AfroGlobal Perspectives
Vol. 3 No. 2 (2026): May 2026
https://doi.org/10.70572/agp.v3i2.130
Original Article

Social factors influencing the utilization of folic acid by pregnant mothers attending antenatal care at Apac General Hospital, Apac district. A cross-sectional study.

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Abstract

Background:

This study assessed the social factors influencing the utilization of folic acid among pregnant mothers attending antenatal care at Apac General Hospital, Apac District.

Methodology:

A hospital-based cross-sectional descriptive study employing quantitative methods was conducted among 32 pregnant mothers attending antenatal care at Apac General Hospital. Participants were selected using simple random sampling. Data were collected using a semi-structured questionnaire, pre-tested for validity and reliability. Data were analyzed using SPSS version 27 and presented in tables, graphs, and percentages.

Results:

The majority of respondents were self-employed (62.5%) and had 3–4 children (43.7%). All respondents (100%) had ever heard about iron and folic acid supplements, with 56.3% obtaining information from health workers. However, only 62.5% were aware of the benefits of the supplements. All respondents (100%) acknowledged that anemia is dangerous, mainly due to risks of maternal and fetal death (62.5%). Despite this awareness, all respondents (100%) had ever failed to adhere to folic acid supplementation. The main reasons for non-adherence included unavailability of supplements (28.3%), forgetfulness (21.8%), and medication fatigue (21.8%). Additionally, 59% reported experiencing medication fatigue, while 59% indicated that the low social status of the family influenced utilization.

Conclusion:

Social factors such as medication fatigue, forgetfulness, low social status, and inadequate, inconsistent adherence significantly influence the utilization of folic acid among pregnant mothers, despite high awareness levels.

Recommendation:

Health workers should strengthen continuous health education and introduce reminder systems to reduce forgetfulness.

Keywords: *Folic acid utilization, pregnant mothers, social factors, medication fatigue, forgetfulness, health education, anemia awareness, Apac General Hospital.*

Submitted: March 19, 2026 Accepted: April 30, 2026 Published: May 30, 2026

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Background.

Utilization of folic acid among pregnant mothers is influenced by a wide range of social factors that affect adherence to antenatal supplementation. Social determinants such as partner support, knowledge levels, education status, family structure, and social behavior significantly shape the uptake of folic acid during pregnancy. Studies in sub-Saharan Africa and other low-resource settings have consistently shown that lack of partner support is a major barrier to proper utilization of folic acid among pregnant women (Lyoba, Mwakatoga, & Festo, 2020). Similarly, inadequate knowledge regarding the importance of iron and folic acid supplementation, as well as the risks associated with non-compliance, has been identified as a key influencing factor limiting utilization (Felipe-Dimog et al., 2021). Low educational attainment and poor social status of households have also been reported to reduce adherence to folic acid supplementation due to limited understanding and financial constraints affecting access (Fite et al., 2021). In addition, factors such as marital status, parity, household size, and lack of spousal support have been associated with poor utilization of folic acid among pregnant mothers attending antenatal care services (Tefera, Ibrahim, & Umer, 2023). Behavioral and psychological factors such as forgetfulness and medication fatigue further reduce consistent intake of folic acid supplements during pregnancy (Nimwesiga, Murezi, & Taremwa, 2021). Similarly, poor attitudes and lack of sustained health education have been reported to negatively influence compliance among pregnant women (Kamau et

al., 2019). Furthermore, low levels of education among both mothers and household heads, combined with poor social status and poverty, have been shown to significantly limit adequate nutritional practices, including folic acid supplementation during pregnancy (Demisse et al., 2021). Therefore, understanding these social factors is essential in designing interventions aimed at improving the utilization of folic acid among pregnant mothers attending antenatal care at Apac General Hospital, Apac District. This study assessed the social factors influencing the utilization of folic acid among pregnant mothers attending antenatal care at Apac General Hospital, Apac District.

Methodology.

Study design.

The study design was cross-sectional descriptive, employing quantitative data collection methods. It was a cross-sectional type of design because data was obtained at a single point in time, and it was descriptive because it allowed the collection of adequate data in the shortest time possible.

Study setting.

The study was carried out at the ANC Clinic at Apac General Hospital, Apac District. Apac district is bordered by Oyam district to the north east, Kole district to the north, Lira district to the north east, Dokolo district to the east, Amolatar district to the south, Nakasongola district to the south west, and Apac district to the west. Apac hospital is located approximately 62 kilometers (39 miles) by road, southwest of Lira and about 230 kilometers (140 miles) by road, north of Kampala, and its coordinates are 01º 58'42.0" N, 32º32'01.0" E (Latitude: 1.978325; Longitude: 32.533618). The administration comprises the medical superintendent as the overall in-charge, followed by the Hospital Administrator and Principal Nursing Officer as the head of the nursing and midwifery department. Specifically, data was collected from the ANC of the hospital, which has 12staff currently, i.e., 6 registered midwives, 2 enrolled midwives, 3 nursing assistants, and 1 cleaner.

The units operate from Monday to Friday with the following activities being carried out, triaging and booking of mothers, high risk assessment, examination of pregnant mothers, screening and treatment of mothers with HIV/AID and other infections, dispensing of routine prophylactic drugs in pregnancy and referral of mothers with complications, immunization, surgical, laboratory services, nutrition services, family planning services, antenatal and post-natal services, EMTCT and RCT services. The study setting was selected because of the manifestation of the problem on the ground.

Study population

The study included pregnant mothers attending ANC services at Apac General Hospital, Apac District.

Sample size.

The sample size was 32 respondents, all pregnant mothers attending ANC services at Apac General Hospital. In this study, the sample size was calculated using the Yamane formula (1967)

$n = N/1+N(e)^2$

Where n = Desired sample size

N =Study population

e =the margin of error in the calculation

$n = 35/1+35(0.05)^2$

$= 35/1.0875$

$= 32.1$

$= 32$

Therefore, the study population was 32 participants, which was above the minimum number required by UNMEB.

Sampling Procedure.

The study utilized a simple random sampling procedure to select the respondents for the study. In this procedure, the researcher wrote the words YES and NO on pieces of paper, folded them, put them in an enclosed box, shook it, and then invited respondents to participate by picking a paper from the enclosed box. Any respondent who picked a paper from the box with the YES written on it was requested to participate in the study. This continued until the number of respondents to be interviewed for the day was achieved. The research targeted 11 respondents per day for 3 days.

Inclusion Criteria

The study included pregnant mothers attending ANC services at Apac General Hospital who had voluntarily consented to participate and were available at the study.

Exclusion Criteria.

The study excluded all pregnant mothers who were ill and could not participate.

Study Variables.

Independent variables.

Economic factors such as unemployment, poverty, lack of money for transport and health services, among others.

Dependent variables.

Utilization of folic acid supplements among pregnant mothers.

Research instruments.

Data was collected using an approved semi-structured questionnaire, which consisted of both open and closed-ended questions. This tool was selected because not all the study participants were literate and able to read, write, and

understand English, and fill in the tool for themselves. The research questionnaire was pre-tested among 3 pregnant mothers at Biashara Health Center II antenatal clinic in the district to enable the researcher to assess its clarity, accuracy, and reliability, and thereafter made any necessary adjustments before applying the questionnaire in the study area.

Data collection procedure.

An approval letter was obtained by the researcher from the principal of Florence Nightingale School of Nursing and Midwifery, and then taken to the facility in charge for approval to carry out the research. The facility administrator introduced the researcher to the person in charge of the ANC clinic. The researcher introduced herself to the respondents and explained the purpose and objectives of the study to them and assured them of maximum confidentiality and privacy of all information given, then asked for their permission to participate in the study by signing the consent form. Each respondent participated in the study for between 15 minutes. The researcher interviewed 11 respondents per day for 3 days.

Data management.

Data management included data editing before leaving the area of study to ensure that there were no mistakes or areas left blank, and any found were corrected before leaving the area of study. Data was stored under lock and key and only accessed by the researcher, while the results were stored on a flash disk for easy retrieval.

Data analysis and presentation.

The collected data were first analyzed using SPSS version 27, after which the researcher presented them in tables, graphs, and pie charts.

Ethical Considerations.

A letter of introduction was obtained from the Principal of Florence Nightingale School of Nursing and Midwifery, introducing the researcher and seeking permission to carry out the study from the administration of Apac General Hospital. After approval and permission were granted, the researcher was introduced to the person in charge of the ANC Clinic, who introduced her to the respondents. Participants were assured of the privacy of identify and maximum confidentiality, and numbers instead of names were used to identify respondents. The study only commenced after the objectives of the study had been well explained to participants, and they had understood and consented to participate in the study.

Results.

Demographic and social characteristics

Table 1: Demographic and social characteristics of respondents (n=32)

Variable	Frequency (f)	Percentage (%)
Age		
18 – 25 years	8	25
26 – 35 years	18	56
36 – 47 years	6	19
Marital status		
Single	10	31
Married	22	69
Level of education		
Primary level	15	46.8
Secondary level	8	25
Tertiary level	5	15.7
No formal education	4	12.5
Occupation		
Peasant farmer	8	25
Self employed	20	62.5
Professional	4	12.5
Number of children		
1 – 2 children	8	25
3 – 4 children	14	43.7
5 children and above	10	31.3

From table 1, the majority of the respondents, 18 (56%), were in the age range of 26 – 35 years, followed by 8 (25%) who were 18 – 25 years, while the least were 6 (19%) who were 36 – 47 years. The majority of the respondents, 22 (69%), were married, while the least were 10 (31%) were single. Almost half15 (46.8%) of the respondents attained

primary level education, followed by 8 (25%) who attained secondary level education, while the least 4 (5.9%) did not attain any formal education. Almost two-thirds 20 (62.5%) of respondents were self-employed, while the least 4 (12.5%) were professional. A total of 14 (43.7%) respondents had 3 – 4 children, followed by 10 (31.3%) who had 5 children and above, while the least 8 (25%) had 1 – 2 children.

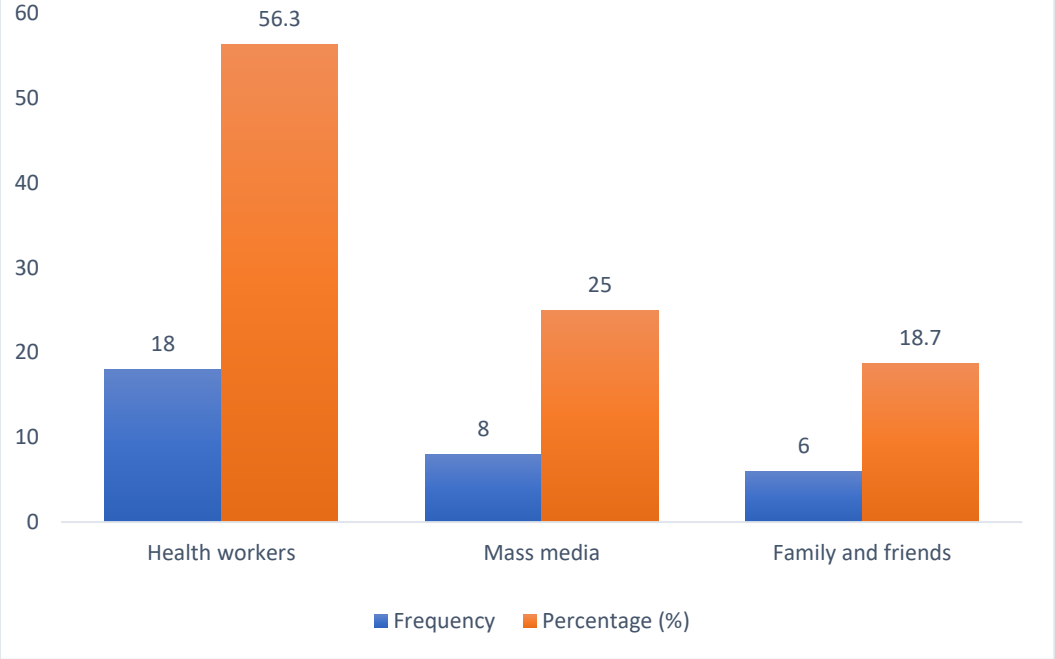
Social factors influencing the utilization of folic acid by pregnant mothers

Table 2: Ever heard about iron and folic supplements (n=32)

Responses	Frequency	Percentage (%)
Yes	32	100
No	0	0

All 32 (100%) of the respondents had ever heard about iron and folic acid supplements.

Figure 1Source of information about iron and folic acid supplements (n=32)



Most of the respondents, 18 (56.3%), obtained information about iron and folic acid supplements from health workers, followed by 8 (25%) who obtained information from mass media, while the least, 6 (18.7%), obtained information from family and friends.

Table 3: Awareness of the benefits of iron and folic supplements during pregnancy(n=32)

Responses	Frequency	Percentage (%)
Yes	20	62.5
No	12	37.5

The majority of the respondents, 20 (62.5%), were aware of the importance/benefits of iron and folic supplements during pregnancy, while the least 12 (37.5%) were not aware.

Table 4: Benefits of iron and folic supplements during pregnancy (f=20)

Benefits	Frequency	Percentage (%)
To increase the amount of blood in the body	10	50
To ensure the good growth and development of the fetus	6	30
To prevent anaemia	4	20

Out of the 30 respondents who were knowledgeable about the benefits of iron and folic supplements during pregnancy, half 10 (50%) reported increasing the amount of blood in the body, followed by 6 (30%) who reported ensuring good growth and development of the fetus while the least 4 (20%) reported preventing anaemia.

Table 5: Whether anaemia is dangerous (n=32)

Responses	Frequency	Percentage (%)
Yes	32	100
No	0	0

All 32 (100%) of the respondents agreed that anaemia is dangerous.

Table 6: Reasons why anaemia is dangerous (n=32

Reasons	Frequency	Percentage (%)
It can lead to the death of the mother and the unborn child	20	62.5
It leads to poor development and growth of the fetus	12	37.5

A total of 20 (62.5%) respondents reported anaemia is dangerous because it can lead to death of the mother and unborn child, while at least 12 (37.5%) reported that it leads to poor development and growth of the fetus.

Table 7: Ever failed to adhere to the iron and folic supplements as recommended(n=32)

Responses	Frequency	Percentage (%)
Yes	32	100
No	0	0

All 32 (100%) of the respondents had ever failed to adhere to the iron and folic supplements.

AfroGlobal Perspectives
Vol. 3 No. 2 (2026): May 2026
https://doi.org/10.70572/agp.v3i2.130
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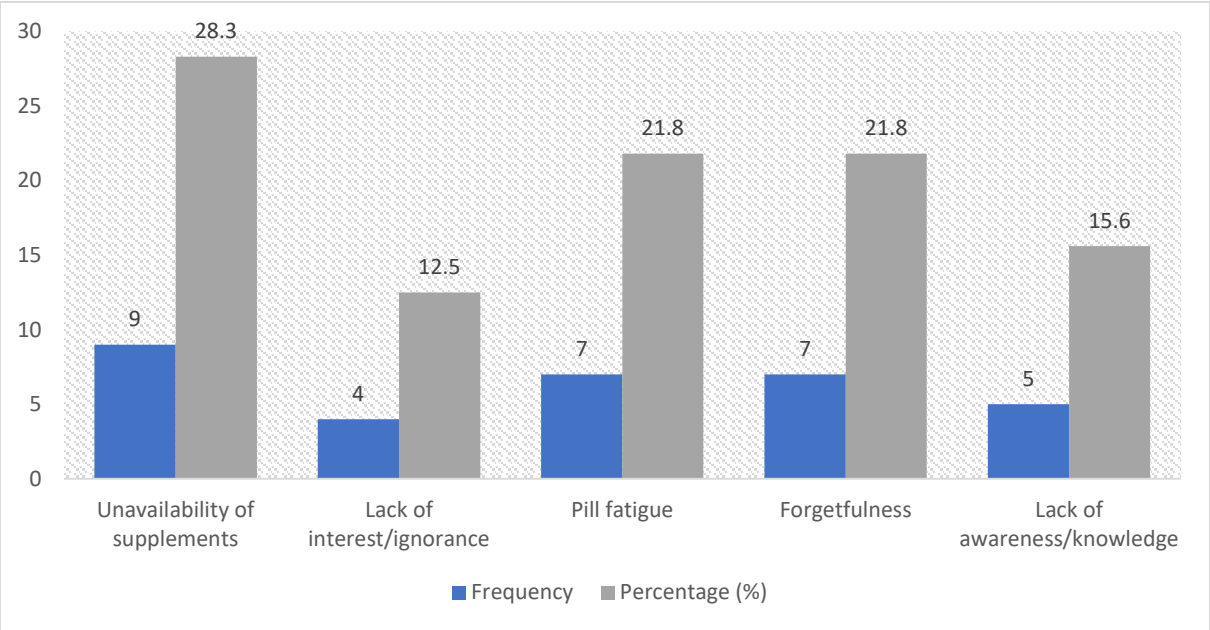
Figure 2: Reasons for failing to adhere to iron and folic supplements (n=32)



A total of 9 (28.3%) respondents reported unavailability of supplements as a reason for failing to adhere to iron and folic supplements, followed by 7 (21.8%) who reported pill fatigue and forgetfulness, respectively, 5 (15.6%) reported lack of awareness/knowledge, while the least 4 (12.5%) reported lack of interest/ignorance.

Table 8: Ever forget to take iron and folic supplements (n=32)

Responses	Frequency	Percentage (%)
Yes	32	100
No	0	0

All 32 (100%) of the respondents reported ever forgetting to take iron and folic acid supplements.

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https://doi.org/10.70572/agp.v3i2.130
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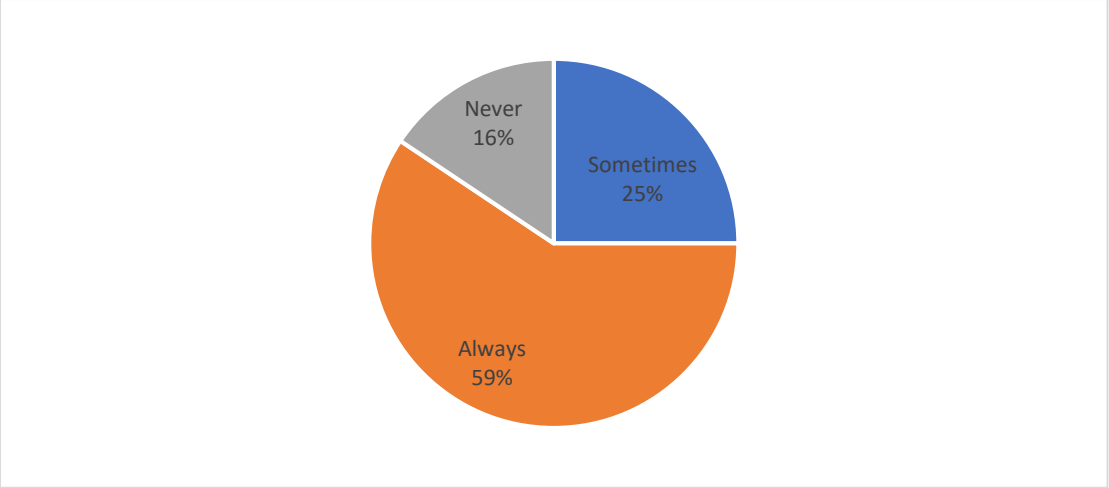
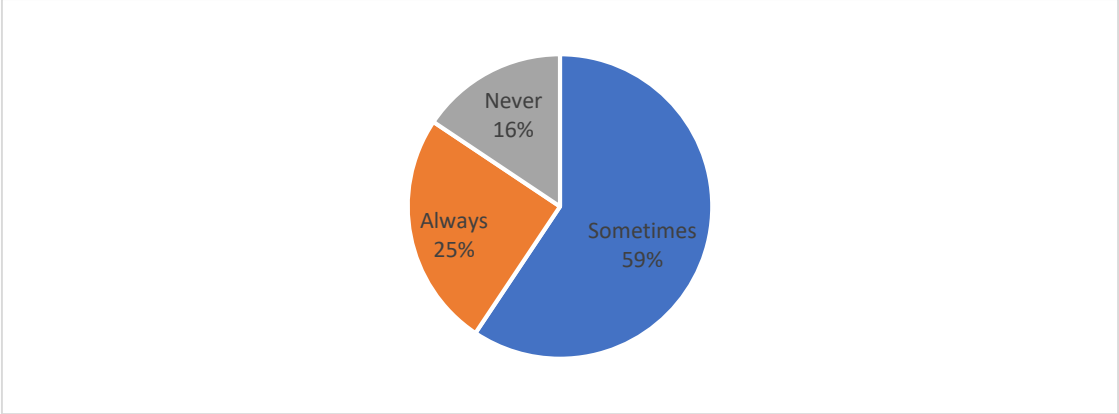
Figure 3: Ever suffered from medication or tablet fatigue (n=32)



A total of 19 (59%) respondents always suffered from medication or tablet fatigue, and it influenced utilization of iron and folic supplements, followed by 8 (25%) who sometimes suffered from it, while the least 5 (16%) never suffered from medication or tablet fatigue.

Figure 4: Whether the low social status of the family influences the utilization of iron and folic supplements (n=32)



Most 19 (59%) of the respondents reported that the low social status of the family influenced utilization of iron and folic supplements, which was due to poor access to supplements, followed by 8 (25%) who reported that it always influenced, while the least 5 (16%) reported that it never influenced.

Discussion.

Social factors influencing the utilization of folic acid by pregnant mothers

All 32 (100%) respondents had heard about iron and folic acid supplements, with 18 (56.3%) obtaining information from health workers and 8 (25%) from mass media. This is likely due to increased sensitization by health workers about these supplements. This finding contrasts with a study by Felipe-Dimog et al. (2021), which analyzed the 2017 Philippine Demographic and Health Survey and found that social factors influencing the compliance of pregnant women with iron and folic acid supplementation included a lack of sufficient knowledge about the benefits or importance of these supplements during pregnancy. These contrasting results highlight the critical role of health worker engagement and effective communication in enhancing awareness and utilization of iron and folic acid supplements among pregnant women.

All 32 (100%) respondents agreed that anemia is dangerous, with 20 (62.5%) stating it can lead to the death of the mother and unborn child, and 12 (37.5%) reporting it results in poor development and growth of the fetus. This awareness suggests that respondents are likely to emphasize adherence to iron and folic acid supplements and ensure good nutrition during pregnancy. This finding aligns with Felipe-Dimog et al. (2021), whose study on the factors influencing the compliance of pregnant women with iron and folic acid supplementation in the Philippines found that social factors impacting the utilization of these supplements included a lack of sufficient knowledge about their benefits and the dangers of not using them during pregnancy. This agreement emphasizes the importance of education and awareness in promoting compliance with supplement guidelines to prevent anemia and its associated risks.

Above a fifth, 7 (21.8%) of respondents reported experiencing pill fatigue. This implies that the consistent intake of iron and folic acid supplements was tiresome for some respondents, leading to non-compliance with the recommended regimen. This finding aligns with Kamau et al. (2019), whose study on the effect of community-based health education on knowledge and attitudes towards iron and folic acid supplementation among pregnant women in Kiambu County, Kenya, found that social factors influencing the utilization of folic acid included medication or tablet fatigue. These insights highlight the need for strategies to address pill fatigue, such as alternative supplement forms or supportive measures to enhance adherence among pregnant women.

A study found that 7 (21.8%) respondents reported forgetfulness, likely due to living alone and not having someone to remind them to take the supplements. This finding aligns with Nimwesiga, Murezi, and Taremwa (2021), whose study on adherence to iron and folic acid supplementation among pregnant women attending antenatal care at Bwindi Community Hospital in Western Uganda revealed that forgetfulness was a significant social factor influencing the utilization of folic acid. This emphasizes the need for interventions such as reminder systems or support networks to improve adherence to supplement regimens among pregnant women.

Conclusion

Social factors such as medication fatigue, forgetfulness, low social status, and inadequate, inconsistent adherence significantly influence the utilization of folic acid among pregnant mothers, despite high awareness levels.

Limitations of the study.

The study encountered challenges during data collection due to language barriers.

There was also a challenge of time constraints in the course of the study, balancing the research study and other demanding coursework.

Recommendation

Health workers should strengthen continuous health education and introduce reminder systems to reduce forgetfulness. Antenatal clinics should also address medication fatigue and enhance partner and family involvement to improve adherence to folic acid supplementation.

Acknowledgement

I sincerely acknowledge the Almighty God for my life and the gift of perseverance he has given me throughout my academic journey.

I also extend my gratitude to my beloved parents, siblings, and friends for their unending love, support, and encouragement offered to me.

I wish to acknowledge Mr. Awoi Ronald for the contribution and cooperation rendered to me in the process of this study; he has not been my supervisor only, but also a teacher and, most importantly, my mentor.

I fully acknowledge the principal, teaching and non-teaching staff, and all students of Florence Nightingale School of Nursing and Midwifery for the significant roles they have played in my life while at school.

I wish to acknowledge the administration of Apac General Hospital for granting me permission to carry out research and all nurses who were involved in the study.

I also extend my sincere thanks to my discussion group mates for the support they rendered to me during this period, and also to those whom I have not mentioned but have been so essential in my life. May the good Lord our God bless you abundantly.

List of Abbreviations

ANC – Antenatal Care
AIDS – acquired immunodeficiency syndrome
Apac GH – Apac General Hospital
HIV – Human Immunodeficiency Virus
LBW – Low Birth Weight
MOH – Ministry of Health
RBC – Red Blood Cells
SPSS – Statistical Package for the Social Sciences
UDHS – Uganda Demographic and Health Survey
UNMEB – Uganda Nurses and Midwives Examinations Board
WHO – World Health Organization

Informed Consent:

Written informed consent was obtained from all participants prior to their inclusion in the study. Participants were informed about the purpose of the study, procedures

involved, potential risks and benefits, and their right to withdraw at any time without penalty.

Source of funding.
The study was not funded.

Conflict of interest.
There is no conflict of interest.

Availability of data.
Data used in this study are available upon request from the corresponding author.

Authors contribution.
HA designed the study, conducted data collection, cleaned and analyzed data, and drafted the manuscript.
RA supervised all stages of the study from conceptualization of the topic to manuscript writing and submission.
DO supervised all the research process
TMO supervised the research process.
LO supervised the research process.

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AfroGlobal Perspectives
Vol. 3 No. 2 (2026): May 2026
https://doi.org/10.70572/agp.v3i2.130
Original Article

PUBLISHER DETAILS

AfroGlobal Press

AfroGlobal Press
Amplifying Voices Worldwide

Contact: +256 763 123 847

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Website: https://afroglobalpress.com

Address: Scholar's Summit, Nakigalala, East Africa