

Uptake of FANC Services Among Women of Reproductive Age in Sirisia Sub-County, Bungoma County, Kenya

ABSTRACT : Focused Antenatal Care (FANC) adoption is significantly influenced by women's perceptions of pregnancy, labour, and post-partum difficulties. This study aimed to investigate the factors of uptake of specialized prenatal care services among pregnant women in Sirisia Sub-County, Bungoma County, Kenya. The target population included women who had given birth in the last two years and healthcare workers. Data collection involved a questionnaire, FGDs and Key Informant Interviews. The majority (31.9%) were aged 21-30 years, 57.3% were married, and 57.3% had secondary education. Only 4.3% had no formal education, while 23.8% had tertiary education. Regarding employment, 34.7% were self-employed, 20.7% were formally employed, and 24.8% were unemployed. More than half of the respondents (56.7%) initiated prenatal care between 4-6 months, and 68.7% had ANC visits between 0-16 gestation weeks. The uptake of Focused Antenatal Care (FANC) services was higher among married women (67.6%), those with tertiary education (74.0%), and formally employed women (63.8%). Factors like marital status ($p=0.031$) and education ($p=0.0001$) were significantly associated with FANC service uptake, underscoring the importance of these factors in improving antenatal care utilization, especially among younger, unmarried, and less-educated women.

KEYWORDS: FANC, Pregnant women, Women health, Maternal morbidity, ANC visits

I. INTRODUCTION

“Focused antenatal care (FANC) is an important period for improving the health of both moms and babies. An antenatal care visit is an important entry point for a pregnant woman into the health-care system to obtain medical treatment. The WHO recommends eight ANC interactions. However, the Sirisia sub-county needs to enhance its coverage of at least four ANC visits. The Sustainable Development Goals 3:1 aim to lower maternal mortality to less than 70 per 100,000 live births by 2030”[1] “Pregnancy-related problems account for more than half of maternal fatalities worldwide. According to a WHO estimate, 90%-95% of these deaths occur in developing nations. Kenya has a maternal mortality ratio of approximately 355 deaths per 100,000 live births”[2]. “Focused antenatal care (FANC) is one of the maternal and child health service interventions provided to reduce preventable maternal and infant mortalities. An ANC visit is a crucial entry point for pregnant women to access preventative, curative, and health promotion treatments, including nutrition, HIV/AIDS, malaria, anemia, TB, and sexually transmitted infections”[3]. All of these services contribute to the health of the mother and her unborn child.

“The WHO prenatal care guidelines urge that pregnant women undergo at least eight antenatal care visits with health care providers”[2]. “The new guideline represents a shift from the current paradigm, which requires a minimum of four or more ANC visits, to a more expansive approach that includes several interactions and services. This model proposes that the first contact happens in the first 12 weeks of pregnancy, followed by two contacts in the second trimester (at the 20th and 26th weeks of gestation) and five contacts in the third trimester (30th, 34th, 36th, 38th, and 40th weeks of gestation)”[4]. As the frequency of contacts between a pregnant woman and a healthcare practitioner increases, so does her satisfaction with ANC services [5], [6]. However, in Africa, the proportion of pregnant women attending the necessary eight visits remains low. For example, in the Republic of Benin, 8.0% of people had eight or more ANC contacts. Another study in 15 countries discovered a pooled prevalence of 8 or more ANC contacts of only 13.0% [1]. “Before providing the revised prenatal recommendation of eight ANC contacts, Mchenga et al. (2019) released another FANC model guideline. The model package focuses on goals and reduces the number of antenatal visits. For an uncomplicated pregnancy, the model proposes four visits, with one in the first and second trimesters and two in the third trimester. Therapeutic therapies, screening, and health education are among the suggested services in this paradigm. It was also advised that all services at the ANC unit be made available, including simple fast diagnostics. Integrating services in the FANC model address certain challenges to utilizing ANC in underdeveloped countries”[7].

FANC is a successful healthcare strategy designed to increase mother and infant health and survival during pregnancy, delivery, and postpartum. Several research have been undertaken to study the factors influencing FANC use. Previous research conducted in Tanzania [8], [9], Ethiopia [10], and Ghana [11] found that women with primary, secondary, and higher education were more likely to use at least four ANC services than women without education. Other research found that women who did not participate in household decision-making were less likely to use FANC services as suggested [8], [12]. “Previous research found that maternal age, marital status, number of pregnancies, place of residence, planned pregnancy, distances to health facilities, and cultural practices all have an impact on ANC service utilization” [13], [14]. Determinants of FANC usage vary among cultures and socioeconomic statuses within a society. To improve mother and child health care, it is critical to analyze the factors influencing FANC service utilization in various situations

II. STATEMENT OF THE PROBLEM

Proper uptake of FANC is an important way to reduce maternal and child morbidity and mortality. Worldwide 303,000 thousand women die each year as a result of pregnancy-related complications, and 99% of all maternal deaths occur in developing countries [2]. Unfortunately, many women in Kenya do not receive proper FANC services Kisiangani *et al.*, [15]. In Kenya, the current uptake of FANC is at 66%, with the highest uptake of FANC recorded in Nyeri county, at 82%, which still fell short of the then millennium target goal of 100% [16]. Western Region is one of the largest regions in Kenya and a host to 9 counties. Of the 9 counties with less than 50% attendance of the recommended four FANC visits, 6 are in the Western Region. The recent uptake of FANC in the region is at 51% [17]. In Bungoma County, the maternal mortality ratio is 374 per 100,000 live births, according to World Health Organization [2], which is way beyond the first target under SDG3 to reduce the global maternal mortality ratio to less than 70 per 100,000 live births by 2030. Bungoma County hosts Sirisia Sub-County, which has had an alarming low intake of FANC services with worrying trends in the past three years. According to the latest survey on uptake of FANC services, Sirisia Sub-County scores as low as 28%. In addition, studies have yet to be conducted in this area in Kenya, thus limiting the available literature. Understanding the determinants of this low uptake of FANC is required to improve uptake of FANC and reduce maternal morbidity and mortality rates. This study, therefore, aims to establish the determinants of the uptake of FANC among women of reproductive age in Sirisia Sub-County in Bungoma County.

III. METHODS

This was an analytical cross-sectional design using both quantitative methods (issuing interviewer-administered questionnaires to women of reproductive age who gave birth in the last two years in Sirisia Sub-County) and qualitative methods (use of Focus Group Discussion from the selected women groups in order to create a diverse group in terms of age, domicile, and education levels) from selected household with the data collection done between May 2024 to June 2024 after ethical approval from MKU, permit from National Council of Science and Technology (NACOSTI) and permission from Bungoma County's Ministry of Health. Systematic random sampling method was used among 323 respondents from Namwela and Malakisi/South Kulisiru wards. The study included women of reproductive age in Sirisia Sub-County within two years of post-delivery who consent to participate in the study or whose guardians' consent to their participation. Further, it excluded women of reproductive age in Sirisia Sub-County who did not consent to participate in the study or whose guardians did not consent, mothers whose pregnancy was classed as high risk, necessitating additional antenatal follow-up, and those who were more than two years post-delivery were also excluded from the study. Interviewer-administered structured questionnaires were used to collect quantitative data while Focus Group Discussion Guide was used to collect qualitative. Quantitative data was analyzed using statistical package for social science (SPSS) version 29.0. Descriptive data was presented using frequencies, percentages, means and standard deviation while inferential statistics used chi-square test to measure association between independent and dependent variables. P values less than 0.05 were considered statistically significant.

IV. RESULTS

4.1 Socio-Demographic Characteristics of study respondents

Out of 323 respondents, 103 (31.9%) were between 21-30 years, 60 (18.6%) were 20 years and below, and 63 (19.5%) were 41 years and above. More than half 185 (57.3%) and 276 (85.4%) were in marital union (Table 1). Approximately 4% of respondents had no formal education with most 185 (57.3%) had secondary

level of education and 77 (23.8%) had tertiary level of education. Most of respondents 112 (34.7%) were self-employed with 67 (20.7%) being formally employed and 80 (24.8%) were unemployed (Table 1).

Table 1: Socio-Demographic Characteristics of study respondents

Characteristics		Frequency	Percent
Age group	11-20 years	60	18.6%
	21-30 years	103	31.9%
	31-40 years	97	30.0%
	41-50 years	63	19.5%
Marital status	Single	111	34.4%
	Married	185	57.3%
	Divorced/separated	20	6.2%
	Widowed	7	2.2%
Religious affiliation	Christian	276	85.4%
	Muslim	35	10.8%
	Traditional beliefs	12	3.7%
Level of education	No formal education	14	4.3%
	Primary	47	14.6%
	Secondary	185	57.3%
	Tertiary	77	23.8%
Employment status	Self-employed	112	34.7%
	Employed	67	20.7%
	Casual labourer	64	19.8%
	Unemployed	80	24.8%

4.3 Uptake of Focused Antenatal Care

4.3.1 Initial Attendance of Prenatal Clinic

More than half 183 (56.7%) had initial prenatal care attendance between 4-6 months and 17 (5.3%) between 7-9 months (Figure 1).

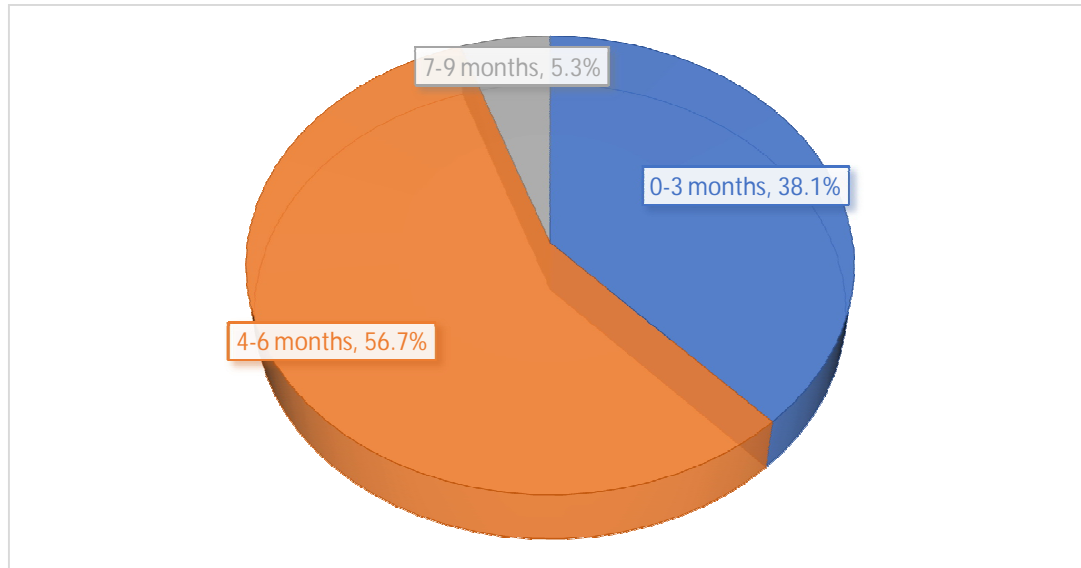


Figure 1: Initial Attendance of Prenatal Clinic

ANC booklet is one other facilitating factor for women to visit the clinic, during the first and second trimesters and to some still during the last trimester.

"When I go to the clinic, I get a book (ANC Booklet) which is required for me to have before delivery and for progress of my pregnancy". (FGD 2).

4.3.2 Actual Antenatal Clinics Visits

At least 222 (68.7%) had ANC visits between 0-16 gestation weeks with 283 (87.6%), and 323 (100%) at 29-32 weeks and more than 33 gestation weeks respectively. Focused antenatal care (FANC) is one of the maternal and child health service interventions provided to reduce preventable maternal and infant mortalities. An ANC visit is a crucial entry point for pregnant women to access preventative, curative, and health promotion treatments, including nutrition, HIV/AIDS, malaria, anemia, TB, and sexually transmitted infections. All of these services contribute to the health of the mother and her unborn child.

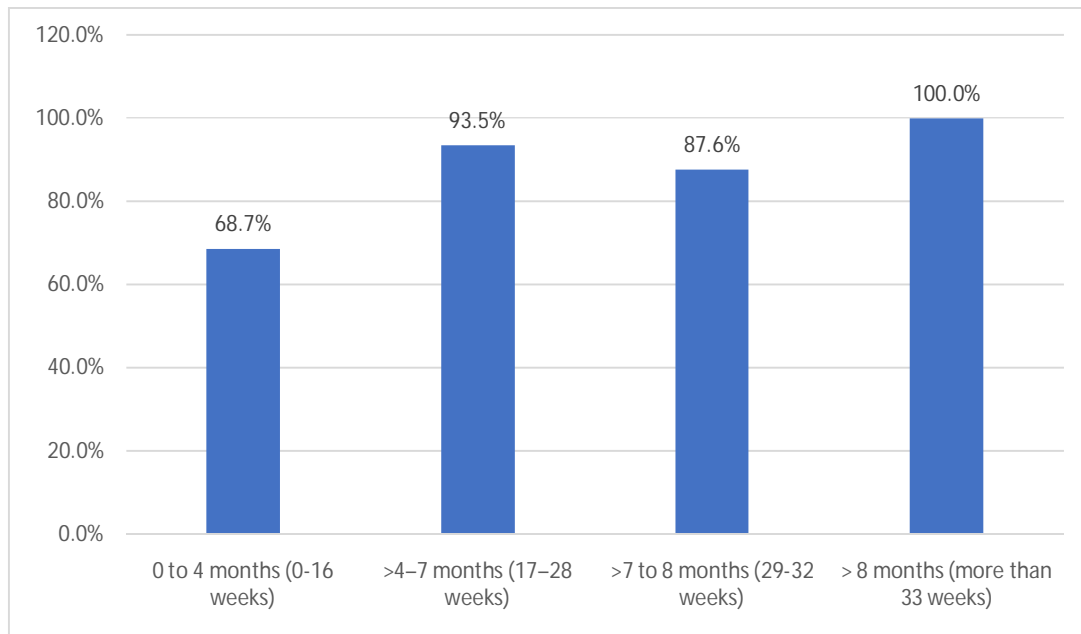


Figure2: Frequency of Attendance of Antenatal Clinics

4.3.3 Number of Actual ANC Visits

Figure 3 shows that 202 (62.5%) had four or more ANC visits with 5 (1.5%) and 85 (26.3%) had one and three visits respectively.

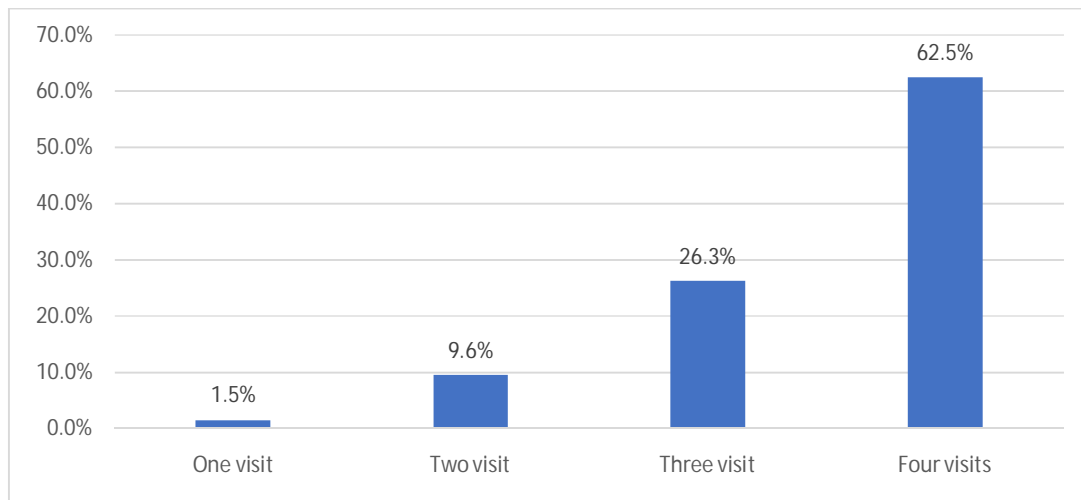


Figure3: Number of Actual ANC Visits

The timing of the initial FANC Visit ultimately affects the actual number of FANC visit by pregnant women. Pregnant women who complete the four FANC Visit are mostly the ones who start their FANC visit in the first trimester

"I was only able to go to the hospital two times to have my baby checked by the doctor because I delivered before the next visit that I had been told to come back". (FGD 8).

4.3.4 Socio-Demographic Factors Influencing Uptake of FANC Services

The utilization of WHO recommended four FANC services reduced with increase in respondents age from 39(65.0%) to 38(60.3%) among respondents 20 years and below and above 40 years respectively. Uptake of FANC services was higher among married 125(67.6%), respondents affiliated to Christianity faith 47(70.1%), formally employed 176(63.8%), and with between 1-2 births 66(67.3%) (Table 2). Further, marital status ($\chi^2=4.674$, $df=1$, $p=0.031$) and level of education ($\chi^2=19.096$, $df=3$, $p=0.0001$) were significantly associated with uptake of FANC services (Table 2.)

Table 2: Socio-Demographic Factors Influencing Uptake of FANC Services

Variables	FANC		Statistics	
	Four visits	< Four visits		
Age	11-20 years	39(65.0%)	21(35.0%)	$\chi^2=0.321$, $df=3$, $p=0.956$
	21-30 years	65(63.1%)	38(36.9%)	
	31-40 years	60(61.9%)	37(38.1%)	
	41-50 years	38(60.3%)	25(39.7%)	
Marital status	Single	77(55.8%)	61(44.2%)	$\chi^2=4.674$, $df=1$, $p=0.031$
	Married	125(67.6%)	60(32.4%)	
Religious affiliation	Christian	176(63.8%)	100(36.2%)	$\chi^2=1.286$, $df=2$, $p=0.526$
	Muslim	19(54.3%)	16(45.7%)	
	Traditional beliefs	7(58.3%)	5(41.7%)	
Level of education	No formal education	5(35.7%)	9(64.3%)	$\chi^2=19.096$, $df=3$, $p=0.0001$
	Primary	19(40.4%)	28(59.6%)	
	Secondary	121(65.4%)	64(34.6%)	
	Tertiary	57(74.0%)	20(26.0%)	
Current employment status	Self-employed	74(66.1%)	38(33.9%)	$\chi^2=4.684$, $df=3$, $p=0.196$
	Employed	47(70.1%)	20(29.9%)	
	Casual laborer	36(56.3%)	28(43.8%)	
	Unemployed	45(56.3%)	35(43.8%)	
Births	None	37(64.9%)	20(35.1%)	$\chi^2=3.161$, $df=3$, $p=0.368$
	1-2 births	66(67.3%)	32(32.7%)	
	3-4 Births	54(62.8%)	32(37.2%)	
	More than 4 births	45(54.9%)	37(45.1%)	

V. DISCUSSION

The study found that At least 222 (68.7%) had ANC visits between 0-16 gestation weeks with 283 (87.6%), and 323 (100%) at 29-32 weeks and more than 33 gestation weeks respectively. This concurs with Kenya Demographic Health Survey[18] that indicated that the majority (88%) of pregnant women in the country receive antenatal care from a skilled birth attendant, which supports this statement. The finding is consistent with the findings of Chelogoi[19] that, despite high usage of antenatal care, the pattern of follow-up was often inappropriate for the majority of pregnant women started using the service around 7-9 months with decreasing number in the 1st and 2nd trimester of pregnancy. The WHO prenatal care guidelines urge that pregnant women undergo at least eight antenatal care visits with health care providers[2]. The new guideline represents a shift from the current paradigm, which requires a minimum of four or more ANC visits, to a more expansive approach that includes several interactions and services. This model proposes that the first contact happens in the first 12 weeks of pregnancy, followed by two contacts in the second trimester (at the 20th and 26th weeks of gestation) and five contacts in the third trimester (30th, 34th, 36th, 38th, and 40th weeks of gestation) (WHO, 2016). As the frequency of contacts between a pregnant woman and a healthcare practitioner increases, so does her satisfaction with ANC services [20].

The study found that 202 (62.5%) had four or more ANC visits with 5 (1.5%) and 85 (26.3%) had one and three visits respectively. The results of this study contradict the conclusions of a previous study conducted by SOS hospital in 2018, which reported an ANC attendance rate of 13% in the Huriwaa region of Mogadishu. Somalian women in their childbearing years have significantly lower rates of attendance at antenatal care (ANC) facilities compared to women in surrounding countries. The explanation for this might be attributed to the high occurrence of instability, cultural challenges, and limited educational achievements among women in Somalia. The antenatal care attendance rates in Somalia, Kenya, and Ethiopia were 24%, 58%, and 62% respectively [18][10], [21]. The high levels of ANC attendance in Guriel can be linked to the cultural acceptability of ANC services, as expressed by 96.8% of the respondents. Furthermore, a significant majority (62.5%) of the women were knowledgeable about the availability of ANC services. A study conducted in Nigeria found that the amount of awareness of ANC services may have a favorable impact on women's utilization of maternal health services, namely ANC services[1].

VI. CONCLUSION

The study highlights that a substantial proportion of women initiated their antenatal visits late, impacting the completion of the recommended four FANC visits. Additionally, marital status and education level were found to significantly influence the uptake of FANC, with married women and those with higher education being more likely to complete the required visits. This suggests that targeted interventions aimed at increasing early antenatal care visits, particularly for younger, unmarried, and less-educated women, could improve FANC uptake. The findings underscore the need for a comprehensive approach that considers socio-demographic factors to enhance maternal and child health outcomes in the region.

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VIII. DECLARATION

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Conflict of interest: None declared

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REFERENCES

- [1] M. McHenga, R. Burger, and D. Von Fintel, "Examining the impact of WHO's Focused Antenatal Care policy on early access, underutilisation and quality of antenatal care services in Malawi: A retrospective study," *BMC Health Serv. Res.*, vol. 19, no. 1, pp. 1–15, 2019, doi: 10.1186/s12913-019-4130-1.
- [2] WHO, "WHO recommendations on antenatal care for a positive pregnancy experience: summary: highlights and key messages from the World Health Organization's 2016 global recommendations for routine antenatal care," *Lancet*, vol. 387, no. 100, pp. 110–198, 2018, doi: 10.1186/1742-4755-10-19.5.
- [3] I. Ahmed, I. Mwanzo, and O. Agina, "A Qualitative Exploration of Access and Utilization of Focused Antenatal Care among Pastoral Community in North Eastern Kenya," *Asian J. Med. Heal.*, vol. 18, no. 6, pp. 1–10, 2020, doi: 10.9734/ajmah/2020/v18i630208.
- [4] R. Heri, L. T. Mselle, and M. Malqvist, "Qualitative Exploration Study of Perceptions of Women and Nurse-Midwives on Antenatal Care Information and Communication in Tanzania," *Int. J. Womens. Health*, vol. 15, no. June, pp. 927–941, 2023, doi: 10.2147/IJWH.S398710.
- [5] C. O. Nwabueze, C. C. Okeke, C. O. Nwevo, L. A. Nwodo, W. C. Nwekpa, and P. I. Nwaiwu, "Assessing Focused Antenatal Care Awareness and Utilization Among Pregnant Women in Enugu State, Nigeria: A Cross-Sectional Survey," *Cureus*, vol. 15, no. 5, pp. 1–15, 2023, doi: 10.7759/cureus.38403.
- [6] Y. Wang, F. Sibaii, K. Lee, M. J. Gill, and J. L. Hatch, "NOTE: This preprint reports new research that has not been certified by peer review and should not be used to guide clinical practice. 1," *medRxiv*, vol. 1, no. 165, pp. 1–13, 2021.
- [7] WHO, "Focused antenatal care: A practical guide," *World Heal. Organ. Libr.*, vol. 16, no. 16, pp. 418–652, 2002, [Online]. Available: https://www.who.int/reproductivehealth/publications/maternal_perinatal_health/focused_anc/en/
- [8] A. M. Rwabilimbo, R. Rushidi, and M. M. Muyodi, "Household decision-making and utilization of antenatal care services in Tanzania: A cross-sectional study," *BMC Health Serv. Res.*, vol. 20, no. 9, pp. 675–683, 2020, doi: 10.1186/s12913-020-05629-6.
- [9] M. Gross, C. M. Mujuni, and S. N. Oresi, "Utilization of focused antenatal care (FANC) services in rural Tanzania: A community-based study," *Int. J. Gynaecol. Obstet.*, vol. 117, no. 91, pp. 265–270, 2012, doi: 10.1016/j.ijgo.2012.02.009.
- [10] G. Basha, "Factors influencing the utilization of focused antenatal care services in Ethiopia: A review of the literature.," *J. Health Care Poor Underserved*, vol. 30, no. 1, pp. 64–81, 2019, doi: 10.1353/hpu.2019.0009.
- [11] E. Sakeah, P. Olupot-Olupot, and U. Uwuigbe, "Antenatal care utilization and factors influencing its use in Northern Ghana," *BMC Pregnancy Childbirth*, vol. 17, no. 8, pp. 346–356, 2017, doi: 10.1186/s12884-017-1506-4.
- [12] K. H. Chol, L. L. Chan, K. K. Lam, and H. L. Yun, "Household decision-making and its impact on the utilization of focused antenatal care (FANC) services in sub-Saharan Africa: A systematic review," *BMC Pregnancy Childbirth*, vol. 19, no. 11, pp. 348–355, 2019, doi: 10.1186/s12884-019-2471-3.
- [13] T. Tekelab, G. W. Tsegaye, and D. H. U. Hemathilake, "Factors affecting the utilization of antenatal care services in Ethiopia: A systematic review and meta-analysis," *BMC Pregnancy Childbirth*, vol. 13, no. 11, pp. 364–371, 2019, doi: 10.1186/s12884-019-2495-8.
- [14] B. M. Mgata and S. O. Maluka, "Factors influencing the use of antenatal care services in Tanzania: A systematic review.," *BMC Health Serv. Res.*, vol. 22, no. 10, pp. 1295–1301, 2019, doi: 10.1186/s12913-019-4119-5.
- [15] J. S. Kisiangani, A. O. Were, and L. F. Kiprop, "Factors affecting the uptake of focused antenatal care (FANC) services in Kenya: A case study of Nairobi County," *Int. J. Heal. Sci. Res.*, vol. 10, no. 9, pp. 112–118, 2020, doi: 10.5430/ijhsr.v10n9p112.
- [16] E. T. Konje *et al.*, "Missed opportunities in antenatal care for improving the health of pregnant women and newborns in Geita district, Northwest Tanzania," *BMC Pregnancy Childbirth*, vol. 18, no. 1, pp. 1–13, 2018.
- [17] M. C. Muthingu, J. Osero, and E. Chomi, "The Perceptions of Women of Reproductive Age towards the Uptake of Focused Antenatal Care Services in Nakuru County," *J. Med. Nurs. Public Heal.*, vol. 1, no. 2, pp. 50–67, 2018.
- [18] KDHS, "Demographic and Health Survey: Key Indicators Report," *Kenya Bur. Stat.*, vol. 1, no. 1, pp. 1–23, 2023.
- [19] D. N. Chelogoi, F. Jonyo, and H. Amadi, "The Influence of Demographic Factors in Access to Public Health Care in Kenya: A Case of Nairobi County, Kenya," *J. Soc. Polit. Sci.*, vol. 3, no. 2, pp. 56–69, 2020, doi: 10.31014/aior.1991.03.02.181.

- [20] P. Funsani, H. Jiang, X. Yang, A. Zimba, T. Bvumbwe, and X. Qian, “Why pregnant women delay to initiate and utilize free antenatal care service: a qualitative study in the Southern District of Mzimba, Malawi,” *Glob. Heal. J.*, vol. 5, no. 2, pp. 74–78, 2021, doi: 10.1016/j.glohj.2021.04.001.
- [21] S. S. Owusu, F. Sibaii, K. Lee, M. Gill, and J. Hatch, “Factors associated with antenatal care service utilization among women with children under five years in Sunyani Municipality, Ghana,” *medRxiv*, vol. 115, no. 16, pp. 1–13, 2021.