeks and below	Above 12 weeks		
ANC frequency				
<8	12 (13.8%)	75 (86.2%)	Ref	<0.001*
≥8	94 (53.7%)	81 (46.3%)	0.138 (0.070-.272)	
Timing of first ANC visit				
Within the first 12 weeks	95 (65.1%)	51 (34.9%)	Ref	<0.001*
After the first 12 weeks	11 (9.5%)	105 (90.5%)	17.781(8.757-36.101)	
Companion to the hospital				
Husband	36 (57.1%)	27 (42.9%)	Ref	0.015*
Friend	7 (46.7%)	8 (53.3%)	1.524 (0.492-4.719)	
Family relative	2 (33.3%)	4 (66.7%)	2.667(0.455-15.643)	
No one	61 (34.3%)	117 (65.7%)	2.557 (1.422-4.601)	
Comfortable telling others that she is pregnant				
Yes	96 (45.9%)	113 (54.1%)	Ref	<0.001*
No	10 (18.9%)	43 (81.1%)	3.653 (1.743-7.656)	
Knowing that pregnant				
Missed period	70 (44.6%)	87 (55.4%)	Ref	0.054
Physiological change	18 (27.7%)	47 (72.3%)	2.101 (1.121-3.936)	
Urine test	18 (45.0%)	22 (45.0%)	0.983 (0.489-1.976)	
Family Planning use				
Yes	59 (45.4%)	71 (54.6%)	Ref	0.107
No	47 (35.6%)	85 (64.4%)	1.503 (0.915-2.468)	
Gravidity				
1	23 (37.7%)	38 (62.3%)	Ref	0.107
2 to 4	58 (37.4)	97 (62.6%)	1.012 (0.549-1.866)	
5 and above	25 (54.3%)	21 (45.7%)	0.508 (0.234-1.106)	
Parity				
0	34 (43.0%)	45 (57.0%)	Ref	0.064
1 to 4	63 (37.1%)	107 (62.9%)	1.283 (0.745-2.209)	
5 and above	9 (69.2%)	4 (30.8%)	0.336 (0.095-1.183)	
Place of delivery.				
Health facility	68(39.5%)	104 (60.5%)	Ref	0.835
Home	4(36.4%)	7(63.6%)	1.144(0.323-4.058	
Miscarriage				
Yes	33 (55.9%)	26 (44.1%)	Ref	0.006*
No	73 (36.0%)	130 (64.0%)	2.260 (1.255-4.071)	
Complications in current pregnancy				
Yes	44 (50.0%)	44 (50.0%)	Ref	0.025*
No	62 (35.6%)	112 (64.4%)	1.806 (1.073-3.040)	
ANC attendance in past pregnancy				
Yes	78 (41.1%)	112 (58.9%)	Ref	0.773
No	5 (45.5%)	6 (54.5%)	0.836 (0.246-2.835)	
Complication In Past Pregnancy.				
Yes	38(62.3%)	23 (37.7%)	Ref	<0.001*
No	45 (32.1%)	95 (67.9%)	3.488 (1.862-6.533)	

*Source: Primary data (2024), OR indicates Odds Ratio, * is significant at 95% CI with P- value <0.05*

Bivariate analysis for facility factors

The factors that were found statistically associated with late ANC booking at p-value < 0.05 included; waiting at the facility (p<0.001) and including the husband in ANC decision-making (p=0.008). Factors that were not statistically associated with late ANC booking included; distance traveled to reach the facility (p=0.868) and transport means (p=0.053). (**Table 6**).

Table 6: Showing bivariate analysis for facility factors.

Variable	ANC Booking		Crude OR 95%CI	P-value
	12 weeks and below	Above 12 weeks		
Distance to the facility.				
About 5Km	67 (40.6%)	98 (59.4%)	Ref	0.868
About 10km	27 (38.6%)	43 (61.4%)	1.089 (0.614-1.931)	
More than 10km	12 (44.4%)	15 (55.6%)	.0855 (0.376-1.941)	
Waiting at the facility				
More than 2 hours.	48 (27.9%)	124 (72.1%)	Ref	<0.001*
Less than 2 hours.	58 (64.4%)	32 (35.6%)	0.214 (0.124-0.368)	
Transport Means				
Walking	10 (22.7%)	34 (77.3%)	Ref	0.053
Bicycle	14 (51.9%)	13 (48.1%)	0.273 (0.097-0.767)	
Boda boda	75 (42.9%)	100 (57.1%)	0.392 (0.182-0.844)	
Vehicle	7 (43.8%)	9 (56.3%)	0.378 (0.112-1.273)	
Husband included in ANC decision-making.				
YES	100 (43.5%)	130 (56.5%)	Ref	0.008*
NO	6 (18.8%)	26 (81.3%)	3.333 (1.322-8.408)	

*Source: Primary data (2024), OR indicates Odds Ratio, * is significant at 95% CI with P- value <0.05.*

Multivariate analysis for the independent factors.

Multivariate analysis was conducted using a binary logistic regression to determine factors contributing to late ANC booking among pregnant women attending ANC at LRRH, Lira City.

The factors that were found statistically associated with late ANC booking at p-value <0.02 included; Knowing the recommended ANC frequency for a normal pregnancy (p<0.001), recommended timing of the first ANC (p<0.001), waiting at the facility (p=0.013), being comfortable telling others that one was pregnant (p= 0.016), and having a complication in the past pregnancy (p<0.001). (**Table 7**).

Table 7: Showing multivariate analysis for the independent factors.

Variable	ANC Booking			Adjusted OR 95%CI	P-value
	12 weeks and below	Above 12 weeks			
ANC frequency					
<8	12 (13.8%)	75 (86.2%)		Ref	
≥8	94 (53.7%)	81 (46.3%)		0.092(0.030-0.289)	<0.001*
Timing of first ANC visit					
In the first 3 months	95 (65.1%)	51 (34.9%)		Ref	
After the first 3 months	11 (9.5%)	105 (90.5%)		68.070(15.972-290.104)	<0.001*
Companion to the hospital					
Husband	36 (57.1%)	27 (42.9%)		Ref	
Friend	7 (46.7%)	8 (53.3%)		0.040(0.002-0.953)	0.047
Family relative	2 (33.3%)	4 (66.7%)		0.000(0.000)	1.000
No one	61 (34.3%)	117 (65.7%)		1.701(0.658-4.397)	0.273
Comfortable telling others that she is pregnant					
Yes	96 (45.9%)	113 (54.1%)		Ref	
No	10 (18.9%)	43 (81.1%)		7.308(1.455-36.696)	0.016*
Miscarriage					
Yes	33 (55.9%)	26 (44.1%)		Ref	
No	73 (36.0%)	130 (64.0%)		2.855(0.924-8.824)	0.068
Complications in current pregnancy					
Yes	44 (50.0%)	44 (50.0%)		Ref	
No	62 (35.6%)	112 (64.4%)		1.265(0.495-3.231)	0.623
Complication In Past Pregnancy.					
Yes	38(62.3%)	23 (37.7%)		Ref	
No	45 (32.1%)	95 (67.9%)		8.979(2.639-30.557)	<0.001*
Waiting at the facility					
More than 2 hours.	48 (27.9%)	124 (72.1%)		Ref	
Less than 2 hours.	58 (64.4%)	32 (35.6%)		0.326(0.135-0.786)	0.013*
Husband included in ANC decision-making.					
YES	100 (43.5%)	130 (56.5%)		Ref	
NO	6 (18.8%)	26 (81.3%)		0.467(0.077-2.825)	0.407

*Source: Primary data (2024), OR indicates Odds Ratio, * is significant at 95% CI with P- value <0.02.*

Discussion

Prevalence of late ANC booking.

This study assessed the prevalence of late ANC booking among pregnant women attending ANC at LRRH, Lira City and it was found to be high at 59.5%. This indicates that the majority of pregnant women attend ANC after 12 weeks.

These findings are somewhat similar to those from the Uganda Health Sector Performance Report for the financial year (FY) 2019/2020 in which Lira City's prevalence of Late ANC booking was high at 73%. Comparable studies done across Uganda still revealed a high prevalence of late ANC booking for instance, 81.1% in Masindi, Western Uganda, 89% in Bududa, Eastern Uganda, and 85.3% in Kampala, Central Uganda (Kisuule et al., 2013; Okwany & Kimono, 2023; Omona et al., 2021). Furthermore, the findings are somewhat similar to the high national prevalence of 71% (UBoS, 2018). This similarity could be due to similarity in the settings while the slight variation in the figures could be due to the difference in the number of respondents in each comparable study.

However, the findings of this study are higher than the 15.2% observed in the developed regions (Moller et al., 2017). This variation could be due to differences in socio-demographics as well as the countries' promotional policies. This implies that more effort should be put into lowering late ANC booking given that it is still high and yet it is significantly associated with poor pregnancy outcomes like preterm delivery, low birth weight, fetal growth restriction, neural tube defects, maternal anemia, and maternal and fetal death(Hofmeyr et al., 2023; Jinga et al., 2019).

Factors associated with Late ANC booking among pregnant women attending ANC at LRRH, Lira City.

Given that late ANC booking is highly linked to poor pregnancy outcomes, it was necessary to assess the factors that are significantly associated with late ANC booking. The findings in this study indicated that women who knew that the recommended number of ANC visits in a normal pregnancy were eight were 0.092 [adjusted Odds

ratio (AOR)= 0.092; p=0.002; 95%CI; 0.030-0.289] times respectively less likely to book late for ANC compared to their counterparts who perceived that they were less than eight. This might be because their counterparts thought that the number of times was less and could be covered even after the first 12 weeks. This finding was consistent with the findings from similar studies conducted in Masindi district and Ethiopia which reported similar observations (Azeze & Adema, 2020; Omona et al., 2021). In contrast, other studies by Teshale and Tesema (2020)and Debelo and Danusa (2022)revealed that there was no significant association between the perceived number of ANC visits in a single pregnancy and late ANC booking. A possible explanation for this variation could be the difference in number of study participants and settings.

In this study, women who knew that the recommended timing of the first ANC visit was after the first 12 weeks were 68.070 [AOR= 68.070; p<0.001; 95%CI; 15.972-290.104] times more likely to book late for ANC compared to their counterparts who knew that it was within the first 12 weeks. A possible explanation for this is that the ignorance made them to abide by it. The findings are in line with the findings of similar studies carried out in Ethiopia, South Africa, and the Masindi district which noted the same observations(Azeze & Adema, 2020; Kisaka & Leshabari, 2020; Omona et al., 2021; Tesfaye et al., 2021). However, the study findings differ from those in comparable studies conducted by Teshale and Tesema (2020)and Debelo and Danusa (2022)revealed that there was no significant association between knowing the recommended timing of the first ANC visit and late ANC booking. A possible justification for this variation could be the difference in number of study participants and settings.

Also, in this study, waiting for so long at the facility was identified as a predictor for late booking with participants who reported never waiting for so long having 0.326 [AOR= 0.326; p=0.013; 95%CI; 0.135-0.786] times less likely to book late for ANC compared to their counterparts who over waited. Possibly, this could be attributed to the resentment developed within these women leading to delayed booking. This finding was in support of findings from comparable studies in Tanzania, South Africa, and Bududa district that reported for so long at the facility was a significant predictor of late booking for ANC (Jinga et al., 2019; Kisaka & Leshabari, 2020; Okwany & Kimono, 2023).

According to the findings of this study, pregnant women who never had any complications in their previous pregnancies were 8.979 [AOR= 8.979; p<0.001; 95%CI; 2.639-30.557] times more likely to book late for ANC compared to their counterparts who had experienced any complication in the past pregnancy. This might be because these women who never had any complications had nothing to fear, unlike their counterparts who feared the re-occurrence of the same problem. These findings sharply agreed with the findings of Kisaka and Leshabari (2020)and Shewaye et al. (2023)who noted similar observations.

In this study, being uncomfortable telling others that one was pregnant was another predictor for late ANC booking whereby women who were uncomfortable telling others that they were pregnant were 7.308 [AOR= 7.308; p= 0.016; 95%CI= 1.455- 36.696] times more likely to book late for ANC unlike their counterparts who were comfortable. A possible explanation for this finding could be due to the fear of the associated stigma hence causing the delay to book for ANC among those women. This finding was in agreement with the findings from a comparable study done in North Eastern Ethiopia which revealed similar findings (Shewaye et al., 2023).

Conclusion
Late initiation for the first ANC visit among pregnant women attending ANC at LRRH is still alarming at 59.5%. According to this study, the predictors of late ANC booking were perceiving that the recommended number of times to attend ANC in a normal pregnancy was less than eight, perceiving that ANC should be initiated after the first 12 weeks of pregnancy, long waiting at the facility, being uncomfortable telling others that one was pregnant, and not having any complication in the past pregnancy. Therefore, intervention efforts to improve early first ANC booking require targeting these hindering factors by paying special attention to reducing the waiting time at the facility, educating the mothers on the recommended ANC booking time and minimum number of times to attend ANC when pregnant, and those who never had any complication in pregnancy to attend ANC timely to continue preventing the likely poor pregnancy outcomes due to late ANC booking.

Recommendations
The number of times for ANC attendance for a normal pregnancy (8 times) and the repercussions of late ANC booking should be routinely given to all women of reproductive ages.

Increasing access to support groups to help women who are uncomfortable disclosing that their pregnant to timely engage them such that they can book early for ANC.

Strengthening health extension program with due attention to Maternal and Child Health, health education, promotion, and communication packages designed in local languages using posters, and radios among others so as to reach even nonpregnant women with an emphasis on Late ANC booking.

OPERATION DEFINITIONS
Pregnancy: A condition and period when a woman has products of conception developing inside her uterus, confirmed by laboratory analysis or imaging.
Contact: Routine ANC attendances by the pregnant woman to the health facility.
Booking: The first contact.
Early ANC booking: The first contact happens within the first 12 weeks of pregnancy.

Prevalence: The proportion of Late ANC booking.
Associated Factors: Situations or events that influence a pregnant to report to the health facility for ANC booking.

LIST OF ABBREVIATIONS AND ACRONYMS.
ANC: Antenatal Care.
LRRH: Lira Regional Referral Hospital
MoH: Ministry of Health.
PMO: Principal Medical Officer.
UBoS: Uganda Bureau of Statistics.
UDHS: Uganda Demographic and Health Survey.
WHO: World Health Organization

CONFLICT OF INTEREST
The researcher declares no conflict of interest.

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REFERENCES.
1. Adulo, L. A., & Hassen, S. S. (2023). Magnitude and factors associated with late initiation of antenatal care booking on the first visit among women in rural parts of Ethiopia. Journal of Racial and Ethnic Health Disparities, 10(4), 1693-1702. https://doi.org/10.1007/s40615-022-01354-y
2. Azeze, G. A., & Adema, B. G. (2020). Delay On First Antenatal Care Visit And Associated Factors Among Pregnant Women Attending Antenatal Care In Boditi Town, Southern Ethiopia: 2019. Int J Biotech Trends Technol (IJBTT). https://doi.org/10.14445/22490183/IJBTT-V10I1P604
3. Brown, L. L., Cohen, B. E., Edwards, E., Gustin, C. E., & Noreen, Z. (2021). Physiological need for calcium, iron, and folic acid for women of various subpopulations during pregnancy and beyond. Journal of Women's Health, 30(2), 207-211. https://doi.org/10.1089/jwh.2020.8873
4. Debelo, B. T., & Danusa, K. T. (2022). Level of late initiation of antenatal care visit and associated factors amongst antenatal care attendant mothers in Gedo General Hospital, West Shoa Zone, Oromia Region, Ethiopia. Frontiers in Public Health, 10, 866030. https://doi.org/10.3389/fpubh.2022.866030
5. Dorji, T., Das, M., Van den Bergh, R., Oo, M. M., Gyamtsho, S., Tenzin, K., . . . Ugen, S. (2019). "If we miss this chance, it's futile later on"-late antenatal booking and its determinants in Bhutan: a mixed-methods study. BMC pregnancy and childbirth, 19, 1-13. https://doi.org/10.1186/s12884-019-2308-5
6. Downe, S., Finlayson, K., Tunçalp, Ö., & Metin Gülmezoglu, A. (2016). What matters to women: a systematic scoping review to identify the processes and outcomes of antenatal care provision that are important to healthy pregnant women. BJOG: An International Journal of Obstetrics & Gynaecology, 123(4), 529-539. https://doi.org/10.1111/1471-0528.13819
7. Ebonwu, J., Mumbauer, A., Uys, M., Wainberg, M. L., & Medina-Marino, A. (2018). Determinants of late antenatal care presentation in rural and peri-urban communities in South Africa: A cross-sectional study. PloS one, 13(3), e0191903. https://doi.org/10.1371/journal.pone.0191903
8. Gidey, G., Hailu, B., Nigus, K., Hailu, T., G/her, W., & Gerensea, H. (2017). Timing of first focused antenatal care booking and associated factors among pregnant mothers who attend antenatal care in Central Zone, Tigray, Ethiopia. BMC research notes, 10, 1-6. https://doi.org/10.1186/s13104-017-2938-5
9. Grum, T., & Brhane, E. (2018). Magnitude and factors associated with late antenatal care booking on the first visit among pregnant women in public health centers in the central zone of Tigray Region, Ethiopia: A cross-sectional study. PloS one, 13(12), e0207922. https://doi.org/10.1371/journal.pone.0207922
10. Hofmeyr, G. J., Black, R. E., Rogozińska, E., Heuer, A., Walker, N., Ashorn, P., . . . Koivu, A. (2023). Evidence-based antenatal interventions to reduce the incidence of small vulnerable newborns and their associated poor outcomes. The Lancet, 401(10389), 1733-1744. https://doi.org/10.1016/S0140-6736(23)00355-0
11. Izuka, E., Obiora-Izuka, C., Asimadu, E., Enebe, J., Onyeabochukwu, A., & Nwagha, U. (2023). Effect of Late Antenatal Booking on Maternal Anemia and Fetus Birth Weight on Parturients in Enugu, Nigeria: An Analytical Cross-Sectional Study. Nigerian Journal of Clinical Practice, 26(5), 558-565. doi:10.4103/njcp.njcp_117_22.
12. Jiee, S. F. A. (2018). Late Antenatal booking and its predictors in Lundu district of Sarawak, Malaysia. International Journal of Public Health Research, 8(2), 956-964.
13. Jihad, M., Woldemichael, K., & Gezehagn, Y. (2022). Determinants of late initiation for antenatal care follow up among pregnant mothers attending public health centers at Jimma town, South West Ethiopia, 2021: an unmatched case-control study.medRxiv, 2022.2001.

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2020.22269582. https://doi.org/10.1101/2022.01.20.22269582

14. Jinga, N., Mongwenyana, C., Moolla, A., Malete, G., & Onoya, D. (2019). Reasons for late presentation for antenatal care, healthcare providers' perspective. BMC health services research, 19, 1-9. https://doi.org/10.1186/s12913-019-4855-x

15. Kisaka, L., & Leshabari, S. (2020). Factors associated with first antenatal care booking among pregnant women at a reproductive health clinic in Tanzania: a cross-sectional study. EC Gynaecology, 9(3), 1.

16. Kisuule, I, Kaye, D. K., Najjuka, F., Ssematimba, S. K., Arinda, A., Nakitende, G., & Otim, L. (2013). Timing and reasons for coming late for the first antenatal care visit by pregnant women at Mulago Hospital, Kampala Uganda. BMC pregnancy and childbirth, 13, 1-7. https://doi.org/10.1186/1471-2393-13-121

17. McCauley, H., Lowe, K., Furtado, N., Mangiaterra, V., & van den Broek, N. (2022). What are the essential components of antenatal care? A systematic review of the literature and development of signal functions to guide monitoring and evaluation. BJOG: An International Journal of Obstetrics & Gynaecology, 129(6), 855-867. https://doi.org/10.1111/1471-0528.17029

18. Ministry Of Health, M. (2020). Annual Health Sector Performance Report Financial Year 2019/20. Retrieved from https://www.health.go.ug/cause/annual-health-sector-performance-report-financial-year-2019-20/

19. Ministry Of Health, M. (2022). Essential Maternal and Newborn Clinical Care Guidelines for Uganda.

20. Moller, A.-B., Petzold, M., Chou, D., & Say, L. (2017). Early antenatal care visit: a systematic analysis of regional and global levels and trends of coverage from 1990 to 2013. The Lancet Global Health, 5(10), e977-e983. https://doi.org/10.1016/S2214-109X(17)30325-X

21. Mulungi, A., Mukamurigo, J., Rwunganira, S., Njunwa, K., & Ntaganira, J. (2023). Prevalence and risk factors for delayed antenatal care visits in Rwanda: an analysis of secondary data from Rwanda demographic health survey 2019-2020. The Pan African Medical Journal, 44. https://doi.org/10.11604/pamj.2023.44.74.37570

22. Ndomba, A., Ntabaye, M., Semali, I., Kabalimu, T., Ndossi, G., & Mashalla, Y. (2023). Prevalence of late antenatal care booking among pregnant women attending public health facilities of Kigamboni Municipality in Dar es Salaam region,

Tanzania. African Health Sciences, 23(2), 623-631. https://doi.org/10.4314/ahs.v23i2.72

23. Oduro, C. A., Opoku, D. A., Osarfo, J., Fuseini, A., Attua, A. A., Owusu-Ansah, E., . . . Mohammed, A. (2023). The burden and predictors of late antenatal booking in a rural setting in Ghana. Nursing Open, 10(4), 2182-2191. https://doi.org/10.1002/nop2.1467

24. Okwany, J., & Kimono, A. (2023). FACTORS CONTRIBUTING TO LATE ANTENATAL CARE BOOKING AMONG PREGNANT WOMEN IN BUDUDA HOSPITAL IN BUDUDA DISTRICT. Student's Journal of Health Research Africa, 4(6), 9-9.

25. Omona, K., Kemigisha, I., Mugume, T., Muhanguzi, A., Lubega, S., & Atuhaire, O. (2021). Factors Associated With Late Antenatal Enrolment Among Pregnant Women Aged 15-49 Years At Masindi Hospital. https://doi.org/10.47760/cognizance.2021.v01i03.003

26. Osterman, M. J., & Martin, J. A. (2018). SystemTiming and adequacy of prenatal care in the United States, 2016.

27. Shewaye, M., Cherie, N., Molla, A., Tsegaw, A., Yenew, C., Tamiru, D., . . . Dessie, A. M. (2023). A mixed-method study examined the reasons why pregnant women late initiate antenatal care in Northeast Ethiopia. PloS one, 18(7), e0288922. https://doi.org/10.1371/journal.pone.0288922

28. Tadele, F., Getachew, N., Fentie, K., & Amdisa, D. (2022). Late initiation of antenatal care and associated factors among pregnant women in Jimma Zone Public Hospitals, Southwest Ethiopia, 2020. BMC health services research, 22(1), 632. https://doi.org/10.1186/s12913-022-08055-6

29. Tesfaye, M., Dessie, Y., Demena, M., & Yosef, T. (2021). Late antenatal care initiation and its contributors among pregnant women at selected public health institutions in Southwest Ethiopia. Pan African Medical Journal, 39(1). https://doi.org/10.11604/pamj.2021.39.264.22909

30. Teshale, A. B., & Tesema, G. A. (2020). Prevalence and associated factors of delayed first antenatal care booking among reproductive age women in Ethiopia. https://doi.org/10.1371/journal.pone.0235538

31. Thogarapalli, N., Mkandawire, P., Kangmennaang, J., Luginaah, I., & Arku, G. (2016). Gestational age at first antenatal visit in Namibia. International journal of public health, 61, 1089-1097. https://doi.org/10.1007/s00038-016-0885-x

32. Tumwizere, G., Mbonye, M., & Ndugga, P. (2023). Determinants of late antenatal care attendance among high parity women in Uganda:

analysis of the 2016 Uganda demographic and health survey. https://doi.org/10.21203/rs.3.rs-2802283/v1

33. UBoS, I. (2018). Uganda demographic and health survey 2016. Kampala, Uganda, and Rockville, Maryland, USA.

34. UDHS. (2022). Uganda Demographic and Health Survey. Retrieved from https://www.ubos.org/wp-content/uploads/publications/09_2023UDHS_2022_Key_Findings_Presentation_B.pdf

35. Venyuy, M. A., Cumber, S. N., Nkfusai, C. N., Bede, F., Ijang, Y. P., Wepngong, E., . . . Tebeu, P. M. (2020). Determinants to late antenatal clinic start among pregnant women: the case of Saint Elizabeth General Hospital, Shisong, Cameroon. The Pan African Medical Journal, 35. https://doi.org/10.11604/pamj.2020.35.112.18712

36. WHO, W. H. O. (2015). Strategies towards ending preventable maternal mortality (EPMM).

37. WHO, W. H. O. (2016a). WHO recommendations on antenatal care for a positive pregnancy experience: World Health Organization.

38. WHO, W. H. O. (2016b). World Health Statistics 2016 [OP]: Monitoring Health for the Sustainable Development Goals (SDGs): World Health Organization.

39. Wolderufael, T. S., Areda, T., Ganebo, U., & Gebreyesus, F. F. (2020). Determinants of Late Initiation for First Antenatal Care Visit Among Pregnant Women in Public Health Institutions, Dale District, Southern Ethiopia; Unmatched Case-Control Study. Science Research, 8(2), 31-38. https://doi.org/10.11648/j.sr.20200802.11

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