IAA Journal of Biological Sciences 12(2):19-24, 2024
©IAAJOURNALS
https://doi.org/10.59298/IAAJB/2024/122.192411
www.iaajournals.org
ISSN:2636-7254
IAAJB:122.192411

Factors Influencing Antenatal Care Service Utilization among Pregnant Mothers: A Study at Kampala International University Teaching Hospital, Bushenyi District

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ABSTRACT

Antenatal care (ANC) services play a crucial role in ensuring the well-being of pregnant women and their unborn children, yet disparities exist in their utilization globally. This study investigates the factors influencing ANC service utilization among pregnant mothers attending Kampala International University Teaching Hospital in Bushenyi District. A cross-sectional study involving 138 participants was conducted, employing descriptive analysis and logistic regression. Results revealed that only 40.6% of mothers had good ANC service utilization, with factors such as post-primary education, manageable cost of services, and knowledge of ANC services significantly associated with higher utilization rates. Conversely, lack of awareness about when to start ANC services and inadequate knowledge of ANC services were barriers to utilization. Additionally, multiparous women and those with a primary education level were less likely to utilize ANC services optimally. These findings underscore the importance of targeted interventions, including education outreach programs and improved accessibility to ANC services, to enhance maternal and fetal health outcomes.

Keywords: Antenatal care, Utilisation, Hospital, maternal mortality, Pregnant mother.

INTRODUCTION

Antenatal care (ANC) helps to ensure the well-being of the mother and foetus through early detection of pregnancy risks, prevention of pregnancy and labour complications, and safe delivery of mother and child [1, 2]. Maternal and reproductive health services in health systems constitute a large range of curative and preventative health services of particular importance to the health of women of reproductive age [3]. It also refers to population-based services such as behaviour change and health communication. It includes a range of services provided to pregnant mothers prior to conception and during pregnancy [4, 5]. Globally, there has been a tremendous increase in ANC services utilisation by 17% from 2012 to 2016; this has correlatively led to a reduction in the maternal mortality ratio (MMR) from 450 deaths per 100,000 in 2011 to 300 deaths per 100,000 in 2015 [6]. Despite this recent decline, Sub-Saharan Africa has the highest MMR in the world, regardless of strategies and interventions that prioritise maternal health [7]. In sub-Saharan Africa, by 2017, less than 37% of all pregnant women utilised all the ANC services; more so, MMR was estimated to be 480 per 100,000 live births in 2015. The United Nations Sustainable Development Goals (MDG) on maternal health aim to reduce the number of women dying during pregnancy and childbirth by three-quarters between 2000 and 2015 [8]. To achieve this goal, it is estimated that an annual decline in maternal mortality of 5.5% is needed; however, between 2000 and 2015, the annual decline was only 1.7% in the sub-Saharan region [8]. In most rural areas of East Africa, poor maternal health remains a major issue since health facilities do not provide a full range of primary health care services, undermining access to reproductive health services, including basic and comprehensive Emergency Obstetric Care (EmOC) services [9]. A comparative study by the Uganda Demographic and Health Survey (DHS) with data from 23 African countries showed that one-thirds of women in Uganda give birth at home, but only 13 percent of all women receive ANC services prior to delivery [10]. Although attendance at ANC is encouraging, worrying gaps exist in provision, and coverage statistics are usually based on women who have only one ANC visit, whereas four visits are recommended, and ANC quality varies. Therefore, the importance of this study is to address

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this information gap. At Kampala International University Teaching Hospital, antenatal care is still more a question of unutilized service than of effective interventions. Records show that many women do not attend antenatal care as recommended. Health care delivery is faced with a lot of problems; this is true for Kampala International University Teaching Hospital as well. The aim of the study was to assess factors affecting the utilisation of ANC services among pregnant mothers attending Kampala International University Teaching Hospital, Bushenyi district.

METHODOLOGY

Study Design

The study was a cross-sectional prospective method to explore utilisation of ANC and factors that affect utilisation of ANC services in Kampala International University Teaching Hospital. The study was done in four months, from May 2022 to September 2022. Information was obtained from the Kampala International University Teaching Hospital.

Study Site

The study was done at KIUTH Hospital, which is located approximately 77 kilometres (48 miles) by road west of Mbarara, the largest city in the sub-region. This location lies approximately 360 kilometres (224 miles) by road, southwest of Kampala, the capital of Uganda and the largest city in that country. The coordinates of Ishaka-Bushenyi Municipality are: 0° 32' 40.00"N, 30° 8' 16.00"E (latitude: -0.544445; longitude: 30.137778).

Study population

The study population was all pregnant mothers attending ANC services at Kampala International University Teaching Hospital.

Sample size determination

The sample size was determined using Kish [11] formula.

$$n = \frac{z^2pq}{d^2}$$

Where;
n= minimum sample size
d = margin of error
z=standard normal deviation corresponding to 1.96
p= prevalence, 10%.
q=1-p
Therefore taking
p = 10/100 =0. 1
z = 1.96
q=1- 0.1 = 0.9
d= 5% or 0.05

$$n=\frac{1.96^2X0.1X0.9}{0.05^2}$$

= 138 participants

Inclusion criteria

i. Pregnant Mothers Willing to participate and who consented was interviewed
ii. Pregnant mothers seeking ANC services.

Exclusion criteria

i. Pregnant mothers who didn't consent.
ii. Pregnant mothers in need of urgent obstetric care.

Sampling Method

In this study, a simple random sampling method was used. Here, random papers marked with a yes and a no were folded and picked at random. Anyone who picked a yes was recruited into the study, and a mother who picked a no was not. The exercise was repeated until a desired sample size was obtained, provided they met inclusion criteria.

Data Collection

A structured Interviewers administered questionnaires and checklists to collect information on socio-demographics and service level characteristics/obstetrical information, respectively. A research assistant who understood the local language helped translate during the interviews. The researcher pre-tested the questionnaires to identify any deficits and ensure that all objectives of the study were adequately covered. All questionnaires were checked for completeness and consistency by the researcher.

Data Analysis

All data was transcribed and entered in Microsoft Word. Data was entered in Epi-Info and Ms. Access and then exported to the STATA software version.

Ethical Considerations

Permission to carry out this study was obtained from the Dean of the Faculty of Clinical Medicine and Dentistry at KIU with approval from the research supervisor. The letter was taken to the hospital director, Kampala International University Teaching Hospital, for permission to collect data. Consent was acquired from all respondents; confidentiality was maintained at all times; and all collected data records were kept for future reference or consultation.

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RESULTS

Maternal ANC service Utilization

Table 1: Showing number of trimesters for mothers seeking ANC Services

Trimester	Frequency	Cumulative frequency	Percentage
First trimester	21	21	15.2
Second trimester	79	100	57.2
Third trimester	38	138	27.6

From table one above which was showing number of mothers seeking ANC services it showed that majority of the mothers 79(52.7%) were in the second trimester while 21(15.2%) of the mothers were in the first trimester and 38(27.6%) of the mothers were in the third trimester.

ANC Percent Utilisation

Table 2: Showing mothers who have made at least 90% utilisation of the recommended visits

ANC Percentage utilization	Frequency	Percentage	comment
80% or more times	**56**	**40.6**	**Good**
<80%	**82**	**59.4**	**poor**

Table two shows ANC service utilization percentage in which majority of the mothers 82(59.4%) had poor ANC service utilization of less than 80% while at least 56(40.6%) of the mothers had utilized ANC services for 80 or more percent.

Knowledge on ANC Service Utilization

Table 3: showing Knowledge on ANC service utilization

Knowledge assessment	Good ANC utilization services (56)		Poor ANC utilization services (82)		Odds Ratio	p-value
	Freq.	Percent	Freq.	percent	95%CI	<0.05sg*
Health education						
Yes	51	91.1	73	89.0	Ref	
No	05	8.9	09	11.0	0.1(0.01-4.28)	0.206
Knowledge on ANC Service						
yes	48	85.7	40	48.8	Ref	
No	08	14.3	42	51.2	0.8(0.55 -7.12)	0.003
Knew when ANC starts						
Yes	29	51.8	24	29.3	Ref	
No	27	48.2	58	70.7	0.4(0.02-9.34)	0.001
Dangers of not doing ANC						
Yes	21	37.5	36	43.9	Ref	
No	35	62.5	46	56.1	0.7(0.45-6.99)	0.475

Sg*: significance <0.05 ;

From table three above mothers were asked if they had received health education in regards to ANC service utilization both majority 51(91.1%) of those had good ANC service utilization, and 9(89.0%) of those who health had poor ANC service utilization said they had received health education in regards to ANC services the study showed that receiving health education was however not significantly associated with ANC service utilization at odds ratio of 0.1(0.01-4.28) and a p- value 0.206. The study also shows that majority 48(85.7%) of the mothers who had good ANC service utilization knew different ANC services while 42(51.2%) of the mothers had had good ANC service did not know different ANC services utilization at odds ratio of 0.8(0.55-7.12) and a p-value of 0.003 the study showed that knowledge on different ANC services was a significant factor to ANC service utilization. From the study mothers were also asked if they knew when ANC starts, majority of the mothers 29(51.8%) with good ANC service utilization knew when to start while at least 58(70.0%) of the respondents with poor ANC service utilization didn't know when ANC service starts, at the odds ratio of 0.4(0.02-9.34) and p- value of 0.001 which showed that good knowledge on when ANC service starts was significantly associated with the

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ANC service utilization. The study also shows that mothers were also asked about the dangers of not doing ANC services in which majority of the mothers 35(62.5%).of those who had good ANC service utilization and 46(56.1%) of the respondents who had poor ANC service utilization said they did not know the dangers of not doing ANC services at odds ratio of 0.7(0.4 -6.99) and p-value of 0.475, which shows that knowing dangers of not doing ANC was not significantly associated with ANC service utilization.

Factors Associated with ANC Service Utilization

Table 4: Showing factors associated with ANC service utilization

Factor Assessment	Good ANC utilization (56)		Poor ANC Utilization		Odds Ratio	p-value
	Freq.	Percent	Freq.	Percent	95%CI	<0.05Sg*
Education						
Primary	26	46.4	51	62.2	Ref	
Post primary	30	53.6	31	37.8	0.9(0.36-2.11)	0.027
Parity						
First child	15	26.8	27	32.9	Ref	
Multiple children	41	73.2	55	67.1	0.5(0.02-5.48)	0.279
Marital status						
Single	12	21.4	16	19.5	Ref	
Married	44	78.6	66	80.5	0.4(0.15-8.02)	0.488
Cost						
Expensive	18	32.1	47	57.3	Ref	
Manageable	38	67.9	35	42.7	0.6(0.25-4.91)	0.014

Sg* significance < 0.05; ANC; Antenatal care

Table 4 shows factors associated with ANC service utilisation, in which the majority (30.6%) of the mothers who had good ANC service utilisation said they had a post-primary education, while at least 51 (62.2%) of mothers who had poor ANC service utilisation had a primary education, with an odds ratio of 0.9 (0.36-2.11) and an odds ratio of 0.027, which showed that post-primary level of education was significantly associated with ANC service utilisation. The study also showed that the majority of 41 (73.2%) of the mothers who had good ANC and 55 (67.1%) of those who had poor ANC utilization said they had multiple children at an odds ratio of 0.5 (0.02–5.48) and a p-value of 0.279. This showed that mother parity was not significantly associated with ANC service utilisation. The study also shows that a majority of 44 (78.6%) of the mothers with good ANC service utilisation and 66 (80.5%) of those with poor ANC service utilisation said that they were married at an odds ratio of 0.4 (0.15–8.02) and a p-value of 0.488. This showed that marital status was not significantly associated with ANC service utilisation. The mothers were also assessed for the cost of ANC services, in which the majority of 38 (67.9%) of mothers who had good ANC service utilisation said that ANC services were manageable, while 47 (57.3%) of those with poor ANC service utilisation said that ANC services were expensive, at an odds ratio of 0.6 (0.25–4.91) and a p-value of 0.014. This shows that the mother's capacity to manage the cost of ANC services was a significant factor influencing ANC service utilisation.

DISCUSSION

The study reveals that a majority of pregnant women in Uganda are in the second trimester, with a majority of them seeking antenatal care (ANC) during this time. The proportion of women using ANC services is low compared to those using ANC and delivery services. The Uganda Demographic and Health Survey 2016 identified 58% ANC and 35% health facility delivery, with the majority starting their first visit in the second trimester. The study found that knowledge of different ANC services was a significant factor in ANC service utilization. However, lack of knowledge about ANC services was a major barrier to women's utilisation [12]. Most mothers are not always aware of when to start seeking ANC services, which can delay their use [9]. The study also found that the dangers of not doing ANC services were not significantly associated with ANC service utilization. Some mothers may not be aware of the core importance of ANC services or may be seeking services because they are sick or have been told to do so. The study suggests that behavior is expected to change if pregnant women are aware of the

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implications of not attending ANC and the benefits of practicing preventive care [13]. Perceived benefits of ANC services provide a platform for interacting with pregnant women, identifying needs or problems, and jointly arriving at possible solutions to these needs. The study found that post-primary education significantly influences antenatal care (ANC) service utilization among mother. Low educational status can be a barrier to ANC service utilization, especially after birth [14]. Multiparous mothers tend to seek less ANC services due to their perceived experience from previous deliveries [15]. Married mothers have social and financial support from their spouses, making them more likely to access ANC services during their first trimester. Spousal support helps women to seek timely healthcare services [16]. The cost of ANC services is also a significant factor influencing ANC service utilization. A majority of mothers who had good ANC service utilization said that ANC services were manageable, while 47.3% of those with poor ANC service utilization said they were expensive. The inability to manage ANC services makes mothers miss out on crucial ANC services. ANC is an avenue to receive mineral supplements like folic acid and fersolate during pregnancy. These supplements help to mitigate the incidence of anaemia in mothers and newborns [17, 18]. Factors such as transport to ANC facilities, high laboratory fees, drugs, and consultation fees in private centers not serviced by government hospitals also deter mothers from utilizing maternal services [19, 20]. Overall, the study highlights the importance of education, marital status, and the cost of ANC services in influencing ANC service utilization.

CONCLUSION

The study concludes that only 56(40.6%) of the mothers had good antenatal care service utilisation. The study also concludes that knowledge of ANC services at a p-value of 0.003 and an odds ratio of 0.8 (0.55-7.12) and knowledge of when to start ANC services at a p-value of 0.001 and an odds ratio of 0.4 (0.02-9.34) were significant factors for antenatal care service utilisation. The study also concludes that a post-primary level of education at an odds ratio of 0.9 (0.36-2.11) and a p-value of 0.027 and ANC services being cheap at an odds ratio of 0.6 (0.25-2.91) and a p-value of 0.014 were significant factors for antenatal service utilisation.

Recommendation

After the study, the following recommendations were made by the researcher:

i. The study recommends that the hospital should arrange outreach to educate people about good antenatal care service utilisation.
ii. More ANC services should be brought to lower health centres to enable pregnant mothers to easily access these services.
iii. The study also recommends that mass sensitization on radios and TVs be done so as to improve people's knowledge of antenatal care services.

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CITE AS: Tukamuhebwa Josa (2024). Factors Influencing Antenatal Care Service Utilization among Pregnant Mothers: A Study at Kampala International University Teaching Hospital, Bushenyi District. IAA Journal of Biological Sciences 12(2):19-24. https://doi.org/10.59298/IAAJB/2024/122.192411

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