

Determinants Affecting the Utilization of Antenatal Care Services by Women of Childbearing Age Visiting the Antenatal Care Clinic at Kyabugimbi Health Centre IV, Bushenyi District

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ABSTRACT

This research analyzed the utilization of antenatal care (ANC) services among pregnant women at Kyabugimbi Health Centre IV in Bushenyi District, Uganda. The study found that a significant percentage of women attended their first ANC visit late in their pregnancy, with only 20% receiving ANC within the recommended 0-3 months. A majority of the women had never heard about ANC or attended it in previous pregnancies. While 44% of the women attended ANC four or more times, indicating awareness of the recommended ANC frequency, 74% did not seek ANC at all. Most of the women with unplanned pregnancies did not utilize ANC services. The study concluded that 51.9% of pregnant women experienced delayed antenatal care, with 50.6% presenting between 4-6 months of gestation and 1.3% presenting at 7-9 months. These findings highlight the need for improved awareness and access to ANC services.

Keywords: Pregnant women; Antenatal Care; Mothers; Planned pregnancy; unplanned pregnancy.

INTRODUCTION

Antenatal care (ANC) is the professional healthcare a pregnant woman receives throughout her pregnancy, which helps ensure the survival of pregnant women and newborn babies during pregnancy and childbirth[1]. It refers to the care given to an expectant mother from the confirmation of conception until the onset of labor. Antenatal care provides preventive and curative services during pregnancy, particularly during the first visit [2, 3]. This includes essential screening for health conditions such as HIV. For HIV-infected pregnant women, the maximum benefit of antiretroviral therapy to prevent mother-to-child transmission (PMTCT) of HIV requires early presentation to the health system, screening for syphilis, diagnosis and treatment of UTIs, tetanus toxoid administration, blood pressure checks, nutritional advice, and supplements (iron

and vitamins). It also involves preparation for childbirth, including emergency readiness, access to bed nets, and intermittent preventive therapy during pregnancy [4-6].

Prenatal care, also known as antenatal care, is a type of preventive healthcare with the goal of providing regular check-ups that allow doctors or midwives to treat and prevent potential health problems throughout the pregnancy while promoting healthy lifestyles for both the mother and child [7, 8]. Globally, approximately 210 million women become pregnant each year, but only 71% of them receive any ANC, resulting in 135 million live births. In Africa, about 30 million women become pregnant each year, with approximately 250,000 maternal deaths related to pregnancy causes in sub-Saharan Africa in 2010 [9, 10]. During that year, there were an

estimated 162,000 maternal deaths, with a maternal mortality rate (MMR) of 500 per 100,000 live births. Receiving a sufficient number of timely ANC visits helps improve maternal health outcomes. However, in sub-Saharan Africa, ANC utilization is low: 69% of pregnant women have at least one ANC visit, 44% have at least four ANC visits, and only 20% of pregnant women receive ANC within 0-3 months of pregnancy, which is low compared to other parts of the world [11, 12].

In Africa, there is the highest burden of maternal mortality in the world, with sub-Saharan Africa responsible for approximately 98% of maternal deaths in the region. The effects of antenatal care services on birth weight and the importance of model specification and empirical procedures were used to estimate the marginal productivity of health inputs [13, 14]. In 2016, the World Health Organization (WHO) published Recommendations on Antenatal Care for a Positive Pregnancy Experience, which outlines a new set of evidence-based global guidelines on recommended content and scheduling for antenatal care [15]. These recommendations include eight contacts at specific times throughout the pregnancy, replacing the term "visit" with "contact" to emphasize an active connection between a pregnant woman and a healthcare provider.

Additionally, ANC serves as the first contact with health facilities and is believed to increase the likelihood that mothers who attend more than one ANC visit will give birth with the assistance of a skilled birth attendant [16]. ANC also provides an opportunity for mothers to receive information about HIV prevention [17].

Pregnancy and childbirth are significant events for women and their families, but they also represent a period of heightened vulnerability for both women and their unborn babies[18]. Each day, preventable causes related to pregnancy and childbirth lead to the deaths of over 800 women, with 99% of these maternal deaths occurring in low- and lower-middle-income countries[19]. By 2015,

maternal mortality had decreased by over 40% from 1990 levels, but maternal mortality levels remain unacceptably high in sub-Saharan Africa (SSA)[20]. Inadequate access to quality ANC contributes to these preventable maternal deaths. Approximately 303,000 women and adolescent girls died from pregnancy and childbirth-related complications in 2015 [21]. In that same year, 2.6 million babies were stillborn. Almost all maternal deaths (99%) and child deaths (98%) occurred in low- and middle-income countries. These maternal deaths could have been prevented with access to quality antenatal care (ANC)[15]. Sixty percent of stillbirths (1.46 million) occurred during the antepartum period, mainly due to untreated maternal infection, hypertension, and poor fetal growth [22]. Recent evidence suggests that the focused antenatal care (FANC) model, developed in the 1990s, is associated with more perinatal deaths than ANC models comprising at least eight contacts between the pregnant woman or adolescent girl and the healthcare provider [15]. Furthermore, an increase in perinatal mortality is more likely due to an increase in stillbirths (The Cochrane Library, 2015). These findings and other evidence informed the development of WHO's 2016 ANC recommendations[15].

This brief highlights the WHO's 2016 ANC recommendations and offers considerations for countries to adopt and implement these recommendations. The recommendations include universal and context-specific interventions, spanning five categories: routine antenatal nutrition, maternal and fetal assessment, preventive measures, interventions for managing common physiological symptoms in pregnancy, and health system-level interventions to improve the utilization and quality of ANC.

Researchers at the Overseas Development Institute studied maternal health systems in four apparently similar countries: Rwanda, Malawi, Niger, and Uganda. Rwanda, in comparison to the other three countries, has a recent record of improving maternal death rates. Based on

their investigation of these varying country case studies, they concluded that reviewing all maternal health-related policies frequently to ensure internal coherence, enforcing standards on providers of maternal health services, and promoting local solutions to problems are key elements[13, 23].

Adequate ANC reduces the risk of mother-to-child transmission of HIV, anemia in both mother and child and other negative health outcomes [24-27]. However, there is no comprehensive study into the level

METHODOLOGY

Study designs

The research involved the use of a Descriptive Research Design where the instruments used to collect data were Questionnaires (closed and structured) and interviews (structured and focused). A quantitative data collection method was used. The interview was conducted in Runyankole and English languages that are convenient.

Area of Study

The Research was conducted at Kyabugimbi HC IV Igaara East HSD Bushenyi district, about 9 km on Bushenyi-Buhweju Road, Southwestern Uganda. The Health facility caters for populations of the greater Bushenyi Region, encompassing the districts of Buhwenju, Sheema, Rubirizi and Mitooma and is a referral point for Health Centre IIs and IIIs in respective areas. The services provided are General medical care and some specialized clinics like Antenatal care clinic and MCH, HIV/AIDs Care clinic, Dental clinics and surgical services. It has a daily patient attendance population ranging from 400 to 800 patients with a catchment population of 100,000.

Study population

The study population comprises of women in the reproductive age group seeking antenatal care services at Kyabugimbi HC IV in Bushenyi District South Western Uganda.

Inclusion Criteria

All women in the reproductive age group attending ANC who consented.

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of utilization of ANC services in Bushenyi, coupled with limited empirical data on factors influencing ANC utilization in Uganda as a whole, especially in rural areas. Therefore, this study intends to investigate the socio-demographic factors, clinical factors, and the proportion of pregnant women attending ANC at Kyabugimbi IV, which may influence utilization of the services among pregnant women in rural areas like Bushenyi.

Exclusion criteria

Women of reproductive age group do not consent.

Sample Size Determination

The sample size was determined using the formula; [28] for prevalence.

$$n = \frac{(z_{\alpha} + z_{\beta})^2 \times p(1-p)}{(d)^2}$$

This formula is valid for a population \geq 10000

Where;

n = Desired sample size

$z_{\alpha} + z_{\beta} = Z$ = Standard normal deviate at 95% level of confidence; $z = 1.96$

P= already known prevalence from other studies (37% UBOS, 2007)

d = level of precision (in proportion of one, if 5% $d = 0.05$)

Therefore, taking

$Q = 1 - p$,

$P = 37/100 = 0.37$,

$Q = 1 - P (1 - 0.37)$,

$Z = 1.96$, $D = 5\%$ or 0.05

$n = \frac{1.96^2 \times 0.37 \times 0.63}{0.05^2}$

$n = \frac{0.89547696}{0.0025}$

Therefore; the sample size was 358.190784 mothers

However, using the "Finite Population Correction for Proportions" formula

$$n = \frac{n_1}{1 + \frac{n_1 - 1}{N}}$$

where N is the population size (for this case 100 mothers attend ANC at KIU-TH per week) and n_1 is the sample obtained above;

Sample size was; $\frac{358.190784}{4.57190784}$

= 78.34602020324189

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Thus approximately; 80 mothers were sampled.

Sampling procedures

Consecutive Random sampling was used where every individual in the inclusion criteria has an equal chance of being part of the sample until the desired number is achieved.

Data collection methods and management

The data collection involved a face-to-face interview using a closed-structured Questionnaire.

Data analysis

Data analysis was conducted using SPSS (statistical package for social scientists). Exploratory data techniques were used at the initial stage of analysis and cover the structure of data and identify outliers or unusual entered values. Quantitative data was coded and processed using SPSS version 20. Descriptive statistics such as frequencies was used to summarize, organize and simplify the data that was

According to the study findings, the majority, 35 (43.8%) of the mothers attained education up to primary level, 35 (43.8%) mothers attended up to secondary level, 7(8.8%) attended up to Post-secondary level, mostly 37(46.3%) mothers were housewives, and only 4(5.0%) were civil servants. 65(81.3%)

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collected. Quantitative data was presented using frequency tables.

Ethical Considerations

A research report was submitted and approved, letter of introduction was obtained from Dean School of Clinical Medicine and Dentistry and endorsed by IREC Kampala International University, Western Campus which was taken to the district health officer (DHO) and a copy to the health facility In-charge and the in-charge of the Antenatal care clinic. The researcher obtained all the necessary permission from the health facility administrators, other district authorities and other area authorities where the research was carried out. But most importantly, the values and norms of the clients was studied well and respected to avoid any misconception. In addition, participants were asked for their consent to participate in an interview and fill in a structured questionnaire.

RESULTS

mothers were married and 19(24.4%) mothers had partners that are not employed. Majority 59(76.6%) mothers were Banyankole, 41(52.6%) mothers were catholic 26(32.5%) mothers were staying in urban areas, while 53(67.5%) in Rural areas.

Table 1: Sociodemographic Characteristics of the Respondents of Pregnant Mothers Attending ANC at Kyabugimbi HC IV, Bushenyi District

Variables	Frequency (n=80)	Percentage (%)
Education level		
Primary level	35	43.8
Secondary level	35	43.8
Post-secondary level	7	8.8
Never went to school	3	3.8
Occupation		
Businesswoman	37	46.3
House wife	36	45.0
Peasant	3	3.8
Civil servant	4	5.0
Marital status		
Single	12	15.0
Married	65	81.3
Widowed	1	1.3
Partner is employed		
Yes	59	75.6
No	19	24.4
Tribe		
Munyankole	62	79.5
Mukiga	4	5.1
Mutooro	2	2.6
Mukonjo	10	12.8
Religion		
Catholic	41	52.6
Protestant	15	19.2
Pentecostal	12	15.4
Muslim	10	12.8
Area of residence		
Urban	26	32.5
Rural	53	67.5

The proportion of women attending the 1st ANC with in the first Trimester among pregnant women attending ANC clinic at Kyabugimbi HC IV

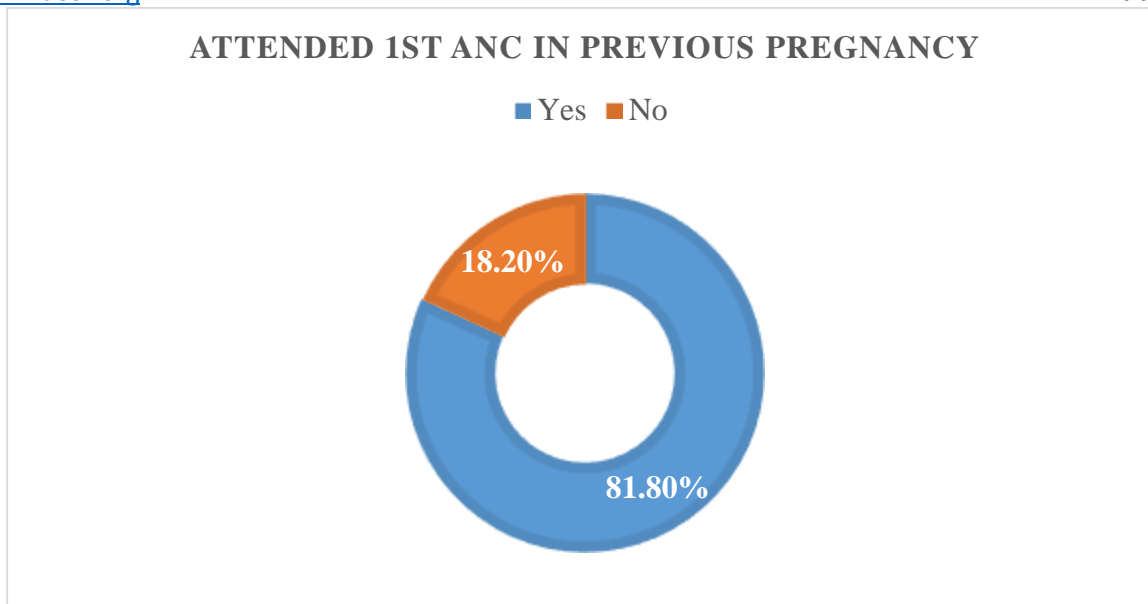


Figure 1: Proportion of women attending the 1st ANC with in the first Trimester
Table 2: Proportion of ANC visits among pregnant mothers at Kyabugimbi HC IV.

Variables	Frequency (n=80)	Percentage (%)
Ever heard about Antenatal Care before		
Yes	65	84.4
No	10	13.0
Gestation age did you go for the 1st ANC visit		
1-3 months	26	33.8
4-6 months	39	50.6
7-9 months	1	1.3
Number of previous pregnancies		
1	21	27.3
2	15	19.5
3	6	7.8
4	4	5.2
Not applicable	31	40.3
The number of ANC attended		
1 time	11	14.3
2-3 times	20	26.0
4 and more times	44	57.1

According to this study's findings, the majority 65(84.4%) of mothers had ever heard about Antenatal Care, 66(81.2%) mothers had attended 1st ANC, while 14(18.2%) mothers generally never attended AN. Only 21(27.3%) mothers had attended ANC in one pregnancy, 15(19.5%) mothers had attended 1st ANC in two pregnancies, 6(7.8%) mothers had attended 1st ANC in three pregnancies and 4(5.2%) mothers had attended ANC in four

pregnancies whereas 31(40.3%) mothers were prime-gravidas. More so, 44(57.1%) mothers attended ANC 4 times and more times while 20(26.0%) mothers attended ANC 2-3 times and 11(14.3%) mothers attended one time. The majority of 44(57.1%) mothers were aware of the ANC attendance recommendations.

The Socio-demographic factors influencing the utilization of ANC services among pregnant women attending the ANC clinic at Kyabugimbi HC IV.

According to the study findings, education influenced good ANC utilization with all those 7(13.0%) who reached post-secondary efficiently utilizing the ANC services. Also, married women were highly 46(85.2%) motivated

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to utilize the services, especially with employed partners 48 (88.9%). However, all those 3(4.4%) who never went to school had never utilized ANC as recommended and Being a housewife had a higher proportion 10(71.4%) of failing to utilize ANC services whereas a similar and even worse trend was with rural residence 14(100.0%) never utilized ANC of the 43(64.2%) from the rural area.

Table 3: Socio-demographic factors influencing utilization of ANC services among pregnant women attending the ANC clinic at Kyabugimbi HC IV.

Variable	Attended 1 st ANC in a previous pregnancy		TOTAL N (%)
	Yes [N (%)]	No [N (%)]	
Education level			
Primary level	32(59.3%)	3(21.4%)	35(51.5%)
Secondary level	15(27.8%)	8(57.1%)	23(33.8%)
Post-secondary level	7(13.0%)	0(0.0%)	7(10.3%)
Never went to school	0(0.0%)	3(21.4%)	3(4.4%)
Occupation			
Businesswoman	29(53.7%)	4(28.6%)	33(48.5%)
Housewife	18(33.3%)	10(71.4%)	28(41.2%)
Peasant	3(5.6%)	0(0.0%)	3(4.4%)
Civil servant	4(7.4%)	0(0.0%)	4(5.9%)
Marital status			
Single	8(14.8%)	4(28.6%)	12(17.6%)
Married	46(85.2%)	10(71.4%)	56(82.4%)
Partner is employed			
Yes	48(88.9%)	3(21.4%)	51(75.0%)
No	6(11.1%)	11(78.6%)	17(25.0%)
Area of residence			
Urban	24(45.3%)	0(0.0%)	24(35.8%)
Rural	29(54.7%)	14(100.0%)	43(64.2%)

The Obstetrical factors influencing utilization of ANC services among pregnant women attending the ANC clinic at Kyabugimbi HC IV.

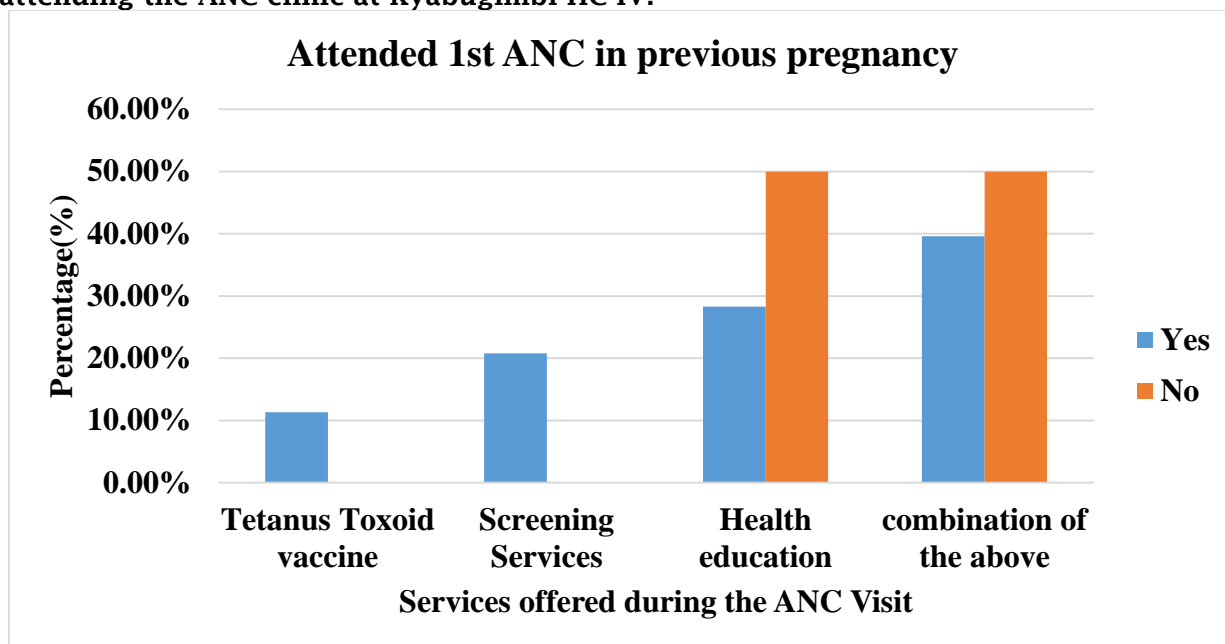


Figure 2: Services during ANC services among pregnant women attending the ANC clinic at Kyabugimbi HC IV.

According to the study findings, the services at the clinic range from Tetanus toxoid vaccine, screening services health education and a combination of many other services. Of all these, health education and many other services were reported to be lacking. However, it was statistically found that; having planned a pregnancy 35(64.8%) P-Value= 0.009,

OR=0.71(0.59-0.85), seeking 1st ANC services at <16 Weeks 21(30.9%) P-value= 0.031, OR= 7.65(1.00-62.92) and Services offered at the facility 30(56.6%) P-value=0.026, OR=1.23(1.06-1.44) significantly affects utilization of ANC services in Kyabugimbi HC IV. See Table 4.

Table 4: Obstetrical factors influencing utilization of ANC services among pregnant women attending ANC clinic at Kyabugimbi HC IV

Variable	Attended 1 st ANC in previous pregnancy		TOTAL N (%)	P-Value	OR [95% C.I]
	Yes [N (%)]	No [N (%)]			
Aware of recommended time for 1st ANC Visit					
Yes	30(55.6%)	4(28.6%)	34(50.0%)	0.072	3.13(0.87-11.21)
No	24(44.4%)	10(71.4%)	34(50.0%)	Ref.	1
Previous pregnancy Gestation age 1st ANC visit					
<16 weeks	23(44.2%)	3(25.0%)	26(40.6%)	0.221	2.38(0.58-9.81)
≥16 weeks	29(55.8%)	9(75.0%)	38(59.4%)	Ref.	1
Delivery place					
Private health facility	20(37.7%)	3(21.4%)	23(34.3%)	0.253	2.22(0.55-8.94)
Public health facility	33(62.3%)	11(78.6%)	44(65.7%)	Ref.	1
Planned pregnancy					
Yes	35(64.8%)	14(100.0%)	49(72.1%)	0.009	0.71(0.59-0.85)
No	19(35.2%)	0(0.0%)	19(27.9%)	Ref.	1
Sought 1st ANC					
<16 Weeks	20(37.0%)	1(7.1%)	21(30.9%)	0.031	7.65(1.00-62.92)
≥16 Weeks	34(63.0%)	13(92.9%)	47(69.1%)	Ref.	1
Health facility is near home & easily accessed					
Yes	38(71.7%)	7(50.0%)	45(67.2%)	0.124	2.53(0.76-8.46)
No	15(28.3%)	7(50.0%)	22(32.8%)	Ref.	1
Services offered at the facility					
Very poor	23(43.4%)	0(0.0%)	23(38.3%)	0.026	1.23(1.06-1.44)
Very good	30(56.6%)	7(100.0%)	37(61.7%)	Ref.	1

*Statistically Significant, P-Value=<0.05 OR=Odds Ratios Ref=Reference category

DISCUSSION

The proportion of women attending the 1st ANC with in the first Trimester among pregnant women attending ANC clinic at Kyabugimbi HC IV

According to this study findings, 84.4% mothers had ever heard about Antenatal Care and a bigger proportion 81.8% of them, had attended 1st ANC visit during pregnancy, while 18.2% mothers did not attend to ANC in their previous pregnancies. This complements previous studies in which the prevalence of antenatal visits varied among; comparatively, 27.3% of mothers had

attended ANC in at least one pregnancy [29, 30]. However, this is still a low attendance compared to regions and a low one in sub-Saharan Africa especially in Congo. In Tanzania the antenatal visit has gone up beyond 90% [31] to 98 % TDHS-MIS, [31]. This could have been because many were being told to come back later to initiate ANC after presenting early and many were rural residents of low socio-economic status. Nonetheless, for the mothers who attended ANC, 57.1% attended more than 4 times while a considerable number still lags below at

least 4 times yet currently 8 times (ANC visits) are recommended. Similarly, only 55.6% who attended 1st ANC, 50.0% of mothers were aware of ANC recommendations while the majorities were not thus majority of the mothers, 50.6% attended ANC at a later time, and only 33.8% of mothers attended ANC as early as at 16 weeks or less. According to TDHS-MIS [31], only 24% of pregnant mothers reported to begin their ANC visit during the first trimester as recommended [31].

Socio-demographic factors influencing Utilization of ANC Services among Pregnant women attending the ANC clinic at Kyabugimbi HC IV

According to the study findings, education influenced good ANC utilization with all those 13.0% who reached post-secondary efficiently utilizing the ANC services. Also, married women were 85.2% motivated to utilize the services, especially with employed partners 88.9%. However, all those 4.4% who never went to school had never utilized ANC as recommended and being a

The research findings demonstrate a significant prevalence of delayed antenatal care utilization among pregnant women in Kyabugimbi Health Centre IV. While some women attended ANC services, a considerable number did not seek care until late in their pregnancies, which poses risks to maternal and child health. Factors such as knowledge about ANC recommendations, pregnancy planning, place of residence, and previous

The recommendations aim to improve the health and well-being of pregnant women in Bushenyi District by implementing community-based interventions and health education programs to inform pregnant women about the benefits of early antenatal care (ANC) visits and the risks associated with delayed care. They also suggest improving access to ANC services by setting up outreach clinics or mobile clinics, particularly in rural areas.

housewife had a higher proportion 10(71.4%) of failing to utilize ANC services whereas a similar and even worse trend was with rural residences where a considerable number never utilized ANC of the 64.2% from the rural area.

Obstetrical factors influencing utilization of ANC services among pregnant women attending ANC clinic at Kyabugimbi HC IV

According to the study findings, the services at the clinic range from Tetanus toxoid vaccine, screening services, health education and a combination of many other services. Of all these, health education and many other services were reported to be lacking. However, it was statistically found that; having planned a pregnancy 35(64.8%) P-Value= 0.009, OR=0.71(0.59-0.85), seeking 1st ANC services at <16 Weeks 21(30.9%) P-value= 0.031, OR= 7.65(1.00-62.92) and Services offered at the facility 30(56.6%) P-value=0.026, OR=1.23(1.06-1.44) significantly affects utilization of ANC services in Kyabugimbi HC IV.

CONCLUSION

ANC attendance were identified as significant determinants of ANC utilization. Notably, there is a need for increased efforts to educate women about the importance of early ANC visits and to provide better access to these services. Furthermore, addressing the issues of delayed care, especially among women with unplanned pregnancies, is crucial for improving maternal and child health outcomes.

RECOMMENDATIONS

Recommendations include disseminating recommended antenatal care guidelines, promoting family planning services and education to reduce unplanned pregnancies associated with delayed ANC utilization. The quality of services offered at ANC clinics should be enhanced, including comprehensive care and addressing specific needs of pregnant women. Further research on ANC utilization and maternal health in the

region is also recommended to identify

evolving trends and challenges.

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