

DETERMINANTS OF IMPLANT CONTRACEPTIVE UPTAKE AMONG WOMEN OF REPRODUCTIVE AGE IN KAYINDU VILLAGE, LUWEERO DISTRICT. A CROSS SECTIONAL STUDY.

Swaliki Kalule, Rosemary Nakitende, Derick Modi, Maliki Newane, Peter Kasagga, Patricia Pita
Soroti School of Comprehensive Nursing, Soroti-Uganda*

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ABSTRACT

Background

Health Management and Information System result from Kayindu H/C III HMIS show a significant decrease in uptake of implant contraceptives over the past two years with a drop rate from 21% to 18% in 2022 and 2023 respectively. Thus, this study aimed to assess the determinants of implant contraceptive uptake among women of reproductive age in Kayindu village, Luweero district.

Methodology

A community-based descriptive cross-sectional study design was used employing quantitative techniques, and a sample size of 40 respondents was determined using a systematic sampling method. Data was collected using semi-structured questionnaires, analyzed, and presented in the form of tables and figures.

Results

According to findings, the majority, 19/40(47.5%) of the respondents were aged 18-25 years, of whom more than half, 21/40(52.5%) were married and 16/40(40%) were single. 22/40(55%) had attained tertiary level of education and 7/40(17.5%) attained primary level. Implant contraceptive use was higher among married women (21/40, 52.5%) than single women (16/40, 40%). Socio-economically, Radios (90%) and being employed (82.5%) positively influenced implant contraceptive uptake; however, 95% of them believed that implant contraceptives could lead to anemia. There was a high uptake among those who received counseling from HCWs (55%). Additionally, (57.5%) received implant services from public health facilities with 70% of them reporting that there was a lack of implant contraceptives at health facilities and only 27.5% reported a lack of private rooms.

Conclusion

A vast number of factors deter implant contraceptive uptake including unemployment, unavailability of contraceptives at health facilities, and fear of possible side effects such as anemia.

Recommendation

Increase health education of women and train more HCWs on implant contraceptive insertion and removals. Funding for reproductive health services should be increased and improve supply chain management on implants to health facilities.

Keywords: *Implant Contraceptive, Reproductive age, Kayindu village, Luweero district*

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Corresponding author: *Swaliki Kalule**

Email: Kaluleswaliki23@gmail.com

Soroti School of Comprehensive Nursing, Soroti-Uganda

BACKGROUND OF THE STUDY

Implant contraceptives are small flexible subdermal rods that are inserted under the skin of the woman's upper arm. They act by releasing progesterone hormone that prevents pregnancy (Levine and Mleczko, 2020). They include; Implanon a single-rod sub-dermal hormonal contraceptive (containing 68 mg etonogestrel) licensed to be used for 3 years and Jadelle a set of two flexible cylindrical rods (each containing 75 mg of levonorgestrel) licensed to be used for 5 years (Ssebatta et al., 2021).

Globally in 2019, out of 1.9 billion women of reproductive age, 1.11 billion needed family planning of those, 842 million used modern contraceptives 270 had unmet need for modern contraceptives and only 153 million were implant contraceptive users (Kantorova et al., 2020).

The preference for contraceptive implants among women in the United States was found to have risen by 1.7% (Matos et al., 2021). In Ethiopia, the Ministry of Health planned to increase the percentage of available implant contraceptives to 33% but it was later revealed that only 8% of women used implant contraceptives hence the

ministry failed to achieve its target (Mekonnen and Wubneh, 2022)

In Sub-Saharan Africa, Boadu (2022) reported that the overall use of modern contraceptives among reproductive women was found to be 22.0% out of which only 26.5% used implants, Krogstad et al. (2020) stated that if 10% of women use implants in a year, 1.6 million unintended pregnancies, 530,000 abortions, and 5000 maternal deaths would occur.

In East African countries like Kenya, the prevalence of converting contraceptive users was 12.2% with 34.6% implant contraceptive users. (Akoth et al., 2021). In Tanzania, postpartum modern contraceptives were found to be 11.9% and only 6.5% of women used implant contraceptives. (Mahande et al., 2020)

In Uganda, family planning compliance for 2019/20 in 43 districts was still low at 38.4%, with Karamoja and west Nile region having the lowest number of implant users through districts of Kampala, Mukono, and Wakiso registered the highest number of implant users (Uganda Family Planning Atlas, 2020)

The government of Uganda targets to reduce the population growth rate from 3.2% to 2.4% by 2040, to achieve this, the Ministry of Health recommended increasing the prevalence and reducing the unmet need for modern contraceptives by 2% (Kamanga et al., 2023)

In Buganda central region, the number of new implant insertions in 2019 almost doubled those in 2018. In North Buganda the number increased by 27487 and for South Buganda, it increased by 27372 (Uganda family planning atlas, 2020). This study thus aimed to assess the determinants of implant contraceptive uptake among women of reproductive age in Kayindu village, Luweero district.

METHODOLOGY

Study Design and Rationale

A community-based descriptive cross-sectional study design was used in the study, which employed quantitative techniques. It was descriptive because it enabled respondents to accurately describe the characteristics of their feelings and experiences. It was cross-sectional because a good amount of data was collected in a short period. The quantitative technique was adopted because the study involved the use of mathematical and statistical methods to numerical data to understand the meaning and patterns of data.

Study Setting and Rationale

The study was conducted in Kayindu village, Luweero district. The village is situated approximately 58.7 km from Kampala-Uganda. Kayindu village is located in Kalagala Sub County. Luweero district is found in the central region located 65.4 km by road from Kampala capital city of Uganda. Nakasongola to the North, Kayunga, and Mukono to the East, Wakiso in the South,

and Nakaseke to the West border the district. It has a total population of about 614230 persons; it covers a total land area of 2216km² giving a population density of 277 persons/km². (2024 estimate) The people are of different ethnical backgrounds and is predominantly an agricultural-based district.

The study setting was selected because the village was proximal to the researcher's home area and the researcher understands very well the language of the natives hence this eased access and communication with natives thus giving an opportunity to comprehensively collect data for this study.

Study population

This study population of Kayindu village had 66 women of reproductive age. This group of people was preferred because the people were at risk of having unplanned pregnancies associated with complications like abortion teenage pregnancies, school dropouts, and sexually transmitted infections like HIV/AIDS.

Sample size determination

A sample size of 40 respondents was determined using Yamane's formula of sample size determination, which states;

$$n = \frac{N}{1 + N(e)^2}$$

Where;

Where; N=66 and e= 0.1 and n is the estimated size

$$n = \frac{N}{1 + Ne^2}$$

$$n = \frac{66}{1 + 66(0.1)^2}$$

$$n = 39.7590$$

$$n \sim 40$$

Sampling procedure

The systematic sampling method was used because the population was static. The interval level was determined by the formula $k^{th} = N/n$ where N was the total number of households and n was the required sample size

Therefore, n = 159 and n=40

$$k^{th} = 159/40 = 3.975$$

$$k^{th} = 4$$

$k^{th} = 4$ interval level

The first household person was fixed and 4 households were counted. The 4th household person was interviewed and the process was repeated for 8 people who were interviewed per day for 5 days until the 40 required respondents were achieved.

Inclusion criteria

- Residents of Kayindu village, Luweero district
- Women of reproductive age, 15-49 years
- Consent for the study

- For a homestead to be considered, it had to have a woman of reproductive age.

Exclusion criteria

- Despite meeting the above criteria, a character was not included in the sample size if any of the following were not met;
- Not of sound mind.

Definition of variables

The study had both independent and dependent variables.

Independent variables

- Demographic determinants of implant contraceptive uptake.
- Socioeconomic determinants of implant contraceptive uptake.
- Health facility-related determinants of implant contraceptive uptake.

Dependent variables

Uptake of implant contraceptives.

Research instruments

A questionnaire was developed and written in simple and clear English. It contained multiple-choice and close-ended questions. The questionnaire consisted of the following subsections:

Section A: Demographic determinants of implant contraceptive uptake

Section B: Socioeconomic determinants of implant contraceptive uptake.

Section C: Health-related determinants of implant contraceptive uptake.

The questionnaire was used because it gave enough time to the respondents, and ensured privacy. It was also easy to generate.

The questionnaire was pretested on respondents with similar characteristics residing in Kalagala village before data collection. This was done to eliminate vague, ambiguous questions and to check for the validity and reliability of the data collected.

Data Collection Procedure

A research proposal to the academic registrar of Soroti School of Comprehensive Nursing and an introductory letter were submitted, which were presented, to the LC 1 of Kayindu village for permission and clearance to carry out the research in the area.

After being permitted, the purpose of the study was explained to the respondents; they were reassured of confidentiality, willingly obtained their consent, and

administered 8 questionnaires daily for 5 days. Any question that seemed to be confusing to the respondents was clarified and this was done for all respondents at each homestead. After filling, the questionnaires from the respondents were checked for completeness then thanked the respondent for participating in the study.

The questionnaires were obtained from homesteads based on the interval and list obtained from the village chairperson.

Data management

After data collection, the filled questionnaires were kept in an envelope under strict supervision until all 40 respondents were done. After filling out all the required questionnaires, data was tallied into frequencies and then converted into percentages after it was entered into the computer ready for analysis. The data folder was then given a name known by the researcher, shared on a personal flash, and a computer password was put in for data protection to avoid alterations.

Data Analysis

After data entry into the computer, data was assembled, edited, and coded. Data was then analyzed with the help of computer software called Microsoft Excel program and Statistical Package for Social Science (SPSS) program version 16 to develop tables, figures, and pie charts from where meaningful data was entered directly and presented in statistical drawings that were 5 tables and 5 figures (pie charts and bar graphs)

Ethical considerations

The following ethical considerations were put into account to prevent as much harm as possible be it emotional, physical, or psychological during the study:

The research committee of Soroti School of Comprehensive Nursing approved the research topic and proposal.

A letter of introduction was given by the school to the researcher to be presented to the Kayindu LC1 chairperson for permission to conduct the study.

The village chairperson in writing granted permission to the researcher to conduct a study in their area.

Informed consent was obtained from all participants by first explaining the purpose of the study to them, the benefits and risks

Maximum confidentiality and privacy of residents were ensured by allowing the respondents to withhold their names and instead use codes.

Respondents who did not wish to participate in the study were allowed to freely withdraw.

No incentives of money /gifts were given to the participants for participating in the research study.

RESULTS

Findings on demographic determinants of implant contraceptive uptake.

Table 1 shows demographic determinants of implant contraceptive uptake among women of reproductive age, (n=40).

Variables		Frequency (f)	Percentages (%)
Age (years)	18-25	19	47.5
	26-33	12	30
	34-41	5	12.5
	42-49	4	10
	Total	40	100
Marital status	Married	21	52.5
	Single	19	47.5
	Total	40	100
Level of education	Tertiary	22	55
	Secondary	11	27.5
	Primary	7	17.5
	Total	40	100
Parity	≥ 5	20	50
	3-4	10	25
	1-2	8	20
	None	2	5
	Total	40	100
Place of residence	Proximal to the trading Centre	25	62.5
	Far away from the trading Centre	15	37.5
	Total	40	100

Source: Primary data (2024)

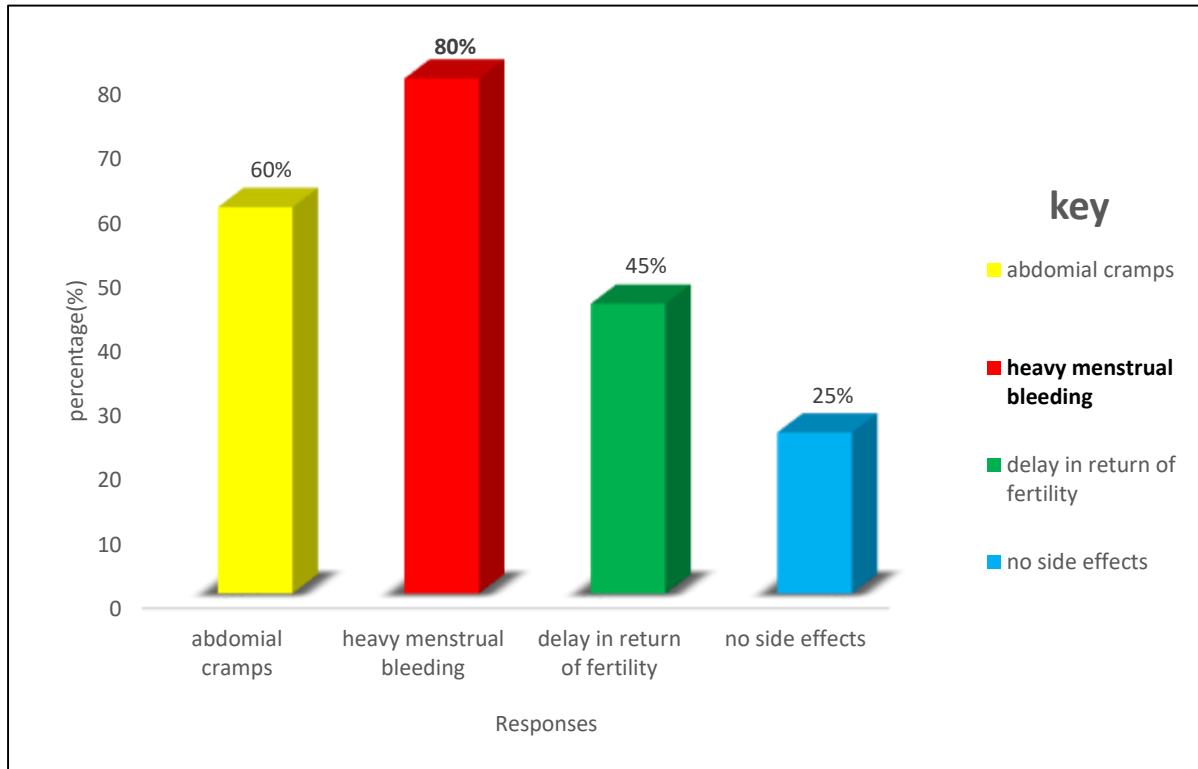
From Table 1, the majority 19/40(47.5%) of the respondents were aged 18-25 years and a few 4/40(10%) were aged 42-49 years. More than half 21/40(52.5%) of the respondents were married and a few 16/40(40%) were single.

Most of the respondents, 22/40(55%) attended tertiary level however 7/40(17.5%) attained primary level. Half 20/40(50%) of the respondents had more than 5 live children and only 2/40(5%) had no children. The study

found that 25/40(62.5%) of the respondents were staying proximal to the trading Centre and only 15/40(37.5%) were staying far away from the trading Centre.

Findings on side effects commonly experienced by implant contraceptive users (Had multiple responses)

Figure 1: A bar graph shows side effects commonly experienced by implant contraceptive users. (Multiple responses)



Source: Primary data (2024)

From Figure 1, the majority 80% of women commonly experienced heavy menstrual bleeding and a quarter of 25% of the respondents reported not having experienced any side effects while using implant contraceptives. Socioeconomic determinants of implant contraceptive uptake among women of reproductive age at Kayindu Village, Luweero district.

Findings on Source of information on implant contraceptives

Table 1: Source of information on implant contraceptives (Multiple responses)

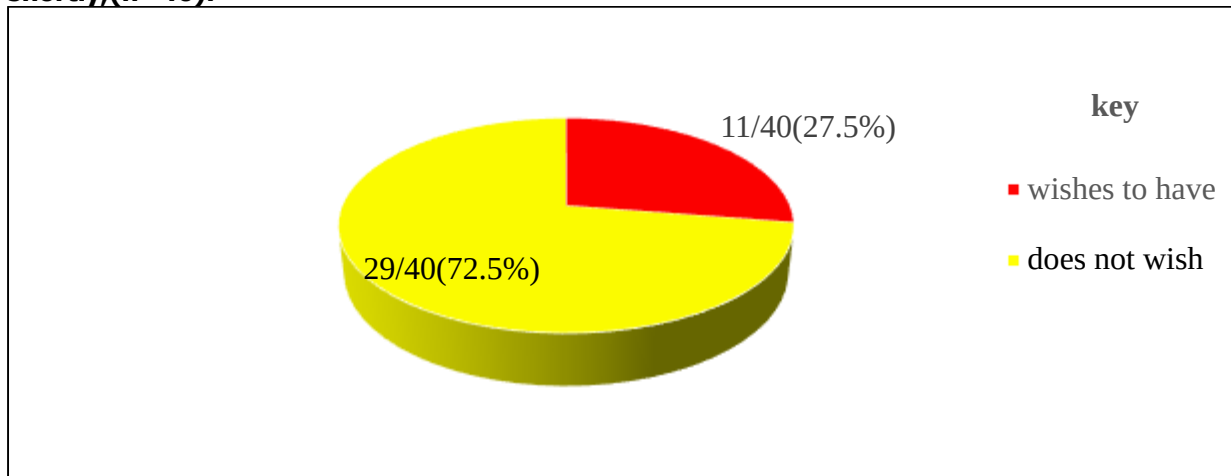
Variables	Frequency(f)	Percentages (%)
Source of information on implant contraceptives		
Mass media (Radio)	36	90
Friends	25	62.5
Internet	16	40
Health facility	10	25

Source: Primary data (2024)

From Table 2, the majority 90.0% received information from mass media (radio, television) and friends (62.5%). However, a few 25% got it from healthcare facilities.

Findings on whether a partner wishes to have more children soon.

Figure 2: A pie chart shows whether a partner wishes to have more children shortly, (n=40).

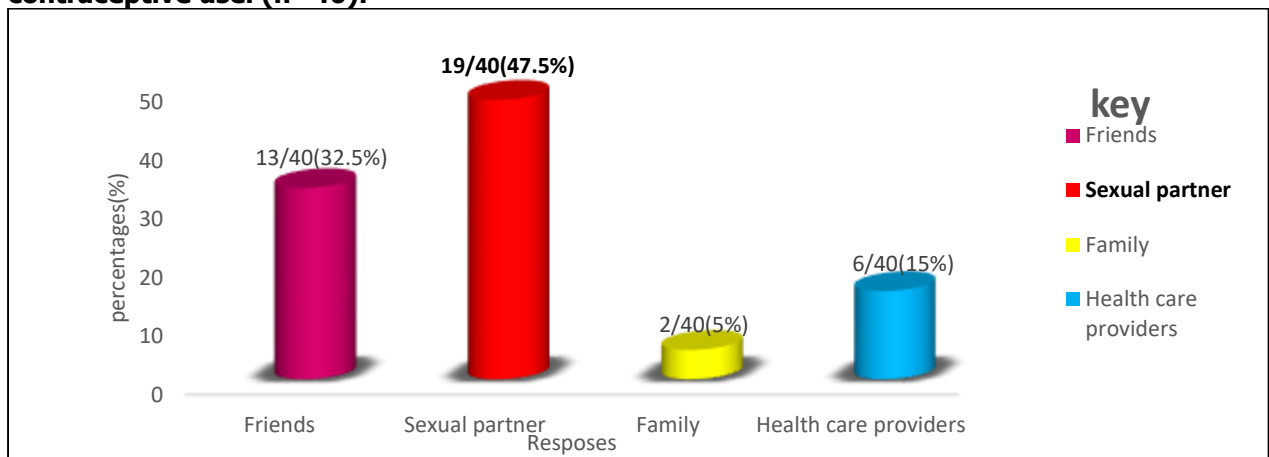


Source: Primary data (2024)

From Figure 2, nearly three-quarters 29/40(72.5%) of women reported that their partners did not wish to have more children soon and nearly a quarter 11/40(27.5%) wished to have children.

Findings showing individuals who discussed with respondents about implant contraceptive use

Figure 3: A graph showing individuals who discussed with respondents about implant contraceptive use. (n=40).



Source: Primary data (2024)

From Figure 3, the majority 19/40(47.5%) of the respondents discussed it with their friends, and a few 2/40(5%) discussed family implant contraceptive use.

Findings on women's occupation, average monthly income, myths and misconceptions about implant contraceptives

Table 2: Shows women's occupation, average monthly income, myths and misconceptions about implant contraceptives

Variables	Frequency(f)	Percentages (%)
Occupation		
Self-employed	18	45
Civil servant	12	30
Unemployed	7	17.5
Student	3	7.5
Total	40	100
Average monthly income (shillings)		
Between 100001 and 500000	20	50
Between 50001 and 100000	16	40
Below 50000	4	10
Total	40	100
Myths and misconceptions about implant contraceptives. (had multiple responses)		
This can lead to anemia	38	95
Can move freely around body and get lost on the day of removal	30	75
Can cause infertility.	16	40
Causes hypertension.	10	25

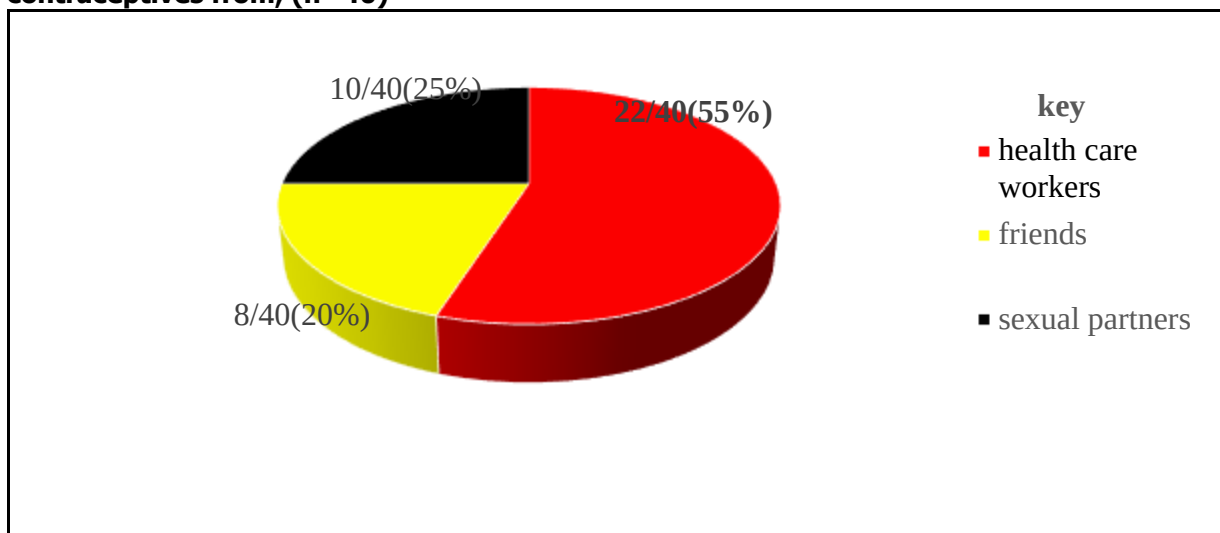
Source: Primary data (2024)

From table 3, nearly 18/40(45%) were self-employed and only 7/40(17.5%) were unemployed. Half, 20/40(50%) of the respondents were earning an average monthly salary between 100001 and 500000 shillings however, 4/40(10%) were earning below 50000 shillings. The majority, 95% believed that implant contraceptives can lead to anemia, and a few, 25% believed that they cause hypertension.

Health facility-related determinants of implant contraceptive uptake among women of reproductive age at Kayindu village, Luweero district.

Findings showing where women received counseling on implant contraceptives

Figure 4: A pie chart showing where women received counseling on implant contraceptives from, (n=40)



Source: Primary data (2024)

From Figure 4, the majority 22/40(55%) and a few 8/40(20%) of the respondents received counseling on implant contraceptive services from healthcare workers and friends respectively.

Findings on the estimated distance to the nearby health facility and restrictions imposed on implant contraceptive users by health workers.

Table 3: Shows the estimated distance from home to the nearby health facility and restrictions imposed on implant contraceptive users by health workers (n=40).

Variables	Frequency (f)	Percentages (%)
Estimated distance from home to the nearby Health Centre.		
<2 km	25	62.5
2-4 km	8	20
≥5 km	7	17.5
Total	40	100
Restrictions imposed on implant contraceptive users by health workers		
Above 20 years	22	55
Have at least 3 children	13	32.5
Have at least 2 children	3	7.5
Have at least 1 child	2	5
Total	40	100

Source: Primary data (2024)

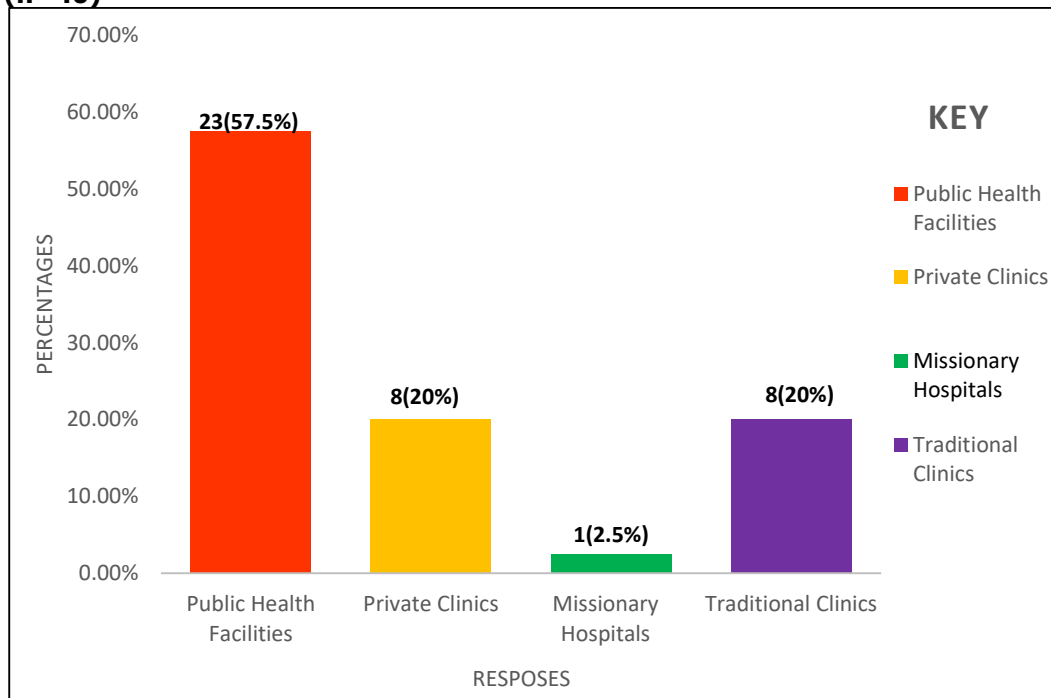
From Table 4, more than half, 25/40(62.5%), and only a few 7/40(17.5%) stayed less than 2km and more than 5 km respectively from home to the nearby.

More than half, 22/40(55%) of women reported that HCWs required them to be aged above 20 years to use

implant contraceptives, and very few, 2/40(5%) required at least 1 child.

Findings showing places where women got implant contraceptive services.

Figure 5: A bar graph showing places where women got implant contraceptive services from (n=40)



Source: Primary data (2024)

From Figure 5, the majority 23/40(57.5%) and very few 1/40(2.5%) of the respondents received services from public health facilities and missionary hospitals respectively.

Findings on limitations of implant contraceptive service delivery.

Table 4 shows the limitations of implant contraceptive service delivery. (Multiple responses)

Variables	Frequency(f)	Percentages (%)
Limitations of implant contraceptive service delivery		
Lack of implant contraceptives at health facilities	28	70
Lack of skilled healthcare workers	26	65
Lack of necessary equipment	14	35
No private rooms	11	27.5

Source: Primary data (2024)

From Table 5, 70% of the respondents reported that implant contraceptive service delivery was mainly limited by a lack of implant contraceptives at health facilities and only 27.5% reported a lack of private rooms.

DISCUSSION

The study revealed that the majority 19/40(47.5%) of the respondents were aged 18-25 years, this could be because that's the best reproductive age group where women are more fertile and sexually active and therefore need to use implant contraceptives to prevent unwanted pregnancies. The findings were found to be consistent with those in the studies done by Hossain et al. (2018) and Matos et al. (2021) where implant contraceptive uptake was higher in women aged 20-24 years and those aged 18-24 years respectively.

Implant contraceptive use was higher in married women (21/40, 52.5%) than in single (16/40, 40%). This could be because married women are more often exposed to sexual interactions with their partners than unmarried ones hence need to utilize implant contraceptives to prevent unwanted pregnancies. Similarly, data obtained in the Uganda Demographic Health Survey (2022) revealed that implant contraceptive use was higher in married women than in sexually active unmarried women.

The study findings revealed that half of the respondents had more than five live children. This could be because women who had more than five live children did not wish to give birth to more children hence; they ended up using implant contraceptives to protect against pregnancy. This was in agreement with a study done by Mekonnen and Wubneh (2022) who discovered that implant contraceptive use was more in women with five or more children than in those with very few children.

From the study, the majority of 25/40(62.5%) respondents were staying proximal to the trading Centre. This could be because in the trading Centers, there is quite a good number of health facilities and access to them is easier than in far areas of the village. Hence, those who were living proximal to the trading Centre had more access to healthcare facilities. The findings correlated with a study done by Dawood et al. (2015) which showed that women in urban areas had more chance of making use of implant contraceptive services from health facilities compared to those in rural areas.

In the study, 80% of the respondents reported to have experienced heavy menstrual bleeding while using implant contraceptives. This could be because of the increasing progesterone hormone levels in the body,

which increases blood flow to the uterus and causes excessive relaxation of vessels of the endometrium causing poor muscle tone and less constriction thus altering the menstrual cycle. This study was in agreement with studies conducted by Mulekhwa and Nakasolo (2022) and Morey et al (2021) who reported that the majority of the women claimed that implant contraceptive use increases menstrual bleeding.

From the study, 90.0% of the respondents reported having received information on implant contraceptives from mass media (radio, and television). This showed that most women in Kayindu village spend most of their time listening to radios hence use information from radios to determine use. The findings contradicted a study done by Ahmed et al. (2017) and Tigabu et al. (2018) who reported that the Internet and health centers were the major sources of knowledge.

The study findings found that 19/40(47.5%) of the respondents discussed implant contraceptive use with their sexual partners on use. This could be because most women were married hence they involved their male partners in decision-making giving them courage and reassurance to use implant contraceptives This study concurred with a study done by Abera et al. (2020) which showed majority of respondents had discussions with their husbands on implant contraceptive use.

In the study findings, the majority 29/40(72.5%) of women reported that their partners didn't wish to have more children shortly hence opting for implant contraceptives which are reliable and able to protect against pregnancy for several years usually 3 to 5 years. This study corresponded with a study done by Mekonnen and Wubneh (2022) which revealed that women whose husbands desired more children were less likely to use implants than those who did not wish to have children.

A few 7/40(17.5%) were unemployed this is often associated with financial constraints which limit access to implant contraceptive services thus making individuals prioritize food and shelter over health care. Similarly, a study done by Hossain et al. (2018) showed that the working status of an individual influences the use of contraceptives often more in employed women than those who are unemployed.

The study results discovered that 20/40(50%) of the respondents were earning an average monthly salary between 100001 and 500000 shillings, this could be

because of increased earning potential which enables affordability and improve access to health care services. This study collided with a study by Boadu (2022) where the use of implant contraceptives among women about the wealth index was found to be high in women of high economic status.

From the study, the majority 95% believed that implant contraceptives can lead to anemia, this is associated with increasing levels of progesterone which leads to less constriction of vessels of the uterus thus altering the menstrual cycle and leading to heavy menstrual bleeding. Increased menstrual bleeding becomes a concern, thus making them assume it to be a risk factor leading to anemia thus limiting implant use. This study coincided with a study done by Meskele and Mekonnen (2014) where most women perceived that implant contraceptives can lead to anemia.

The majority 22/40(55%) of the respondents received counseling on implant contraceptive services from healthcare workers. This could be because healthcare providers can clarify myths and misconceptions about implant contraceptives thus alleviating anxiety and concerns. This study agreed with a study done by Ojo et al. (2020) which reported that women counseled by HCWs were more likely to use implants than those who did not receive them.

From the study, 25/40(62.5%) of the respondents were staying 2km away from the nearby health Centre. This could be because of increased available transportation options, which ease access to implant contraceptive services from the health facility. This was consistent with a study conducted by Kraft et al. (2022) found that having access to the health facility within a short period was associated with increased implant contraceptive use among women.

The study findings revealed that 22/40(55%) of the respondents reported that HCWs required them to be aged above 20 years to use implant contraceptives. This could be because women above 20 years have greater awareness and can make independent decisions concerning their reproductive health. This study was in line with a study done by Rouncivell et al. (2021) which revealed that Kenyan HCWs required implant clients to be at least 20 years of age.

In the study, very few, 1/40(2.5%) women received implant contraceptive services from missionary hospitals. This could be because missionary hospitals withhold contraceptive services due to religious or cultural beliefs thus limiting implant service availability and delivery. Similarly, a study done by Mulekhwa et al. (2022) where a lower number of respondents received contraceptive services from private health facilities than in government facilities.

Implant contraceptive service delivery was mainly limited by a lack of implant contraceptives at health facility 28/40(70%). This could be due to stockouts or unavailability resulting in delays in initiation and discontinuations due to lack of replacements. This study supported a study done a study by Thanel et al. (2018)

which reported lack of service readiness was due to a lack of implant commodities.

CONCLUSION

The determinants of implant contraceptive uptake among women of reproductive age in Kayindu village, Luweero district included the following;

Socio-demographically, there was an association between the ages of 18-25 years, being married, having more than 5 live children, staying proximal to the trading Centre, having experienced heavy menstrual bleeding, and uptake of the implant of implant contraceptives.

On socioeconomic determinants; mass media (radio, television), support from sexual partners who did not wish to have more children shortly, being unemployed, earning an average monthly salary between 100001 and 500000 shillings, belief that implant contraceptives can lead to anemia influence the uptake of implant contraceptives.

On hospital-related determinants; the majority 22/40(55%) of the respondents received counselling on implant contraceptive services from healthcare workers. Most individuals 25/40(62.5%) were staying proximal to the nearby health Centre from the Health Centre. More than half 22/40(55%) of women reported that HCWs required them to be aged above 20 years to use implant contraceptives very few 1/40(2.5%) of them received the services from missionary hospitals.

RECOMMENDATION

The Ministry of Health should develop and implement policies promoting reproductive health such as emphasizing radio talks and television shows to sensitize community members on where and when to seek implant services.

The government of Uganda should put more emphasis on increasing funding for reproductive health services by improving supply chain management and logistics on implants to health facilities to ensure access by women at all times.

Healthcare providers should develop standardized counseling protocols to address misconceptions and improve informed decision-making. As well as advocating for increased resource allocation

In nursing education, there is a need for the development of continuous standardized training protocols for implant contraceptive insertions and removal.

Community leaders collaborate with healthcare workers to mobilize and encourage male partner involvement in reproductive health services such as family planning discussions.

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Not forget my roommates and my friends for the words of wisdom, courage, and support, which have made me who I am in this field of study.

Finally, those to acknowledge so many but all in all I say thank you.

LIST OF ABBREVIATIONS

CPR: Contraceptive Prevalence Rate
DHS: Demographic Health Survey
DRC: Democratic Republic of Congo
FP: Family Planning
HCWs: Health Care Workers
HMIS: Health Management Information System
Km2: Square Kilometers
LARC: Long-Acting Reversible Contraceptives
PHC: Public Health Clinic
SARC: Short Acting Reversible Contraceptives
SDGs: Sustainable Development Goals
UN: United Nations
UNMEB: Uganda Nurses and Midwifery Education Board
WHO: World Health Organization

SOURCE OF FUNDING

The study was not funded.

CONFLICT OF INTEREST

The author declares no conflict of interest.

AUTHOR CONTRIBUTIONS

SK- Study developer
PP-Pretested research tools
PK-Data collector
MN-Data entry and cleaning
DM-Data analyzer
RN- Supervised the Study

DATA AVAILABILITY

Data is available upon request.

INFORMED CONSENT

There was full disclosure; and full comprehension and respondents voluntarily consented to participate in the study.

AUTHOR BIOGRAPHY

Swaliki Kalule is a student at Soroti School of Comprehensive Nursing pursuing a Diploma in Comprehensive Nursing.

Derrick Modi is a Public Health Officer, Faculty of Public Health-Lira University School of Public Health.

Peter Kasagga, Maliki Newane, and Patricia Pita are students pursuing a Diploma in Comprehensive Nursing at Soroti School of Comprehensive Nursing.

Rosemary Nakitende is a tutor at Soroti School of Comprehensive Nursing and a research supervisor.

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