

FACTORS INFLUENCING UTILIZATION OF INTRAUTERINE CONTRACEPTIVE DEVICE AMONG WOMEN OF REPRODUCTIVE AGE AT ENTEBBE REGIONAL REFERRAL HOSPITAL WAKISO DISTRICT. A CROSS-SECTIONAL STUDY.

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Page | 1

ABSTRACT

Background

Intrauterine devices are one of the long-acting, safe, and effective methods of contraception in women of reproductive age across the world with a safety percentage of 89 %. This study aimed to assess the factors influencing the utilization of intrauterine contraceptive device contraception among women of reproductive age at Entebbe Regional Referral Hospital, Entebbe municipality Wakiso district.

Methodology

A descriptive-cross-sectional design was employed with quantitative methods of data collection. Self-administered questionnaires were used to collect data from a sample size of 30 respondents through a simple random sampling method, and data presented in pie charts, tables, and figures.

Results

Most, 13(43.3%) of the respondents that utilized IUDs were between 26 and 30 years of age, 11(36.7%) had a primary level of education, 12(40%) had two children, 24(80%) had only 1 sexual partner and 18(60%) had a low family level of income. Concerning health facility-related factors; more than half 17(56.7%) took four hours and more waiting for family planning services, 16(53.3%) mentioned that healthcare providers do not recommend the use of IUDs, which negatively affected its uptake, 18(60%) do not receive health education about the use of IUDs at the facility. Additionally, 24(80%) of the respondents mentioned that sometimes intrauterine devices were not available at the facility, suggesting inconsistent supply that affects its uptake.

Conclusion

The Individual factors were; age, level of education, number of children, weight, number of sexual partners, and family level of income. The health facility-related factors were; waiting time, health care provider's recommendations, health education, availability of health facilities in the community, and availability of intrauterine devices.

Recommendation

Healthcare workers should implement strategies to minimize waiting times for contraceptive services, including intra-uterine device insertion and strengthen health education programs within the hospital to raise awareness about the benefits and availability of intra-uterine devices.

Keywords: Intrauterine Contraceptive Device, Reproductive Age, Entebbe Regional Referral Hospital

Submitted: 2024-12-25 **Accepted:** 2025-01-28 **Published:** 2025-02-27

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BACKGROUND OF THE STUDY

Globally, over 215 million women of childbearing age are in union and use intrauterine contraceptive devices this constitutes an uptake rate of 14.3%. Among these, almost 200 million still do not have access to contraception, and 64 million still use conventional methods of family planning, the majority of the world's poorest men and women still have less control over when and how many children to have (Prol, Klein, Rennie & Andelija 2024). In the United States, about 89 % of women were using contraceptive methods. However, among these, only 1.5% of women in the USA used

Intrauterine devices. With this low intrauterine device use nationwide, likely, the unintended pregnancy rate in the USA, 50 per 1000 women aged 15–44 per year would increase substantially, and there is very recent evidence that such increases may have begun in response to these decreases in intrauterine device use (Espey & Ogburn, 2021).

In Africa, intrauterine devices are used by less than 2% of women of childbearing age in all countries in the region, except Guinea-Bissau 4% and Kenya 5%. Such rates are substantially lower than those reported in some other parts of the world. Some of the barriers

contributing to this low rate include transport attributed to distance; as they live in remote areas, lack of knowledge, and poor attitudes related to cultural myths (Nasri, 2020). In South Africa, intrauterine device use is low. The low rate is mainly due to a lack of suitable facilities and adequately trained personnel. Almost half, 46% of the women who use an intrauterine device access it through private sector health services, which only serve 14% of all contraceptive users (Mhlanga, Balkus, Singh, Chappell, Kamira, Harkoo, Szydlo, Mukaka, Piper, & Hillier 2019).

In East Africa, intrauterine device utilization is at a rate of about 20.7% which is still a low rate compared to the SDG target of 2030, 75% (Tessema, Teshale, Tesema, Yeshaw, & Worku, 2021). In Kenya, while the contraceptive prevalence rate has reached 58%, only 1.1% of all women are calculated to be using the intrauterine device, according to the Kenya National Bureau of Statistics of 2015. Evidence from this region suggests that there is a large discrepancy between the proportion of women who want to limit the number of births and the proportion using long-acting and permanent methods such as the intrauterine device, implying a large unmet need (Mbuthia, Okumbe, Monda, & Ng'ang'a, 2017).

Uganda has one of the highest population growth rates in the world 3.3% per year with a total fertility rate of 5.8 children per woman, which is also one of the highest in the world. The rate of contraceptive usage in Uganda is still low and about 42.6% of recent, births are unintended. Among all contraceptive usage, the intrauterine device makes up the smallest proportion of the current method mix at 3.8% compared with 6.6% for pills, 8.3% for sterilization 10.1% for male condoms, 15.3% for implants, 51.3% for injectable (Twesigye, Buyungo, Kaula, & Buwembo, 2016). At Entebbe Regional Referral Hospital, Entebbe municipality Wakiso district, only 1 in 10 women who attend family planning clinic utilize an Intrauterine device. This study therefore aimed to assess the factors influencing utilization of intrauterine contraceptive device contraception among women of reproductive age at Entebbe Regional Referral Hospital, Entebbe municipality Wakiso district.

METHODOLOGY

Study design and rationale

The study was a descriptive cross-sectional study design. This design was chosen because it allows the collection and analysis of data within a short period. A quantitative approach to data collection was used because the questionnaire was used to collect quantitative or numerical data.

Study setting and rationale

The study was conducted at Entebbe Regional Referral Hospital, Entebbe municipality Wakiso district. The study setting was selected because of the poor utilization of intrauterine devices among women who seek family planning services at a family planning clinic. The setting also has an adequate number of respondents. The hospital is located in the central business district of the town of Entebbe, in Wakiso District, approximately 44 kilometers (27 mi), by road, southwest of Mulago National Referral Hospital, the largest hospital in the country, located in Kampala, Uganda's capital and largest city. Entebbe General Hospital is a public hospital funded by the Uganda Ministry of Health. Originally built by the British colonialists in the 20th century as Entebbe Grade B Hospital, the facility was closed temporarily in December 2013. Between December 2013 and May 2016, the hospital was rebuilt and expanded from 100 to 200 beds for US\$7 million (about UGX: 23.2 billion), donated by the World Bank. The new facility has a private fee-for-service wing and a public, free-service wing. Other services include pediatrics, radiology, laboratory, maternity, immunization, general surgery, internal medicine, orthopedics, and operating rooms. Patients served come from Wakiso District, Mpigi District, Entebbe Town, and the neighboring islands in Lake Victoria.

Study population

The study population was women of reproductive age at Entebbe Regional Referral Hospital, Entebbe municipality Wakiso district.

Sample size determination

The sample size was determined according to Roscoe's (1975) set guidelines, which suggested that a sample size of 30 and less than 500 was appropriate for most behavioral studies. This study therefore took a sample size of 30 respondents that was manageable because of limited time and resources for data collection.

Sampling procedure

The study used a simple random sampling technique. This technique was chosen for this study because it ensured that the sample was representative of the study population as well as reducing bias in the sample. To obtain the participants, the researcher made 60 pieces of similar size and 30 papers were written on *Q* and the rest on *P*. Eligible women picked a single paper at random on each day of data collection. Those who picked papers with the word *Q* were enrolled in the study.

Inclusion and exclusion criteria

The study included only women of reproductive age at Entebbe Regional Referral Hospital, Entebbe

municipality Wakiso district who voluntarily consented to participate. Those who declined to consent and the very ill were excluded.

Definition of variables Independent variables

The independent variables were individual and social-cultural factors influencing the utilization of intrauterine contraceptive device contraception.

Dependent variable

The dependent variable was the utilization of intrauterine contraceptive devices.

Research instrument

Data was collected using semi-structured questionnaires. They were written in English and contained closed-ended questions related to the study objectives. However, illiterate respondents were also considered as the questions were verbally read to them as the researcher filled in their views. The questionnaire consisted of 2 sections which included a section on individual and health facility factors.

Data collection procedures

Data collection started after an introductory letter authorizing the researcher was presented to the director of Entebbe Regional Referral Hospital. The literate sampled respondents conversant in English were administered the questionnaire to fill in independently, while illiterate respondents were verbally assisted by the researcher. Data was collected from 6 respondents per day and this procedure took five (5) days to cover 30 respondents.

Data management

The filled questionnaires were retrieved, counted, checked for completeness, and edited after every data collection day to ensure that they were all returned, coded, and kept in a safe place as a backup. Raw data was locked in the cupboard for security purposes.

Data analysis

Data from the questionnaires were manually tallied using a pen and paper, coded, and analyzed using a computer package called Microsoft Excel 2016 to attain a code sheet.

Analyzed data from the code sheet was then used to construct tables, figures, and statistical texts depicting respondents' responses in frequencies and percentages.

Ethical considerations

After proposal approval, the researcher obtained an introductory letter from the Mildmay Uganda School of Nursing and Midwifery Research and Ethics Committee which was presented to the administration of Entebbe Regional Referral Hospital, Entebbe municipality Wakiso district showing the authenticity of the study. Consent was sought from the respondents before enrolling them to participate. Only questions that did not infringe on the rights and privacy of respondents were asked. They were assured of the confidentiality of their information and anonymity of their identity by using only serial numbers and not names on the questionnaire.

RESULTS

Individual factors influencing utilization of intrauterine contraceptive devices among women of reproductive age

Table 1: Individual demographic factors influencing utilization of intrauterine contraceptive devices among women of reproductive age, n=30

Variable	Category	Frequency (f)	Percentage (%)
Age (years)	18-25	11	36.7
	26-30	13	43.3
	31-35	3	10
	36-40	3	10
Level of education	Nonformal	9	30
	Primary	11	36.7
	Secondary	6	20
	Tertiary	4	13.3
Number of children	None	2	6.7
	One	9	30
	Two	12	40
	Three and more	7	23.3

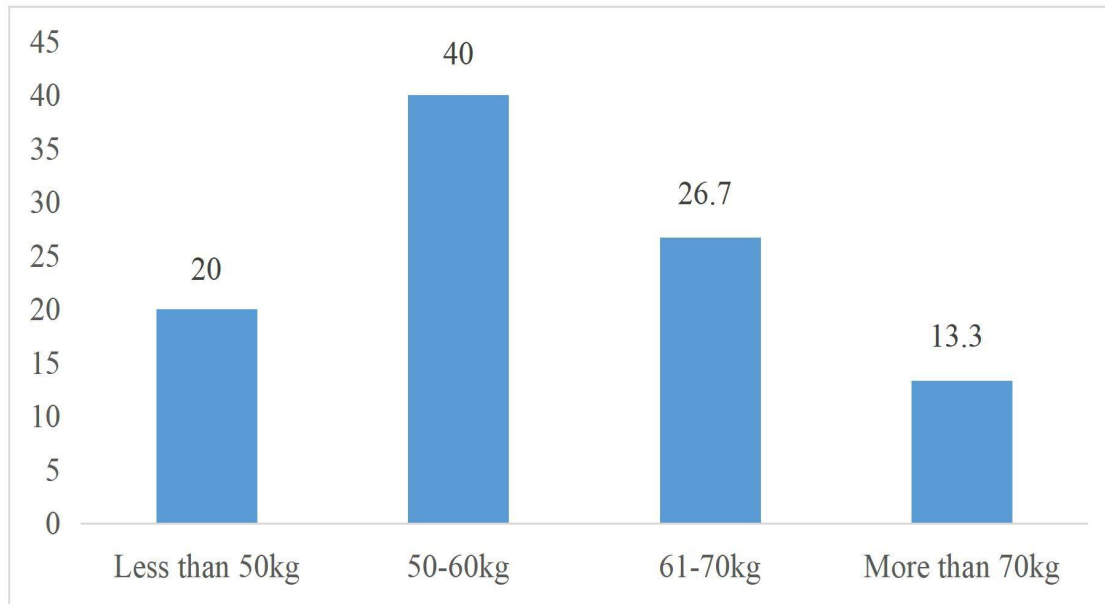
Source: Primary data (2024)

Table 1 shows that 13(43.3%) of the respondents were between 26 and 30 years of age while the least 3(10%) were 31 to 35 and 36 to 40 years respectively. Regarding the level of education, most 11(36.7%) of the

respondents had a primary level whereas the least 4(13.3%) had a tertiary level. Concerning the number of children, 12(40%) of the respondents had two children while the least 2(6.7%) had no child.

Figure 1: Weight of the respondents, n=30

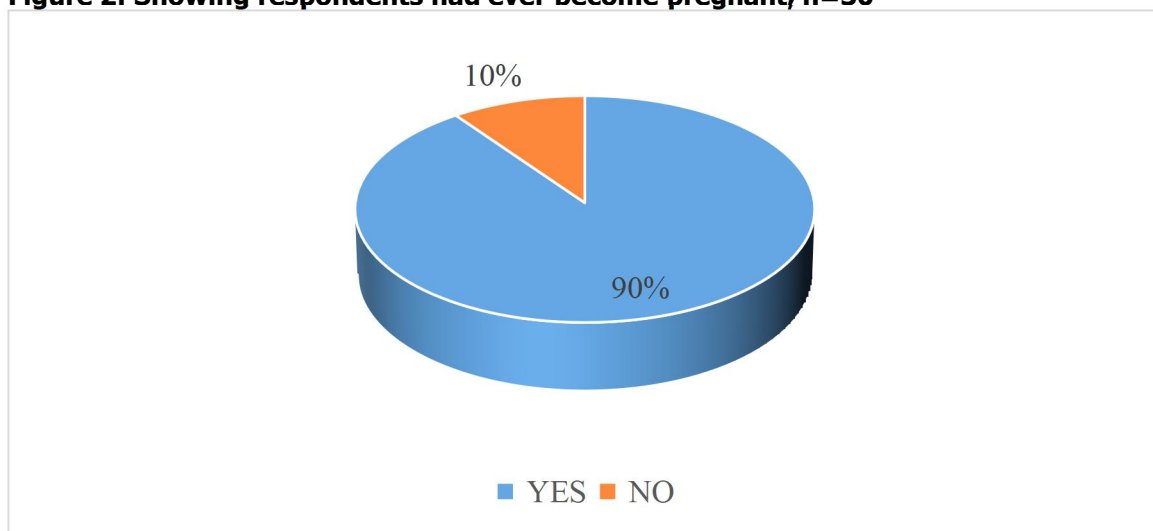
Page | 4



Source: Primary data (2024)

Figure 1 shows that most, 12(40%) of the respondents mentioned that they had between 50 and 60 kilograms while the least, 4(13.3%) mentioned that they had more than 70kg.

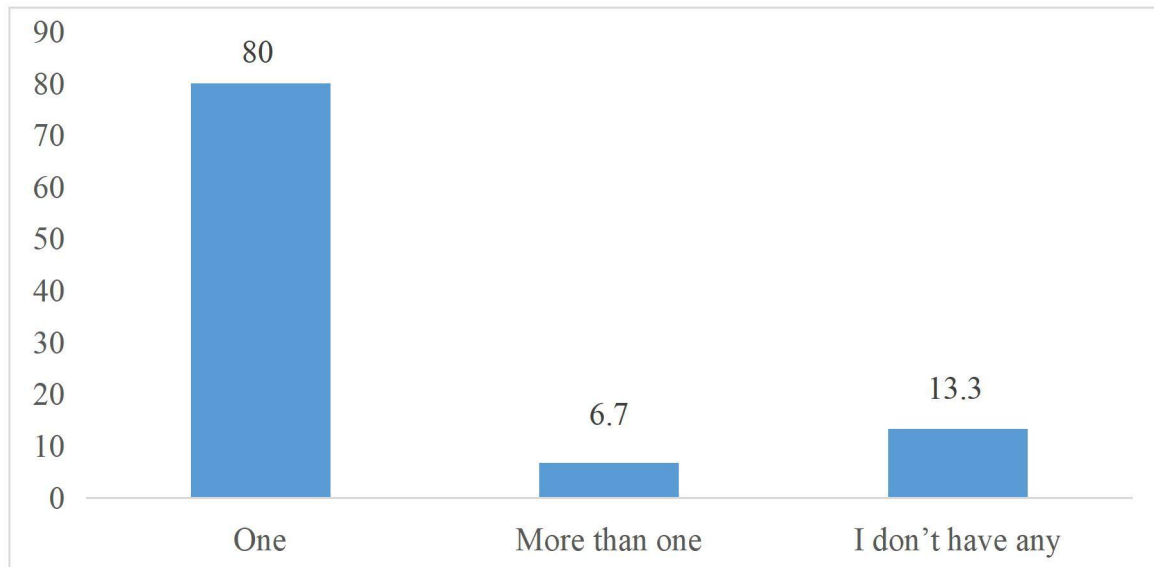
Figure 2: Showing respondents had ever become pregnant, n=30



Source: Primary data (2024)

Figure 2 shows that the majority 27(90%) of the respondents mentioned that they had ever become pregnant while the minority 3(10%) mentioned that they had never.

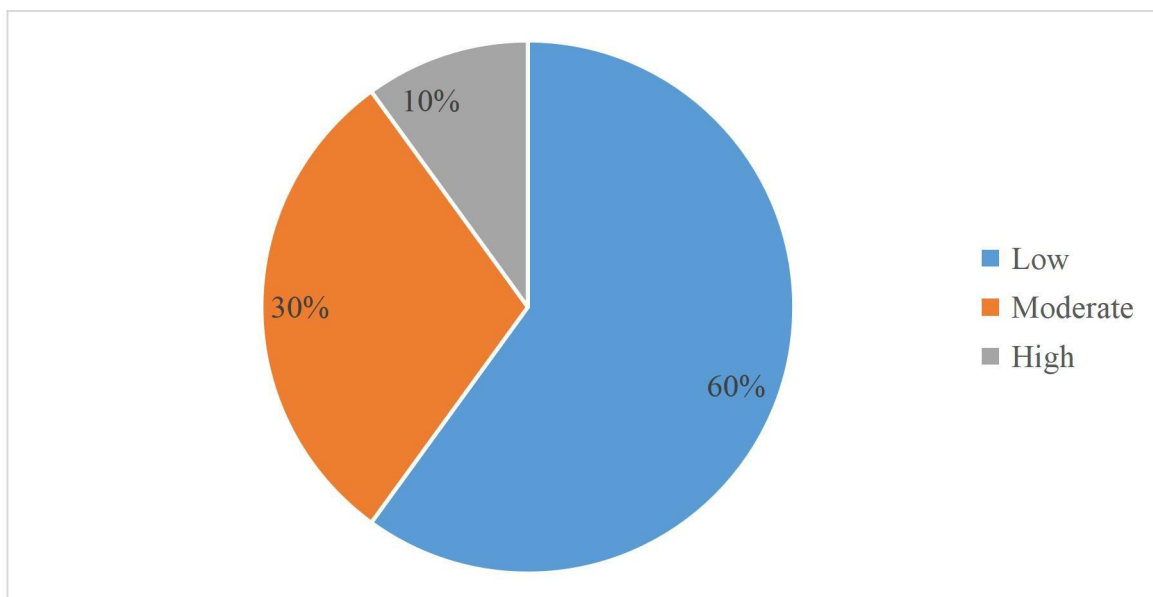
Figure 3: Number of sexual partners by respondents, n=30



Source: Primary data (2024)

Figure 3 shows that the majority, 24(80%) of the respondents mentioned that they had only one sexual partner while the minority, 2(6.7%) mentioned that they had more than one sexual partner.

Figure 4: Level of family income, n=30.



Source: Primary data (2024)

Figure 4 shows that the majority, 18(60%) of the respondents mentioned that their family level of income was low while the minority, 3(10%) mentioned that it was high.

Health facility-related factors influencing utilization of intrauterine contraceptive devices among women of reproductive age

Table 2: Health facility-related factors influencing utilization of intrauterine contraceptive devices among women of reproductive age, n=30.

Variable	Category	Frequency (f)	Percentage (%)
Waiting time	Less than one hour	1	3.3
	Two hours	4	13.3
	Three hours	8	26.7
	Four hours and more	17	56.7
Health workers' recommendations	Yes	14	46.7
	No	16	53.3
Health education	Yes	12	40
	No	18	60
Adequate Health facilities in Community	Yes	4	13.3
	No	26	86.3
Antenatal visits attended	4 visits	19	63.3
	8 visits	6	20
	None	5	16.7
Availability of IUDs	They always available	4	13.3
	Sometimes they are not available	24	80
	They are not available at all	2	6.7
Adequate health care providers	Yes	13	43.3
	No	17	56.7
Provision of community outreaches	Yes	21	70
	No	9	30
Availability of family doctor	Yes	3	10
	No	27	90

Source: Primary data (2024)

Table 2 shows that more than half, 17(56.7%) of the respondents mentioned that they took four hours and more waiting for family planning services at the facility while only 1(3.3%) mentioned less than one hour. Most, 16(53.3%) of the respondents mentioned that health care providers did not recommend the use of intrauterine devices whereas the least, 14(46.7%) mentioned that health workers recommend intrauterine devices.

The majority 18(60%) of the respondents mentioned that they did not receive health education about the use of intra-uterine devices while only 12(40%) mentioned that they received health education about the use of intrauterine devices. The majority, 26(86.3%) of the respondents mentioned that they did not have adequate health facilities in their communities that could provide intrauterine devices while the minority 4(13.3%) mentioned that they had them. The majority 19(63.3%) of the respondents mentioned that they attended 4 antenatal visits while the minority 5(16.7%) mentioned that they did not attend antenatal care.

The majority 24(80%) of the respondents mentioned that sometimes intrauterine devices are not available at the facility while the minority 2(6.7%) mentioned that they are not available at all. More than half 17(56.7%) of the respondents mentioned that they did not have adequate health care providers that provide family planning services at the facility while only 13(43.3%) mentioned that they had. The majority, 21(70%) of the respondents mentioned that the health facility provided outreaches in the community regarding utilization of family planning, while the minority, 9(30%) mentioned that it did not have outreaches in their communities. The majority 27(90%) of the respondents mentioned that they did not have a family doctor who provided advice regarding the utilization of intrauterine devices while the minority 3(10%) mentioned that they had.

DISCUSSION

Individual factors influencing utilization of intrauterine contraceptive devices among women of reproductive age

This study revealed that most 13(43.3%) of the respondents were between 26 and 30 years of age. This indicated that they were still young, and thus may not be actively involved in family planning due to the desire to have more children. This finding is similar to the findings by Diedrich, Madden, Zhao & Peipert (2015) in the USA who reported that continuation of intrauterine device usage at 48 months was highest among women older than 29 years of age at insertion as compared to women younger than 24 years of age. However, it is contrary to the findings by Ontiri, Ndirangu, Kabue, Biesma, Stekelenburg, & Ouma, (2019) in Kenya revealed those who were young at first birth were twice more likely to use intrauterine devices than their counterparts. In addition, findings showed that most 11(36.7%) of the respondents had a primary level of education. This indicated a lower education level and thus could have less information about intrauterine devices due to illiteracy leading to inadequate utilization. This finding is in line with findings by Bolarinwa & Olagunju, (2019) in Nigeria who revealed that the level of education of women was significantly associated with using Intrauterine devices. Women with high education status were twofold more likely to use intrauterine devices than those with low education.

Furthermore, most 12(40%) of the respondents had two children. This indicated that respondents would desire to have more children since they had few thus leading to low uptake of intrauterine devices. This finding is in line with findings by Sand, Mavhandu- Mudzusi, Tirfe & Mundeta (2015) in Ethiopia who revealed that individual factors did influence the uptake of intrauterine devices such as the number of children. Women with 5 or more children were 60% more likely to use intrauterine devices than those with a lower number of children. The study findings showed that most 12(40%) of the respondents mentioned that they had between 50 and 60 kilograms. This indicated that they had average weight. This finding is contrary to findings by King, Michels, Graubard & Trabert (2021) in the United States who revealed that women who were obese were more likely to use intrauterine devices than non-obese women. In addition, majority 24(80%) of the respondents mentioned that they had only one sexual partner. This indicated that they were not involved in multiple sexual relationships and therefore would not have issues of becoming pregnant, which could contribute to low utilization of intra-uterine devices. This finding is in agreement with findings by Kavanaugh, Jerman, & Finer (2015) in the USA who revealed that women's number of sexual partners was significantly associated with intrauterine device use. Findings showed that the intrauterine device uptake rate for those with fewer than two sexual partners in the previous year increased from 9.2–12.4%.

The study revealed that the majority 18(60%) of the respondents mentioned that their family level of income was low. This led to low uptake of the utilization of

intrauterine devices due to inadequate funds that would facilitate the utilization of intrauterine devices. This finding is in agreement with findings by Anik, Islam & Rahman (2022) in Bangladesh, who revealed that about 40% of families with poor income status perceived children as a source of income or as a means of getting financial assistance in the future when they grow up. Moreover, this resulted in low uptake of intrauterine devices decreasing the uptake rate from 13% to 6%. Health facility-related factors influencing utilization of intrauterine contraceptive devices among women of reproductive age

According to the study findings, more than half 17(56.7%) of the respondents mentioned that they took four hours and more waiting for family planning services at the facility. This showed that there was a long waiting time and therefore would lead to low utilization of the service. This is probably because of too many patients or inadequate care providers. This finding is in agreement with findings by Weston, Martins, Neustadt & Gilliam (2022) in the USA who revealed that long waiting times and strong recommendations by Healthcare providers were significantly associated with intrauterine device uptake among women of reproductive age. In addition, results demonstrated that 16(53.3%) of the respondents claimed that healthcare providers did not recommend the use of intrauterine devices. This indicated that respondents were not informed about this type of family planning method. This could be due to the availability of other methods of family planning methods. This finding is in agreement with findings by Weston, Martins, and Neustadt & (Gilliam 2022) who reported that 37% of women who sought intrauterine device services reported that it was due to strong recommendations from their Healthcare providers.

Furthermore, the study showed that the majority 18(60%) of the respondents mentioned that they did not receive health education about the use of intrauterine devices. This indicated that respondents were not informed about this type of family planning. This is probably because of a lack of time by health workers thus being unable to provide comprehensive health education. This finding was in line with findings by Nobiling & Drolet, (2012) in the United States who revealed that the provision of health education by Healthcare providers increased uptake of intrauterine devices by 19%. The study findings showed that the majority 26(86.3%) of the respondents mentioned that they did not have adequate health facilities in their communities that provide intrauterine devices. This indicated a lack of accessibility to intrauterine devices in the nearby health facilities. This is probably because of inadequate resources needed to provide services near people. This finding is in line with findings by Opiro and others (2024) in the United Kingdom who reported that areas with a sparse distribution of health facilities had twofolds in intrauterine device usage compared to those with a limited number of health facilities.

The study findings revealed that the majority 24(80%) of the respondents mentioned that sometimes intrauterine devices were not available at the facility. This indicated a lack of adequate intrauterine devices thus women would not seek for it due to unavailability. This finding is in agreement with those by (Omona & Namuli, 2020), in Uganda, who reported that the lack of availability of intra-uterine devices in most health facilities leads to poor utilization by women of reproductive age. The study findings showed that the majority 27(90%) of the respondents mentioned that they did not have a family doctor who provided advice regarding the utilization of intrauterine devices. This indicated that they lacked a physician close to the family who would provide information about intrauterine devices. This could be due to a lack of adequate facilitation for the physician. This finding is in line with findings by Tyler et al., (2022) in Georgia USA who revealed that health facility-related factors such as using an office-based family medicine physician resulted in more than 60% of infrequent intrauterine device provision.

CONCLUSION

This study was about factors influencing the utilization of intrauterine contraceptive device contraception among women of reproductive age at Entebbe Regional Referral Hospital, Entebbe municipality Wakiso district. The Individual factors were; age, level of education, number of children, weight, number of sexual partners, and family level of income. The health facility-related factors were; waiting time, health care providers' recommendations, health education, availability of health facilities in the community, number of antenatal visits, availability of intrauterine devices, adequate health care providers, and having a family doctor. Therefore, health facility-related factors had much influence on the utilization of intra-uterine devices.

RECOMMENDATION

For the Hospital

Reduce Waiting Time; The hospital should Implement strategies to minimize waiting times for contraceptive services including intra-uterine device insertion.

Health Education; Strengthen health education programs within the hospital to raise awareness about the benefits and availability of intra-uterine devices.

Capacity building; The hospital should ensure healthcare providers receive regular training on contraceptive counseling and intra-uterine device insertion techniques, **Availability of Devices** Maintain consistent availability of intra-uterine devices to meet the demand of women seeking contraceptive options.

Integration of Services; The hospital should integrate contraceptive services with antenatal and postnatal care to reach women at different stages of their reproductive health.

For Women

Education and Awareness; Women should attend health education sessions to better understand the benefits of intra-uterine devices.

Early postnatal visits; Postnatal mothers should attend the recommended visits where the most suitable contraceptive options like intra-uterine devices can be discussed based on individual factors, this can be done through open discussions with families to increase acceptance and support of contraception.

IMPLICATIONS TO NURSING PRACTICE

Patient-Centered Care. Nurses should adopt a patient-centered approach, taking into consideration individual factors like age, education level, and family income when discussing contraceptive options.

Continued Education; Nurses need ongoing education and training to stay updated on the latest contraceptive methods, including Intra uterine devices, and to effectively counsel women.

Advocacy and Support; Nurses play a crucial role in advocating for comprehensive contraceptive services within the hospital and community settings.

Cultural Sensitivity; Awareness of cultural beliefs and practices related to contraception is essential for nurses to provide non-judgmental care and support.

Collaborative Care; Collaboration between nurses, doctors, and other healthcare providers is vital to ensure holistic care that addresses both the physical and emotional aspects of contraceptive decision-making.

ACKNOWLEDGEMENT

I sincerely acknowledge the almighty God, for my life and the gift of perseverance He gave me throughout my studies.

I wish to acknowledge my supervisor, Ms. Bantia Mercy for the contribution and co-operation rendered to me in the production of this report.

I fully acknowledge the principal, teaching staff, and whole administration of Mildmay Uganda School of Nursing and Midwifery for the hard work they have done to impact skills, and knowledge in me, and for their tireless guidance and prayers during the compilation of this research report.

LIST OF ABBREVIATIONS

FP: Family Planning
IUDs: Intra Uterine Devices
MOH: Ministry of Health
UNMEB: Uganda Nurses and Midwives Examinations Board
USA: United States of America
WHO: World Health Organization

SOURCE OF FUNDING

The study was not funded.

CONFLICT OF INTEREST

The author declares no conflict of interest

AUTHOR CONTRIBUTIONS

KN- Study developer, Data collector and analyzer
 MB- 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

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Mercy Bantia is a tutor at Mildmay Uganda School of Nursing and Midwifery and a research supervisor.

REFERENCES

1. Anik, A. I., Islam, M. R., & Rahman, M. S. (2022). Association between socioeconomic factors and unmet need for modern contraception among the young married women: A comparative study across the low-and lower-middle-income countries of Asia and Sub-Saharan Africa. *PLOS Global Public Health*, 2(7), e0000731. <https://doi.org/10.1371/journal.pgph.0000731> PMID:36962420 PMCID: PMC10021951
2. Bolarinwa, O. A., & Olagunju, O. S. (2019). Knowledge and factors influencing long-acting reversible contraceptives use among women of reproductive age in Nigeria. *Gates Open Research*, 3.
3. Diedrich, J. T., Madden, T., Zhao, Q., & Peipert, J. F. (2015). Long-term utilization and continuation of intrauterine devices. *American Journal of Obstetrics and Gynecology*, 213(6), 822-e1. <https://doi.org/10.1016/j.ajog.2015.08.077> PMID:26409157 PMCID: PMC4679676
4. Espey, E., & Ogburn, T. (2011). Long-acting reversible contraceptives: intrauterine devices and the contraceptive implant. *Obstetrics & Gynecology*, 117(3), 705-719. <https://doi.org/10.1097/AOG.0b013e31820ce2f0> PMID:21343774
5. King, L. A., Michels, K. A., Graubard, B. I., & Trabert, B. (2021). Trends in oral contraceptive and intrauterine device use among reproductive-aged women in the US from 1999 to 2017. *Cancer Causes & Control*, 32, 587-595. <https://doi.org/10.1007/s10552-021-01410-8> PMID:33689082 PMCID:PMC8096680
6. Kavanaugh, M. L., Jerman, J., & Finer, L. B. (2015). Changes in use of long-acting reversible contraceptive methods among US women, 2009-2012. *Obstetrics & Gynecology*, 126(5), 917-927. <https://doi.org/10.1097/AOG.00000000000001094> PMID:26444110 PMCID: PMC4946164
7. Mbuthia, F. W., Okumbe, G. M., Monda, J., & Ng'ang'a, P. M. (2017). Intrauterine device uptake among women seeking family planning services in Nairobi County, Kenya. *African Journal of Midwifery and Women's Health*, 11(1), 46-50. <https://doi.org/10.12968/ajmw.2017.11.1.46>
8. Mhlanga, F. G., Balkus, J. E., Singh, D., Chappell, C., Kamira, B., Harkoo, I., Szydlo, D., Mukaka, S., Piper, J., & Hillier, S. L. (2019). Feasibility and safety of iud insertion by mid-level providers in sub-Saharan Africa. *International Perspectives on Sexual and Reproductive Health*, 45, 61-69. <https://doi.org/10.1363/45e8019> PMID:31859669 PMCID:PMC8515488
9. Nobiling, Brandye, and Judy C. Drolet. "Exploring Trends in Intrauterine Device (IUD) Usage Among Women in the United States: A Literature Review." *Health Educator* 44.2 (2012): 22-28.
10. Ontiri, S., Ndirangu, G., Kabue, M., Biesma, R., Stekelenburg, J., & Ouma, C. (2019). Long-acting reversible contraception uptake and associated factors among women of reproductive age in rural Kenya. *International Journal of Environmental Research and Public Health*, 16(9), 1543. <https://doi.org/10.3390/ijerph16091543> PMID:31052372 PMCID: PMC6539670

11. Opiro, K., Opee, J., Sikoti, M., Pebalo, P. F., Ayikoru, J. H., Akello, H., Manano, P., & Bongomin, F. (2024). Utilization of modern contraceptives among female health care workers at Gulu University teaching hospitals in Northern Uganda. *Contraception and* <https://doi.org/10.1186/s40834-024-00274-y> PMID:38582918 PMCID: PMC10998388
12. *Reproductive Medicine*, 9(1), 13.
13. Prol, B., Klein, S., Rennie, C., & Andelija, S. (2024). Respondent Demographics and Contraceptive Use Patterns in the United States: A National Survey of Family Growth Analysis. *Cureus*, 16(1). <https://doi.org/10.7759/cureus.53121> PMID:38420091 PMCID: PMC10900169
14. Roscoe, J.T. (1975) *Fundamental Research Statistics for the Behavioral Sciences* [by] John T. Roscoe. Holt, Rinehart and Winston, New York.
15. Sandy, P. T., Mavhandu-Mudzusi, A. H., Tirfe, B. T., & Mundeta, B. (2015). Factors influencing the utilization of the intra-uterine contraceptive device among women in Addis Ababa, Ethiopia. *Africa Journal of Nursing and Midwifery*, 17(2), 4-16. <https://doi.org/10.25159/2520-5293/44>
16. Tyler, C. P., Whiteman, M. K., Zapata, L. B., Curtis, K. M., Hillis, S. D., & Marchbanks, P.A. (2012). Health care provider attitudes and practices related to intrauterine devices for nulliparous women. *Obstetrics & Gynecology*, 119(4), 762-771. <https://doi.org/10.1097/AOG.0b013e31824aca39> PMID:22433340
17. Tessema, Z. T., Teshale, A. B., Tesema, G. A., Yeshaw, Y., & Worku, M. G. (2021). Pooled prevalence and determinants of modern contraceptive utilization in East Africa: A Multi-country Analysis of recent Demographic and Health Surveys. *PloS One*, 16(3), e0247992. <https://doi.org/10.1371/journal.pone.0247992> PMID:33735305 PMCID: PMC7971875
18. Twesigye, R., Buyungo, P., Kaula, H., & Buwembo, D. (2016). Ugandan women's view of the IUD: is generally favorable but many have misperceptions about health risks. *Global Health: Science and Practice*, 4(Supplement 2), S73-S82. <https://doi.org/10.9745/GHSP-D-15-00304> PMID:27540127 PMCID:PMC4990164
19. Weston, M. R. S., Martins, S. L., Neustadt, A. B., & Gilliam, M. L. (2012). Factors influencing uptake of intrauterine devices among postpartum adolescents: a qualitative study. *American Journal of Obstetrics and Gynecology*, 206(1), 40-e1. <https://doi.org/10.1016/j.ajog.2011.06.094> PMID:21903193 PMCID: PMC3237760

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