

Knowledge, attitude, and practices towards iron and folic acid supplementation among pregnant women attending Mudakori Health Centre III, Tororo district. A cross-sectional study.
Justine Nyafwono*, Prosper Mubangizi
Kampala School Of Health Sciences

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Abstract

Background:

The aim of the study is to assess the knowledge, attitude, and practices towards iron and folic acid supplementation among pregnant women attending Mudakori Health Centre III, Tororo district.

Methodology:

A cross-sectional study using a quantitative approach. A simple random sampling technique was used. Data analysis was done manually through tallying, coding, and editing. Raw data was cleaned and entered in the computer using Microsoft Excel to generate bar graphs, frequency distribution tables, and pie charts for easy presentation.

Results:

(54%) were within the range of 18-24 years, (46%) were housewives, (38%) had 3-4 children, 50(100%) had ever heard about Iron and Folic Acid Supplementation. 48(96%) got information about iron and folic acid from health staff, while none reported obtaining information from the media. (40%) mentioned vegetables as the source of Iron and folic acid, 31(62%) believed that folic acid should be taken throughout, 60% agreed that folic acid cannot be taken without a prescription, 37(74%) were currently taking IFAS, whereas the minority. (58.3%) never took IFAS due to fear of side effects, 35 (70%) respondents started antenatal care at gestational age of 4-6 months. (30%) They were 1km away from the health facility.

Conclusion:

The level of knowledge towards iron and folic acid supplementation was high, evidenced by (100%) having heard about IFAS. The attitudes of respondents towards iron and folic acid supplementation were fairly evidenced by (68%) agreeing that folic acid is important during pregnancy. Their practices were good, as (74%) were currently taking iron and folic acid supplementation.

Recommendations:

Accurate information should be given to women on the appropriate time for starting and the duration recommended for taking iron and folic acid supplementation.

Keywords: Knowledge, attitude, and practices, Iron and folic acid supplementation, Pregnant women attending Mudakori health centre III.

Submitted: April 08, 2025 **Accepted:** February 12, 2026 **Published:** September 10, 2026

Corresponding author: Justine Nyafwono

Email: nyafwonojustine@gmail.com

Kampala School Of Health Sciences

Background

Folic Acid is a term that refers to a group of water-soluble vitamins of the complex B, which are naturally found in foods such as leafy vegetables, citrus fruits, and liver. Iron and Folic Acid deficiency is a widespread nutritional public challenge among pregnant women, **which** is a result of increased demand by the body and thus **has** severe consequences for both productive and reproductive roles. This may augment anaemia in pregnancy and life-

threatening foetal anomalies like haemorrhagic disease of the **newborn**, physical and cognitive dysfunction (Nimwesiga C. et al, 2021). There is consequently low compliance with Iron and Folic Acid Supplementation (IFAS) during pregnancy in developing countries, and **it** has been significantly associated with low or no use of antenatal care services since the main opportunity for IFAS is antenatal care clinics. Furthermore, most **healthcare** providers are overworked. Heavy workload for health care

providers means that they do not have much time to counsel clients (Kamau et al. 2019). In Africa, the uptake of Folic Acid is very low; for example, in Ghana is below 28.7%, yet more than 66.7% of women are aware of it (Mohamed, Kawawa, & Wemakor, 2022). In Thailand, the uptake of Folic Acid during the three months before conception and the first trimester of pregnancy is at 7.7%. Some Mothers do not know that folic acid is recommended to be started three months before pregnancy. Negative attitudes were confirmed by the disbelief that Folic acid can prevent birth defects, the possibility of taking folic acid without a prescription, fear of side effects, and discomfort while taking the medication (Atayo & Nansereko, 2023). The findings of this study will aid the stakeholders and policy makers in the Ministry of Health and the country government to establish strategies that improve maternal outcomes by enhancing the uptake of IFAS among pregnant women. The aim of the study is to assess the knowledge, attitude, and practices towards iron and folic acid supplementation among pregnant women attending Mudakori Health Centre III, Tororo district.

METHODOLOGY

Study design

In this research, a cross-sectional study was used and employed a quantitative approach.

Study Area

This study was conducted at Mudakori Health Centre III, which was established by the Government of the Republic of Uganda and is under its full control, with the aim of providing health services to the population surrounding it. It has an Outpatient Department, Expanded Program on Immunisation (EPI), Medical Laboratory, ART clinic, Nutrition department, and Maternity department. Located along the Tororo- Malaba highway, 270.1km away from Kampala. Data collection exercise was at the maternity department, being the fact that it was a suitable, accessible focal point where the researcher could access pregnant women.

Study Population

The study population was pregnant women attending Antenatal care (ANC) at Mudakori Health Centre III, Tororo District,

Sample size determination

Sample size was calculated using $S=QR/T$ (Burton, 1965)

Where;

S=Sample size

Q = Total number of days spent in data collection

R = Maximum number of people per day

T = Maximum time the interviewer spent on each participant

Q=5 days

R = 10 people

T=1hr

$S=5*10/1$

=50

Therefore, the researcher used 50 respondents due to financial and time constraints.

Sampling technique

A simple random sampling technique was used to select respondents from the study population. This is because this technique ensured freedom from human bias compared to other techniques, and each member of the target population had an equal and independent chance of being included.

Sampling procedure

Pregnant women were selected randomly, a list of pregnant women present at that time was made, an equal number of papers were assigned 'YES' and 'NO', folded, mixed up, and each mother was given a chance to pick randomly. Those who picked YES were the eligible respondents, and the 'NOs' were not. When the sample size was not realized, this was replaced by another round of picking by those who were not selected in the first round.

Data collection method/ tool

The questionnaire method was used to collect data from respondents. A semi-structured questionnaire as a tool was used by the researcher to collect data from respondents. It was designed according to the specific objectives of the study with open and closed questions, written in the English language, and was later translated into the local language for respondents unable to comprehend English. A questionnaire was used because it is suitable for collecting data within the shortest time possible.

Data collection procedure

An introduction letter was obtained from the Principal Kampala School of Health Sciences and then taken to the office of the District Health Officer (D.H.O), Tororo District, who forwarded the researcher to the in-charge Mudakori Health Centre III, who granted permission to proceed with data collection in the facility.

Pregnant women's knowledge was assessed using semi-structured questions, explained to until she confirmed she understood. Data was collected using a well-structured questionnaire that was completed through face-to-face interviews with the respondents. The findings included information regarding participants' demographics, knowledge, attitude, and practices towards Iron and Folic Acid Supplementation.

After the exercise, the participants were thanked for their contribution to the study, and the researcher checked

through the data filled in the questionnaires before the respondents left the facility to ensure that the questionnaire was fully filled.

Study variables

Dependent variable

The dependent variable was Iron and Folic Acid Supplementation.

Independent variable

Independent variables were Knowledge, Attitude, and Practices.

Quality control

Pretesting of a questionnaire

To ensure quality data, the research tool was pretested on 5 other eligible women (not among the final respondents), which was aimed at evaluating the validity and reliability of the tool for data collection.

Selection criteria

Inclusion criteria

The inclusion criteria were pregnant women in Mudakori health centre III utilizing ANC services during the period of data collection, and willing to consent to take part in the study.

Exclusion criteria

The exclusion criteria comprised pregnant women in Mudakori Health Centre III who were present during the period of data collection and were not willing to consent and take part in the study.

Data analysis and presentation

Data analysis was done manually through tallying, coding, and editing. Raw data was cleaned and entered into the computer using Microsoft Excel to generate bar graphs, frequency distribution tables, and pie charts for easy presentation.

Ethical consideration

A letter of introduction was obtained from Kampala School of Health Sciences Research Committee, introducing the research and seeking permission to carry out the study with assurance of confidentiality. The study commenced after the objectives of the study were well explained to the participants, and they consented to participate in the study. Any information obtained from the respondents was kept confidential, and questionnaires were stored in a lockable case.

Study limitations and their solutions

Limited time since some respondents did not have enough time to fill out the whole questionnaire. Therefore, the research assistant was used.

Inadequate finance since no external source of funds was provided for the study. The available funds were used appropriately.

Language barrier since patients came from different regions of the country and were residents of the study area. An interpreter was used in translating into different languages, such as Kiswahili and itesot.

Uncooperative respondents also affected the study negatively. So, they were dropped from the study.

RESULTS

Demographic data

Table 1: Shows distribution of respondents according to demographic data (N=50)

Variable	Frequency (f)	Percentage (%)
Age		
18-24	27	54
25-31	11	22
32-38	7	14
39-45	5	10
TOTAL	50	100
Religion		
Protestant	23	46
Catholic	22	44
Pentecostal	5	10
Moslem	0	0
Others	0	0
TOTAL	50	100
Marital status		
Married	19	38
Single	2	4
Separated	3	6
Co habiting	26	52
TOTAL	50	100
Level of education		
None	3	6
Primary	11	22
Secondary	23	46
Tertiary	13	26
TOTAL	50	100
Occupation		
Business	9	18
Housewife	23	46
Peasant farmer	17	34
Others	1	2
TOTAL	50	100

Number of children		
none	2	4
1-2	16	32
3-4	19	38
5-6	11	22
Above 6	2	4
TOTAL	50	100

Knowledge towards Iron and Folic acid supplementation among pregnant women attending Mudakori Health Centre III

Table 2: Distribution of respondents according to whether they have ever heard about IFAS. (N=50)

Variable	Frequency(f)	Percentage (%)
Those who had ever heard	50	100
Those who had never heard	0	0

Table 2, all the respondents 50(100%) had ever heard about Iron and Folic Acid Supplementation.

Figure 1: Shows the distribution of respondents according to their sources of information about iron and folic acid supplementation. (N=50)

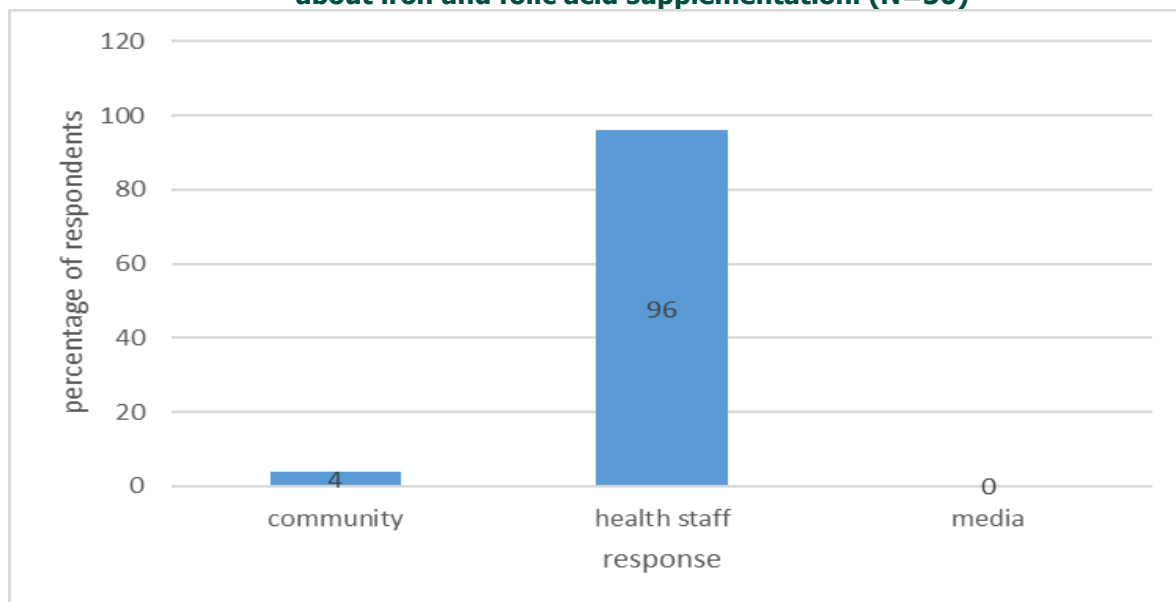


Figure 1: The majority of 48(96%) of respondents got information about iron and folic acid from health staff, while none reported obtaining information from the media.

Table 3: Distribution of respondents according to what they knew about the gestational age at which a mother should start IFAS. (N=50)

Response	Frequency(f)	Percentage (%)
Before pregnancy	4	8
Any time during pregnancy	15	30
Upon getting pregnant	25	50
Not sure	6	12
TOTAL	50	100

Table 3, Half of the respondents (50%) knew the recommended time for starting IFAS, that is, upon getting pregnant, while the least (8%) reported before pregnancy.

Table 4: Distribution of respondents according to what they knew about the recommended duration of taking IFAS. (N=50)

Response	Frequency(f)	Percentage (%)
First three months of pregnancy	17	34
First 6 months of pregnancy	13	26
Throughout pregnancy	15	30
Didn't know	5	10
TOTAL	50	100

Table 4, most (34%) respondents mentioned the first three months of pregnancy as the recommended duration for taking IFAS, while the least (5%) did not know.

Figure 2: Distribution of respondents according to what they knew about how many tablets should be taken per day. (N=50)

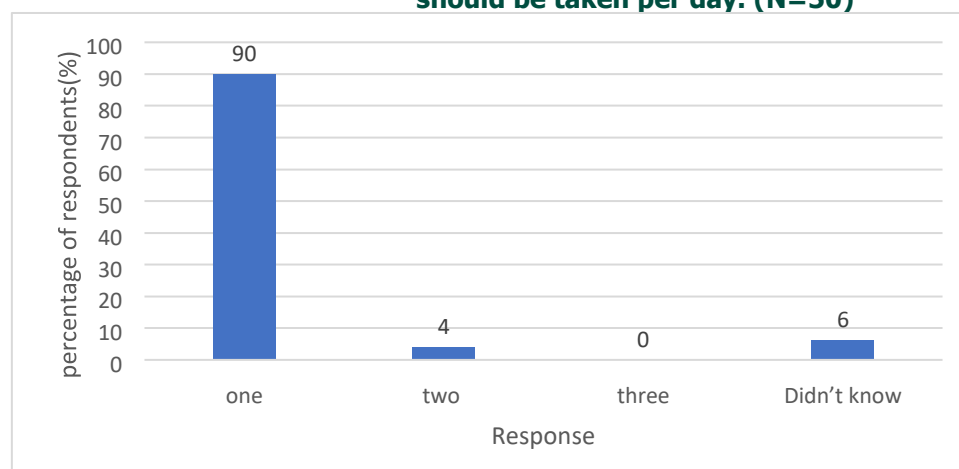


Figure 2: The majority, 45 (90%) of the respondents mentioned one tablet, while the least mentioned three.

Table 5: Distribution of respondents according to what they knew about the dangers of not taking IFAS. (N=50)

Response	Frequency(f)	Percentage (%)
Anaemia	29	58
Birth abnormalities	16	32
Nothing	2	4
Didn't know	3	6
TOTAL	50	100

Table 5, More than half (58%) of the respondents mentioned that the dangers of not taking IFAS are anaemia, whereas the least (4%) mentioned nothing.

Table 6: Distribution of respondents according to what they knew about why a mother should take IFAS. (N=50)

Response	Frequency(f)	Percentage (%)
To prevent anaemia	35	70
To prevent spina bifida	0	0
To prevent birth abnormalities	12	24
Didn't know	3	6
TOTAL	50	100

Table 6 show, Majority (70%) of respondents knew that a pregnant woman should take folic acid to prevent anaemia, while the minority (6%) did not know.

Table 7 shows the distribution of respondents according to what they knew about foods that contain iron and folic acid. (N=50)

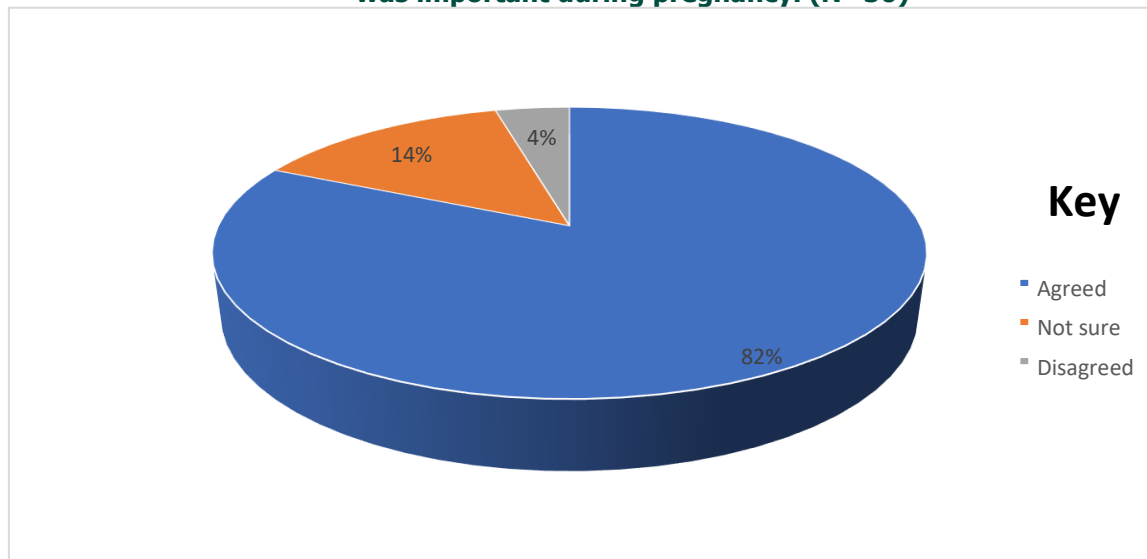
Response	frequency(f)	percentage (%)
meat	17	34
vegetables	20	40
eggs	4	8
more than one food type	6	12
Those who did not know	3	6
TOTAL	50	100

Table 7 most (40%) respondents mentioned vegetables as the source of Iron and folic acid, while the least 6% did not know.

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Figure 3 shows the distribution of respondents according to whether they believed folic acid was important during pregnancy. (N=50)

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From figure 3, the majority 82% respondents agreed that folic acid is important during pregnancy, while the least 4% disagreed.

Figure 4 shows the distribution of respondents according to their belief whether folic acid should be taken throughout pregnancy. (N=50)

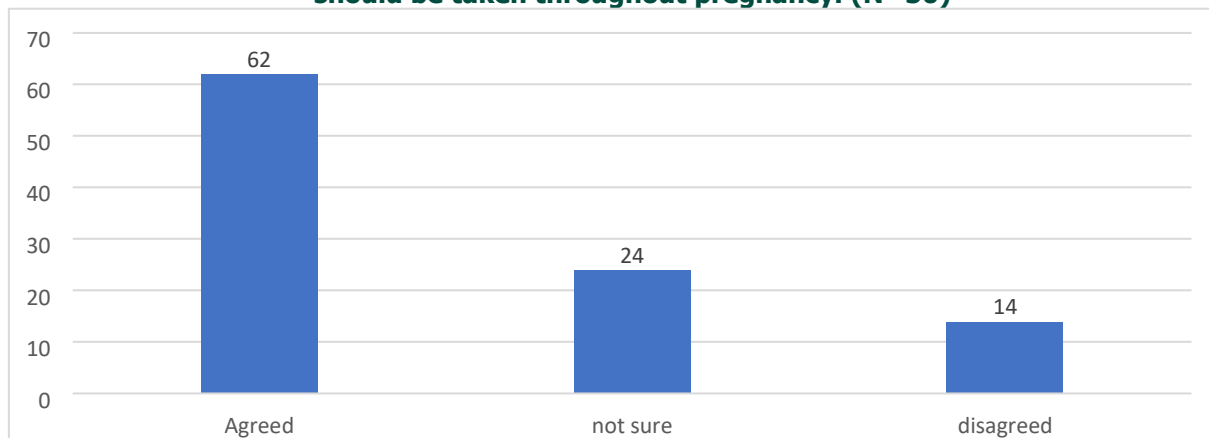


Figure 4, the majority of 31(62%) of the respondents believed that folic acid should be taken throughout pregnancy, while minority 7(14%) disagreed.

Figure 5: Distribution of respondents based on their belief that IFAS could be taken without a prescription. (N=50)

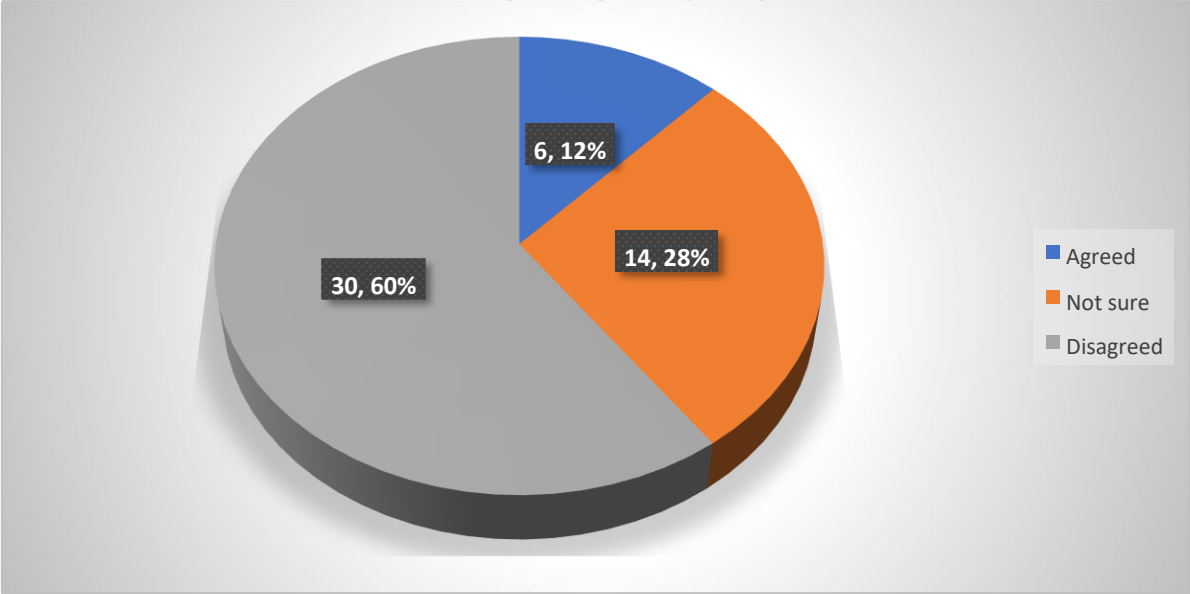


Figure 5, the majority, 60% of respondents agreed that folic acid cannot be taken without a prescription, while minority 12% disagreed.

Figure 6 shows the distribution of respondents according to their belief that foods rich in folic acid can provide the adequate folic acid required by the body. (N=50)

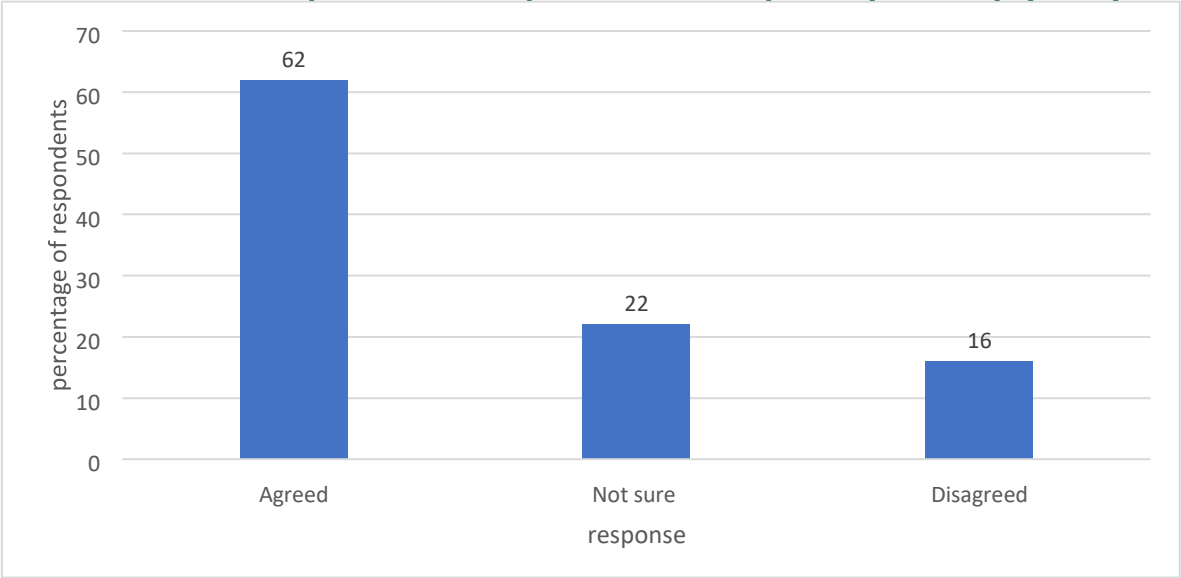
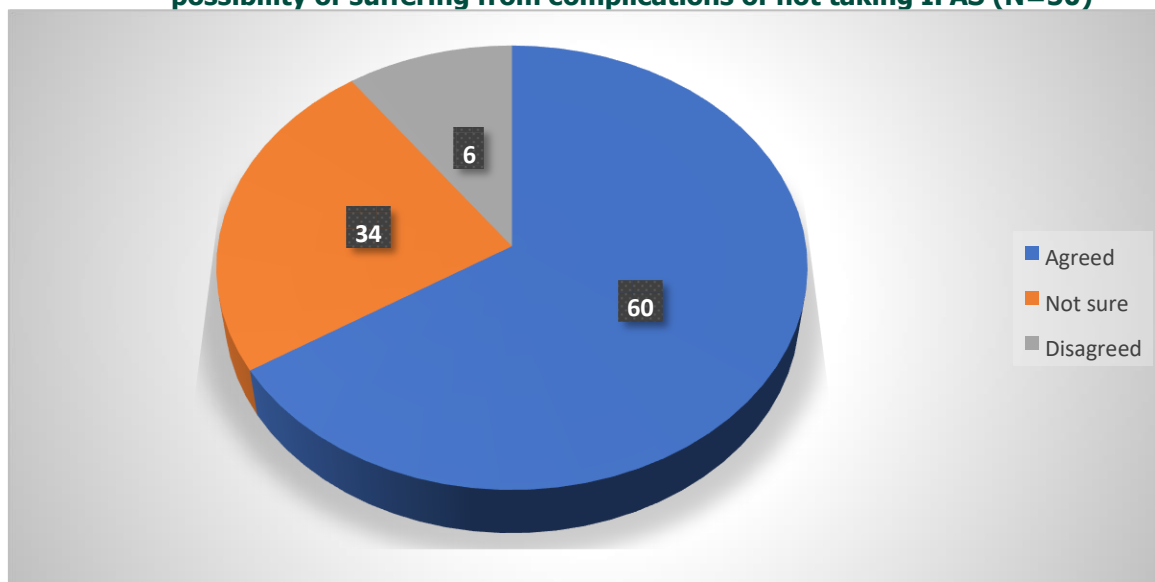


Figure 6 shows that the majority (62%) agreed that foods rich in folic acid can provide adequate folic acid required by the body, whereas the minority (16%) disagreed.

Figure 7 shows the distribution of respondents based on their belief in whether there was a possibility of suffering from complications of not taking IFAS (N=50)



From figure 7, the majority 30(60%) agreed that there was a possibility of suffering from complications of not taking IFAS, while the minority 3(6%) were not sure.

Figure 8: Distribution of respondents according to them believe whether taking Iron and folic acid supplementation affects the mother. (N=50)

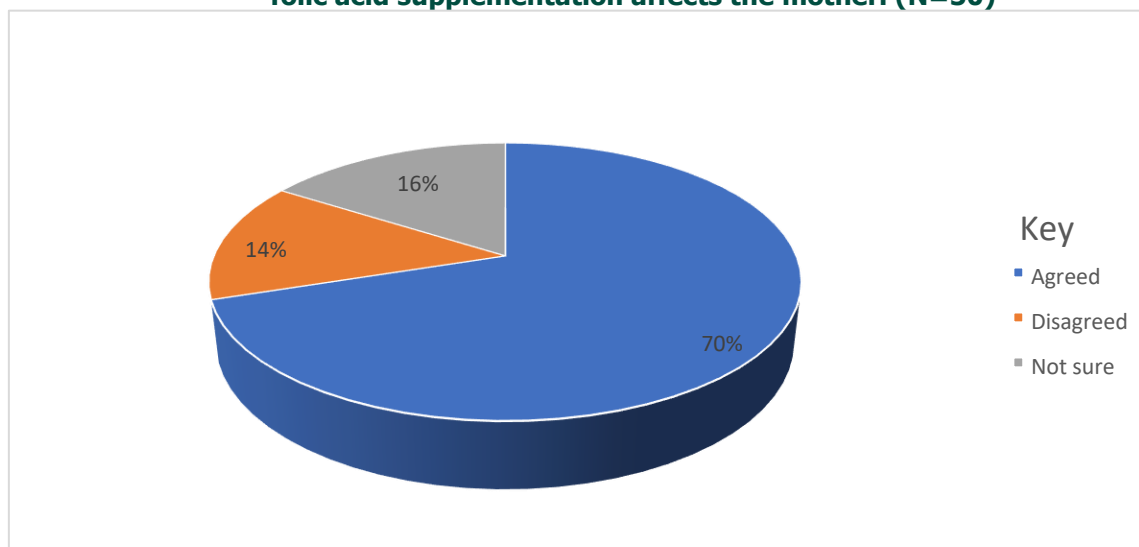


Figure 8, Majority (70%) of respondents agreed that taking IFAS affects the mother, while (14%) disagreed.

Figure 9: Distribution of respondents based on their Willingness to take iron and folic acid supplementation (N=50)

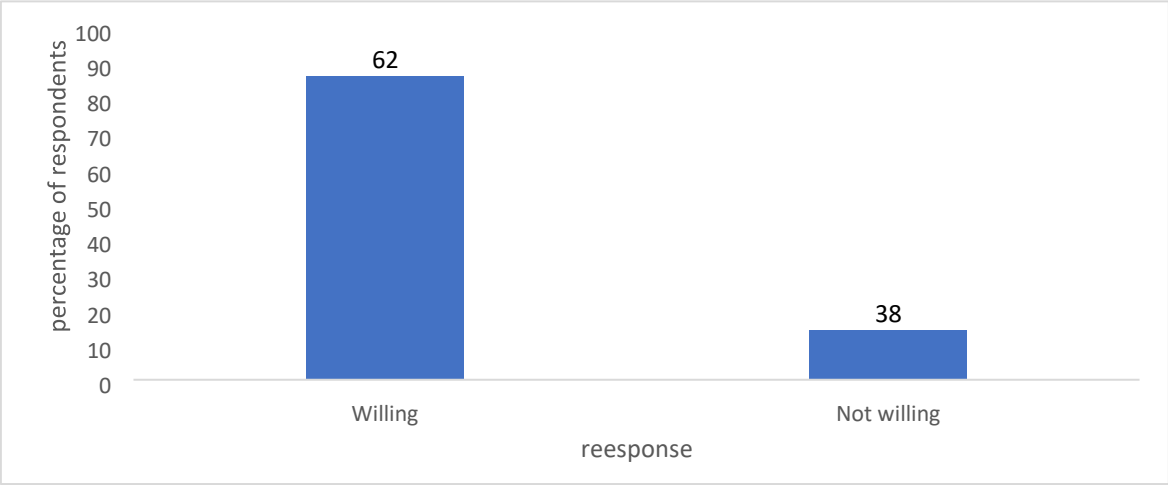


Figure 9, the majority of respondents, 31(62%), were willing to take iron and folic acid supplementation, while 19 (38%) were not willing.

Practices towards Iron and Folic acid supplementation among pregnant women attending Mudakori Health Centre III

Figure 10: Distribution of respondents currently taking iron and folic acid supplementation (N=50)

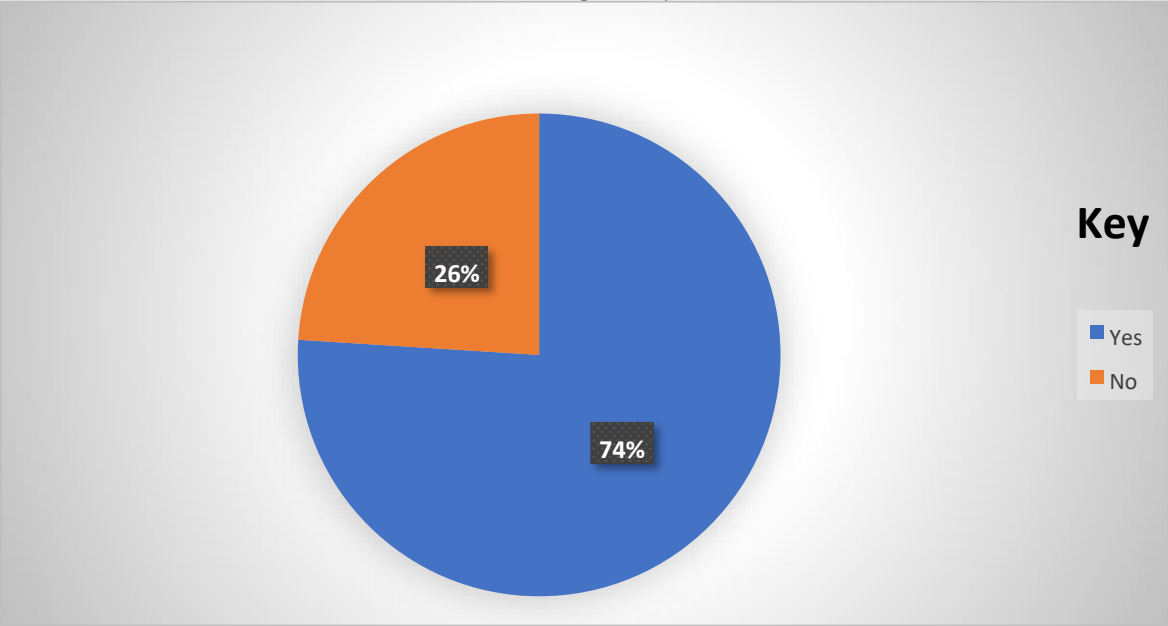


Figure 10, the majority, 37(74%) of respondents were currently taking IFAS, whereas the minority, 13(26%) were not taking it.

Table 8: Distribution of respondents according to their reasons for not taking iron and folic acid supplementation. (N=13)

Response	Frequency (f)	Percentage (%)
Fear of the side effects	7	53.8
Forgetfulness	1	7.7
First visit	5	38.5
Total	13	100

Table 8, more than half (58.3%) of respondents never took IFAS due to fear of side effects, while the least (7.7%) was forgetfulness.

Figure 11: Distribution of respondents according to whether they got side effects or not (N=50)

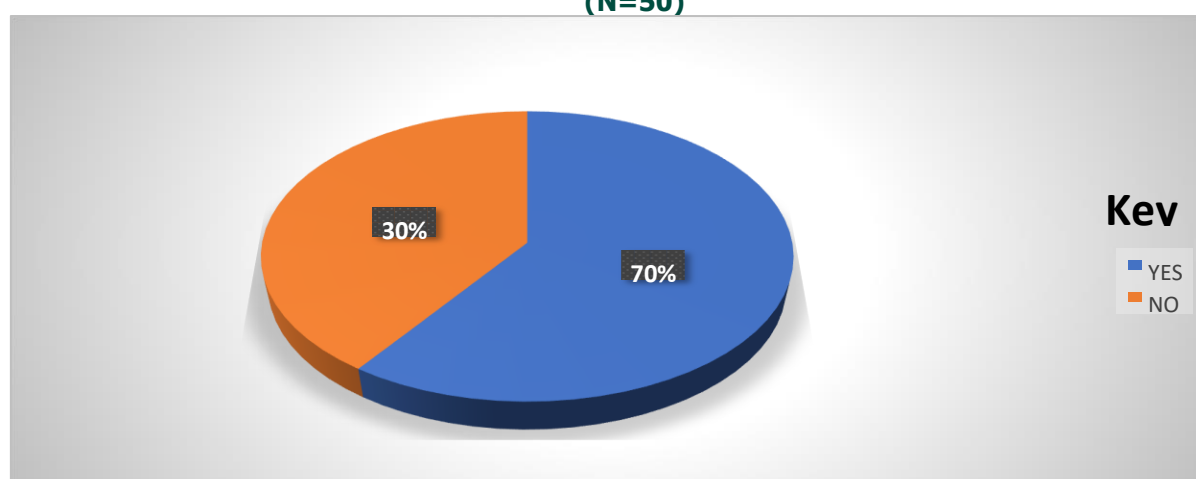


Figure 11, the majority 35(70%) of the respondents got side effects from taking IFAS, whereas the minority 15(30%) never got any.

Table 9: Shows the distribution of respondents based on the side effects they got while taking iron and folic acid supplementation. (N=35)

Response	Frequency(f)	Percentage (%)
Nausea	7	20
Dark stool	9	25.7
Bad smell	2	5.7
Constipation	6	17.1
More than one side effect	11	31.4
Total	35	100

Table 9, most (31.4%) respondents got more than one side effect, while the least (5.7%) got a bad smell.

Figure 12: Distribution of respondents according to the gestational age at which they started Antenatal care. (N=50)

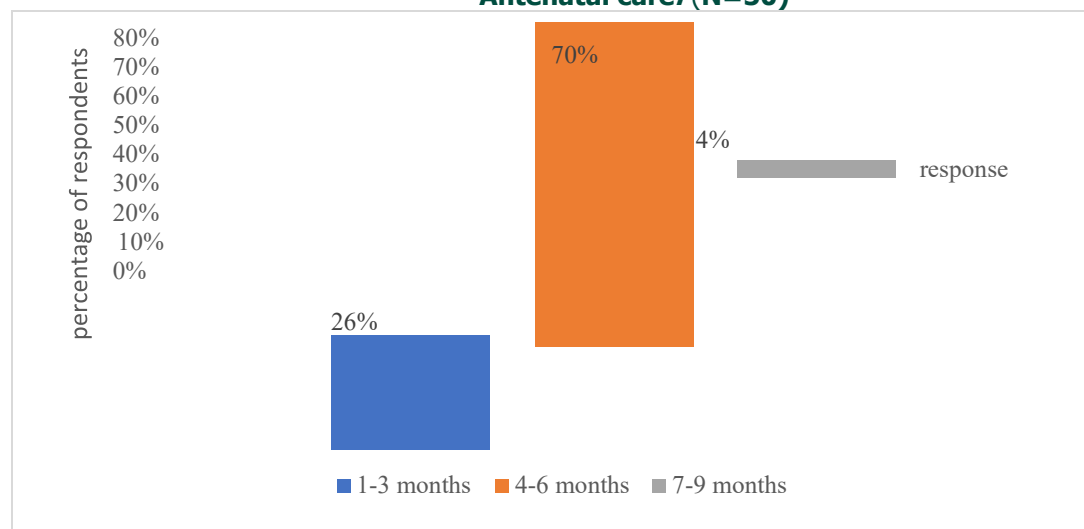


Figure 12, majority 35 (70%) respondents started antenatal care at gestational age of 4-6 months, whereas the minority 2(4%) started at 7-9 months.

Table 10: Distribution of respondents according to how far their homes were from the health facility. (N=50)

Response	Frequency(f)	Percentage (%)
500m	13	26
1km	15	30
2km	14	28
Above 2km	8	16
TOTAL	50	100

Table 10 most (30%) respondents had their homes 1km away from the health facility, while the least (16%) were above 2km.

DISCUSSION

Knowledge towards Iron and Folic acid supplementation among pregnant women

The current study findings reported that all (100%) of respondents had ever had information about IFAS, and the majority (96%) of the respondents obtained information from the health staff. This means that the majority were aware of IFAS. This supports research done by Mahmoud. N. F et al (2022) revealed that revealed majority 52.4% obtained information from the health team. The current study also established that the majority (90%) of the respondents knew that a pregnant mother should take one tablet per day. This is because the majority had gotten information and were being prescribed to. These findings agreed with a study by Atayo and Nansereko. H (2023) established that (83.3%) knew that folic acid is taken one tablet daily. The majority (70%) of respondents had knowledge of the importance of IFAS in preventing anaemia. This is because anaemia is the commonest

condition suffered by pregnant women. This disagreed with the study that was conducted by Ahmed A et al (2022) that 60% lacked adequate knowledge on the importance of iron and folic acid supplementation.

Attitudes towards iron and folic acid supplementation among pregnant women

The current study revealed that more than half (52%) believed that folic acid should not be taken throughout pregnancy. This is because it's hard to take medication every day. The current study established that the majority 62% respondents were willing to take IFAS. This means the majority were aware of the effects of not taking IFAS. This agreed with a study conducted by Yisak et al (2021) that established that 81.2% were interested to take Iron and Folic acid supplementation.

Practices towards iron and folic acid supplementation among pregnant women

The current study shows that the majority (74%) of the respondents were currently taking iron and folic acid supplementation. This implies that they give these drugs with a monthly return date, and because it's only a single

tablet taken. This agreed with the study that was conducted by Yisak and Ewunetei (2021), which revealed that 84.9% took IFAS during the current pregnancy. This, in turn, agreed with the study by Abdulmalek J. Lubna (2017), which established that out of 131 respondents, 95(73%) took folic acid during their current pregnancy. The study also revealed that more than half of the respondents (58.8%) reported reasons for nonadherence as fear of the side effects of medication. This is because they did not know the convenient time for taking the IFAS. This disagreed with a study conducted by Nimwesiga, Murezi & Taremwa (2021), where at least 35% gave reasons, such as fear of side effects of medication.

Conclusions

The level of knowledge towards iron and folic acid supplementation was high, evidenced by all respondents (100%) having heard about IFAS, 96% obtained information from the health staff, 90% knew one tablet per day. The Majority 70% of the respondents, knew that taking IFAS prevents anaemia. The attitudes of respondents towards iron and folic acid supplementation were fair, as evidenced by (68%) of the respondents agreeing that folic acid is important during pregnancy, 52% believed that folic acid should not be taken throughout pregnancy, and the majority (60%) of the respondents agreed that foods rich in folic acid can provide adequate folic acid required by the body. Despite the fact that their practices were good, the majority (74%) of the respondents were currently taking iron and folic acid supplementation.

Recommendations

The current study recommends continuous health education targeting women of reproductive age on the importance of iron and folic acid supplementation and possible complications of not taking IFAS, that is to say, through the media.

The study recommends that accurate information should be given to women on the appropriate time for starting and the duration recommended for taking iron and folic acid supplementation.

The management of Mudakori Health Centre III should conduct community outreaches to address knowledge gaps on IFAS.

Health workers should advise pregnant women on how to manage potential side effects, to take folic acid at night to prevent discomfort like nausea, hence enhancing the uptake, and also advise mothers to put reminders like an alarm or the closest person around them to stop issues of forgetfulness.

Acknowledgement

Thanks be to the almighty God for the gift of life and divine provision throughout the course. My sincere gratitude goes to the management of Mudakori Health Centre III, especially the antenatal department and the human resource manager of Tororo municipal council, who gladly accepted my research proposal and allowed me to conduct a study at

Mudakori Health Centre III. I acknowledge the role played by my family members, that is, siblings, uncles, and aunts, for the guidance. I extend sincere gratitude to the founder and management of Cornerstone Development Africa for the financial support throughout the course. I also extend my sincere thanks to the administration of Kampala School of Health Sciences, especially to my supervisor, Mr. Mubangizi Prosper, for the tireless effort he put in reviewing my work always, and to other tutors around for their continuous encouragement. I also acknowledge my dear friends who supported me financially and helped me with a laptop whenever I was in need.

List of abbreviations

ANC: Antenatal care

IFAS: Iron and folic acid supplementation

Source of funding

The study was not funded.

Conflict of interest

The author did not declare any conflict of interest.

Author contributions

Justine Nyafwono collected data and drafted the manuscript of the study

Prosper Mubangizi supervised all the study processes

Data availability

Data is available upon request.

Ethical approval

A letter of introduction was obtained from Kampala School of Health Sciences Research Committee, introducing the research and seeking permission to carry out the study with assurance of confidentiality.

Informed consent

The study commenced after the objectives of the study were well explained to the participants, and they consented to participate in the study.

Author biography

Justine Nyafwono is a student of Kampala School of Health Sciences

Prosper Mubangizi is a tutor at Kampala School of Health Sciences

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