

The Magnitude and Factors Associated with Delay in Initiation of the First Antenatal Care Visit among Pregnant Women at Hoima Regional Referral Hospital, Western Uganda

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ABSTRACT

For the best possible outcomes for the health of both the mother and the foetus, timely antenatal care (ANC) must be started. Delays in obtaining ANC services, however, continue to be a serious problem, especially in areas with low resources like Western Uganda. To improve the health of mothers and children, it is crucial to comprehend the extent and contributing reasons of delayed beginning of the first ANC visit. In Western Uganda, at the Hoima Regional Referral Hospital, a cross-sectional study was carried out. Pregnant women receiving ANC services completed a structured questionnaire that was used to gather information on sociodemographic traits, obstetric history, ANC knowledge, and factors influencing the first ANC visit date. To analyse the data, both descriptive and inferential statistics were applied. Pregnant ladies totaling 6-16 weeks were included in the study. At the first antenatal care visit, the mean gestational age was 9.65 weeks, and 8.7% of the women started ANC in the first trimester. Low educational attainment, multiparity, ignorance of the significance of early ANC, a long commute to the health facility, and financial restrictions were all linked to the delayed commencement of ANC. Even with the established advantages of early ANC beginning, a sizable fraction of pregnant women in Western Uganda begins ANC later than necessary. Strategies to enhance the healthcare-seeking behaviour of mothers should concentrate on lowering socioeconomic barriers, raising awareness of the value of early ANC, and enhancing access to ANC services, especially for women living in rural regions. Reducing maternal and neonatal morbidity and death in the area requires such measures.

Keywords: Antenatal care, Childbirth, SDGs, Maternal deaths

INTRODUCTION

Every day around the world, approximately 830 women die from preventable causes related to pregnancy and childbirth. 99% of all maternal deaths occur in developing countries, mostly in low-resource settings. One of the SDGs targets reducing the global maternal mortality ratio to less than 70 per 100,000 live births. Skilled care before, during, and after childbirth can save the lives of women and newborn babies [1]. Globally, during the period 2000–2010, about 53% of pregnant women attended the recommended minimum of four times antenatal care. The proportion of pregnant women in developing countries who attended at least one antenatal care visit has increased from approximately 64% in 1990 to about 81% in 2009, but in low-income countries, only 39% of pregnant women attended four times or more antenatal care during 2000–[2]. ANC attendance is a strong predictor of maternal and foetal outcomes. Studies done in India and Nigeria showed a significant association between maternal morbidity and mortality and the non-use of ANC. [3, 4]. According to UDHS 2011, only 21% of women in Uganda made their first ANC visit before the fourth month of pregnancy. The first ANC visit should be conducted in the first trimester. Identification of complications on such early visits enables the early institution of interventions to alleviate or mitigate the effects of such complications on mothers and unborn babies.[3]. A systematic review has identified factors affecting the utilisation of ANC services in developing countries. These include maternal education, husband's education, marital status, availability, cost, household income, women's employment, media exposure [5, 6] and having a history of obstetric complications. Cultural beliefs and ideas about pregnancy also influenced ANC use in some countries. Higher parity hurt adequate attendance [5]. Several studies found relationships between economic factors and ANC utilisation and identified cost as a barrier to uptake [7]. Good care during pregnancy is important for the health of the mother and the development of the unborn baby. Pregnancy is a crucial time to promote healthy behaviours and parenting skills. Good ANC links the woman and her family with the formal health system increases the chance of using a skilled attendant at birth and contributes to good health throughout the life cycle. Inadequate care during this time breaks a critical link in the continuum of care and affects both women and babies [8]. The determination of the magnitude and factors associated with the delay in initiating the first ANC

visit is the main purpose of our study. Certain pre-existing conditions become more severe during pregnancy and are associated with increased maternal and newborn complications as well as death [9]. Pregnant women with late initiation of ANC will miss many services and are likely to attain poor pregnancy outcomes [10, 11]. The early ANC visit allows the identification of complications and enables early intervention to alleviate and mitigate the effects of complications on mothers and unborn babies [10, 12, 13]. The determination of factors associated with the delay in initiating the first ANC visit is important to improve ANC and solve the problem of maternal mortality. The study was designed to determine the magnitude and factors associated with delay in initiation of the first antenatal care (ANC) visit among pregnant women at Hoima Regional Referral Hospital (HRRH).

METHODOLOGY

Purpose of the Study

The purpose of this study was to describe the magnitude of delay in the initiation of the first ANC visit among pregnant women at HRRH. Factors associated with delay in initiating the first ANC visit among pregnant women at HRRH were also identified and described. This information was used to recommend ways in which antenatal services in Uganda can be more utilised by pregnant women.

Study design

A quantitative and descriptive cross-sectional study was used to determine the magnitude and factors associated with delay in the initiation of the first ANC visit among pregnant women at HRRH.

Quantitative

The research project followed quantitative methodology, which has the following characteristics: It incorporates logistical and deductive reasoning as the researchers examine factors associated with delay in the initiation of the first ANC visit. Structured interviews, questionnaires, and observations were used to generate numerical data. Statistical analyses were conducted to determine significant relationships and identify differences among pregnant women who initiate ANC visits early and those who delay. The findings were generalised to the population of western Uganda. The study researchers used a self-developed questionnaire to collect numerical data from the pregnant women.

Descriptive

In this study, the researcher intended to describe the magnitude and factors associated with delay in the initiation of the first ANC visit among pregnant women at HRRH. The information generated from this study was used to recommend strategies that promoted antenatal service usage by pregnant women in Uganda and the world at large.

Area of Study

This study was carried out in the ANC clinic at HRRH, which is located in Hoima district, Western Uganda. The study setting was selected because the problem under study is prevalent on the ground and the medical community is representative enough of other communities in the district.

Study population.

The study population consisted of pregnant women presenting at the antenatal clinic at HRRH between 8 a.m. and 12 p.m. on Mondays and Fridays.

Inclusion criteria.

The inclusion criteria for this study were as follows: Pregnant women attending ANC at HRRH. Signed informed consent to participate in the study for those above 18 years; Signed assent form by parent or guardian for those below 18 years.

Exclusion criteria.

Pregnant women who refused to sign consent and those with medical and/or obstetric emergencies were excluded from the study.

Sample size estimation

The sample size for the study was determined using a sample size formula by Kish Leslie, with a 95% confidence interval and error shown below [14].

Where;

n is the sample size estimate of study participants.

$Z_{\alpha/2}$ = Standard Z value at 95% confidence interval, corresponding to 1.96

p = prevalence of delayed initiation of first antenatal clinic attendance to be 79%.

d = the sampling error; 5%

$n = 254.928576$

Approximately 255 respondents

Therefore, this study will use a sample of 255 respondents.

Sampling procedure

All pregnant women who were presenting for ANC services at HRRH and met our inclusion criteria were sampled. After allocating numbers based on the first come, first served rule, a one-in-three sample was selected using random

sampling with the replacement method. The questionnaire was prepared in English and translated into the local language, Runyoro, before the start of the fieldwork. To ensure that the questions were clear and understood by both the data collectors and the respondents, the questionnaire was pretested and further refined based on the results. The questionnaire consisted of three parts: biographical data, previous obstetric history, and current obstetric history. To ensure consistency in the way the questionnaire is filled, its administration was restricted to the data collector, who wrote the responses that the mother dictated.

Data collection

The data collection was conducted in an ANC clinic. A data collector obtained verbal and written consent to participate in the study from the mother. After agreeing to participate, a questionnaire was filled out anonymously before discharge from the clinic. It took about 5–10 minutes to fill out the questionnaire. The filling of the questionnaire was not to interfere with ANC service provision to the mother. The right of each patient to participate or opt out of the study was respected. The data collector was then to confirm some key elements of the study using the ANC card before the mother was discharged. In the event of an information mismatch, clarification was sought from the mother before leaving the clinic.

Data analysis

The collected information and data from participants were entered and stored in Epi Info version 7.2.0.1 and imported into STATA version 14 statistical software. Descriptive analysis of the data was done using frequencies and percentages. Logistic regression analysis was used for inferential statistics. Variables that are significant in univariate analysis were used to fit a multivariate model that explains significant predictors of delay in the initiation of first antenatal care visits among pregnant women.

Quality Control

The supervisor was assigned to supervise the data collection process and perform quality checks. Three days of training were given to both the data collectors and the supervisors and were managed by the investigators.

Data dissemination

A copy of the research results was handed over to Kampala International University Teaching Hospital, western campus. I retained a copy for myself for future reference.

Ethical considerations

Permission to carry out the study was obtained from Kampala International University, Western Campus, after which permission from Hoima Regional Referral Hospital was obtained. Each respondent gave informed verbal and written consent after being told the purpose and procedures of the study. Culture was respected, and all responses were kept confidential and anonymous.

RESULTS

Socio-demographic data

Table 1: Shows the Socio-demographic findings

Variables	Frequency	Per cent
Age		
Below 20 years	96	40.0
20-34 years	120	50.0
Above 34 years	24	10.0
Ethnicity		
Banyoro	124	51.7
Batooro	40	16.7
Others	76	31.6
Religion		
Pentecostal	44	18.3
Catholic	104	43.3
Moslem	36	15.0
SDA	8	3.3
Anglican	48	20.1
Education level		
None	44	18.3
Primary	88	36.7
Secondary	56	23.3
Tertiary/ university	52	21.7
Marital status		
Single	80	33.3
Married	140	58.3
Divorced	8	3.3
Widow	12	5.1

Table 1 shows that the majority 120(50.0%) were aged 21-34 years, the majority 124(51.7%) were Banyoro by tribe, 104 (43.3%) were Catholics by religion, the majority 88(36.7%) were of primary level of education, and lastly, majority 140 (58.3%) of the participants were married.

Portion of mothers who delay to initiate first antenatal care at HRRH

Table 2: Shows the Portion of mothers who delay to initiate first antenatal care at HRRH

Initiation of first antenatal care	Frequency	Per cent
Early initiation	68	28.3
Late initiation	172	71.7
Total	240	100

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Table 2 above, shows that the majority 172(71.7%) initiated their first antenatal care visit late while 68 (28.3%) initiated their first antenatal care visit early.

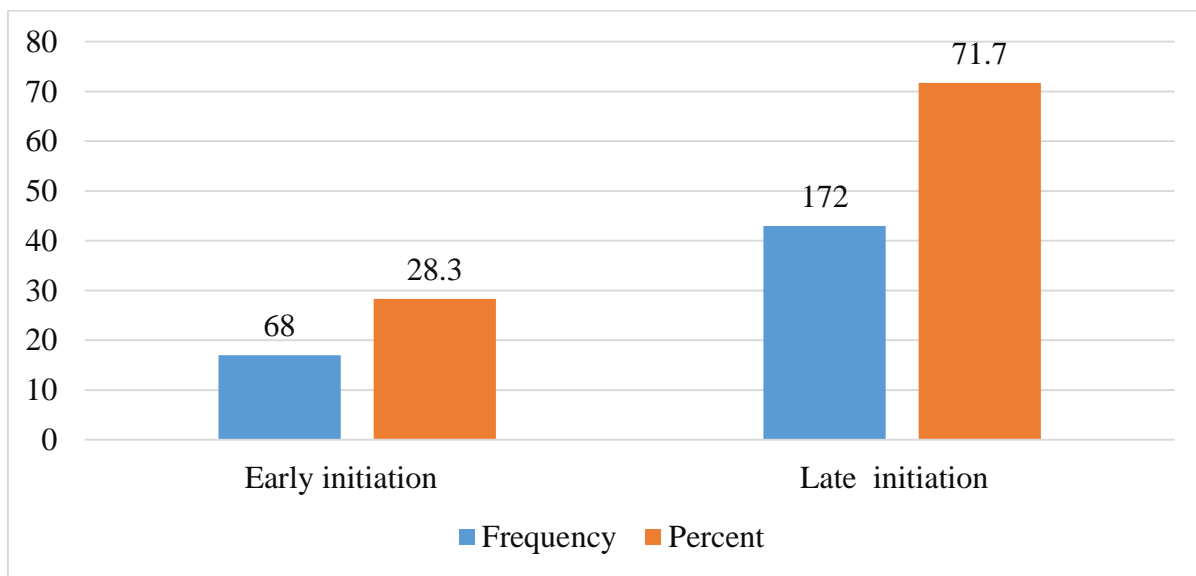


Figure 1: Prevalence of late initiation of antenatal care among pregnant mothers

Figure 1 above shows that the portion of mothers who initiated the first antenatal care late was 172(71.7%).

Factors associated with delay in initiating first antenatal care among pregnant mothers at HRRH
Table 3: Bivariate analysis of factors associated with delay in initiating first antenatal care among pregnant mothers

VARIABLES	CATEGORIES	First antenatal care visit		Odd Ratio	P-Value
		Late initiation	Early initiation		
Age	Below 20 years	76	20	0.901	0.147
	21-34 years	80	40		
	Above 35 years	16	8		
Ethnicity	Banyoro	44	36	1.370	0.784
	Batoro	16	24		
	Others	64	12		
Religion	Pentecostal	32	12	0.877	0.311
	Catholic	88	16		
	Moslem	20	16		
	SDA	5	3		
	Anglican	27	19		
Marital status	Married	96	44	1.480	0.390
	Single	67	13		
	Widow	3	9		
	Divorced	7	1		
Level of education	Un educated	17	27	2.43	0.008
	Primary	64	24		
	Secondary	45	11		
	Tertiary	41	11		
Gestational age	≤13 weeks	53	15	1.035	0.531
	14-28 week	80	48		
	≥ 29 weeks	3	5		
Husband support	Yes	78	22	0.876	0.123
	No	92	48		
Gravidity	Primigravida	66	10	0.23	0.011
	Multigravida	112	52		
Mothers' attitude towards ANC	Poor	32	4	2.811.876	0.523
	Good/fair	80	28		
	Excellent	59	31		

From Table 3 above, age, level of education husband support, and gravidity proceeded to the multivariate stage since they had p-values less than 0.2.

Multivariate analysis of factors associated with delay in initiating first antenatal care among pregnant mothers**Table 4: multivariate analysis of factors associated with delay in initiating first antenatal care among pregnant mothers**

		aOR (95% CI)	P-value
Age	Below 20 years	2.03 (1.07-3.74)	0.062
	20-34 years	0.51(0.33-0.77)	0.153
	Above 34 years	1.00	
Level of education	Uneducated	2.37(0.73-7.73)	0.002
	Primary	0.86(0.32-2.34)	0.77
	Secondary	1.84(1.29-5.42)	0.74
	Tertiary	1.00	
Husband support	Yes	0.63(0.33-0.77)	0.062
	No	1.00	
Gravidity	Multigravida	2.03(1.07-3.77)	0.032
	Primigravida	1.00	

Table 4 shows level of education (uneducated) and gravidity were significantly related to late initiation of antenatal care among pregnant mothers; that is the uneducated were twice more likely to delay in initiating the first-time antenatal care as compared to pregnant mothers of the tertiary level of education (OR=2.37; 95% CI = 0.73-7.73). While the multigravida mothers were also twice as likely to delay in initiating the first-time antenatal care as compared to primigravida pregnant mothers (OR=2.03; 95% CI = 1.07-3.77).

DISCUSSION

This study found that the portion of mothers who initiated the first antenatal care late was 172 (71.7%). This was consistent with results in a study done in South Eastern Tanzania by Gross, *et al.* [15] among 405 pregnant women, where only 71% initiated first ANC attendance late (after the first four months of pregnancy as recommended by the WHO). Also consistent with findings in a study done by Ngowi, *et al.* [16] in rural districts of Zambia, where the prevalence of late ANC attendance was 72.0%. The study finding was higher than the findings in a study done by Rwabilimbo, *et al.* [17], where in South Africa's urban and rural settings, an overall prevalence among urban women of late ANC initiation was 54%, while an overall prevalence among rural women of late ANC initiation was 55%. Also, there were lower findings in the study done by Banda, *et al.* [18] in urban districts of Zambia, where the prevalence of late ANC attendance was 68.6%. However, the study findings were low when compared to a survey done in three districts in Tanzania by Exavery *et al.* [19], which found the prevalence of delayed first ANC visits was 81.5%. The median duration of pregnancy at the first ANC visit was 5.1 months (5.0 months in urban areas and 5.2 months in rural areas). In conclusion, the prevalence of late initiation of antenatal care in this study is high.

In this study, the level of education (uneducated) was significantly related to late initiation of antenatal care among pregnant mothers; that is, the uneducated were twice as likely to have late initiation of antenatal care as compared to pregnant mothers of the tertiary level of education. This finding was in line with a study done in Ethiopia by Tekelab and Berhanu [20], who found that women's educational status is highly correlated with the timing of antenatal care; that is, women who had lower education or none were booked later than those with higher education (low education increased the odds of late ANC by 4). Therefore, lower education increases the odds of a delayed first ANC visit.

In this study, multigravida mothers were also twice as likely to delay initiating first-time antenatal care as compared to primigravida pregnant mothers. This finding is consistent with the finding in a study by Exavery, A. *et al.* [19], which showed that the higher the gravidity, the lower the proportion of women initiating ANC early—that is, more than a quarter (28.3%) of gravid one women initiated ANC in the 1st trimester. This proportion was 16.5% and 15.2% among women whose gravidity was 2-4 and >4 pregnancies, respectively. Also in line with a study done by Ewunetie *et al.* [21] among pregnant women attending antenatal care in a Sudanese government hospital, the majority of

participants utilised ANC services (86.5%) during their pregnancy because most of them were primigravida and it was their first time. Another study by Tumwizere [22] established that there was a tendency for default and late registration for ANC among women of high gravidity. It is possible that these women feel more confident after previous experience and feel that attending a clinic at every appointment day is not necessary; thus, there was a tendency for late registration for ANC among women of high gravidity.

CONCLUSION

In conclusion, the portion of mothers who delay initiating the first ANC visit is high, which was significantly associated with education level and gravidity. Considerably, lower education increases the odds of a delayed first ANC visit, and there was a tendency for late registration for ANC among women of high gravidity. In general, my research shows that very many pregnant women in Hoima report being late for their first ANC visit; that is, out of the 240 respondents in my study, 172 pregnant women (71.7%) reported having come late for their first ANC visit, while only 68 pregnant women (28.3%) reported having attended their first ANC visit early.

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