Journal of Health and Nutrition Research
Vol. 4, No. 2, 2025, pg. 561-568, https://doi.org/10.56303/jhnresearch.v4i2.427
Journal homepage: https://journalmpci.com/index.php/jhnr/index

e-ISSN: **2829-9760**

Medical Eligibility as a Predictor of Continued Copper Intrauterine Device (IUD-Cu) Use: A Correlational Analysis

Esa Risi Suazini[1,3]*, Wikky Fawwaz Al Maki[2], Widya Hary Cahyati[3]

[1] Midwifery Diploma 3, STIKes Karsa Husada Garut, Indonesia
[2] Faculty of Informatic, Telkom University, Bandung, Indonesia
[3] Faculty of Medicine, Universitas Negeri Semarang, Semarang, Indonesia

Corresponding Author Email: esarisi91@gmail.com

ORIGINAL ARTICLES

Submitted: 10 May 2025

Accepted: 1 June 2025

Keywords:
Acceptors, Contraceptive Screening, Contraceptive Sustainability, IUD-Cu, Medical Eligibility

ABSTRACT

Approximately 60% of acceptors expressed dissatisfaction with contraceptive counseling services, which has resulted in a 0.7% decrease in modern contraceptive use in the last five years. One important factor in the sustainability of contraceptive use is the suitability of the acceptor's medical condition. This study aimed to determine the relationship between medical appropriateness and plans for continued use of the IUD-Cu. This study used a descriptive correlational design with a cross-sectional approach. Data were collected through structured interviews using a Medical Eligibility Criteria (MEC) application-based questionnaire. This application was created by WHO based on the 5th edition of the 2015 MEC for Contraceptive use guidebook. The sample was purposively selected, and 280 IUD-Cu acceptors were obtained. Univariate analysis was performed with frequency distribution and categorization of medical eligibility, while bivariate analysis used Chi-Square test and Prevalence Ratio (PR) with 95% CI. The results showed that 92.9% of acceptors were medically fit to use IUD-Cu, while 7.1% were not fit. A total of 12.1% of acceptors planned to change contraceptives. There was a significant association between medical eligibility and plans to continue using the IUD-Cu (p = 0.000; PR = 3.077; 95% CI: 1.574-6.015), indicating that medically eligible acceptors had 3.077 times greater potential to continue using the IUD-Cu than those who were not eligible. Therefore, it is recommended to optimize pre-installation screening of IUD-Cu with medical criteria-based tools so that the sustainability of contraceptive use can be maintained and women's reproductive rights are maximally fulfilled.

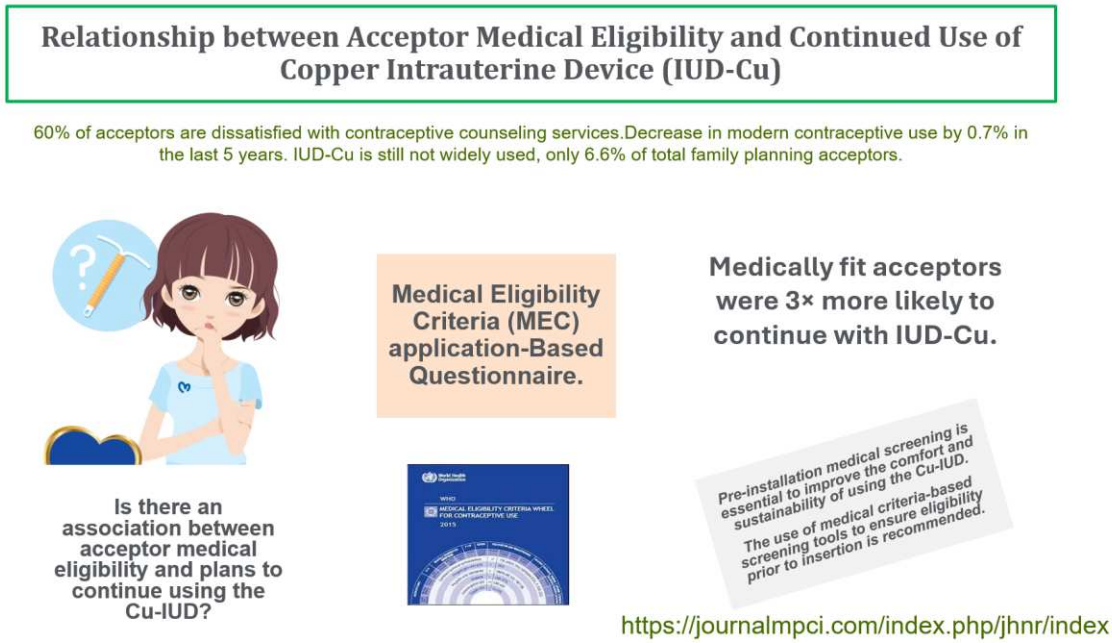
Key Messages:

- The level of rigor of officers in assessing the medical eligibility of prospective acceptors before IUD-Cu insertion determines the acceptor's sense of security and comfort with the chosen contraceptive.
- The acceptor's comfort in using the IUD-Cu plays an important role in supporting the continued use of the contraceptive.

Access this article online

Quick Response Code

GRAPHICAL ABSTRACT



INTRODUCTION

The use of long-acting contraceptives, especially IUD-Cu, is still relatively low in Indonesia. Data shows that since 2012, national use of long-acting contraceptives decreased by 0.7%, while natural methods increased by 1.8% (1). This indicates the low knowledge of couples of childbearing age about reproductive health and contraception (2), that contribute to errors in contraceptive selection (3)(4)(5). Such errors can lead to health problems, increased medical costs, and decreased productivity of women in carrying out their reproductive and social roles. (6).

The importance of contraceptive counseling before and after insertion is key to avoiding such mistakes (7). Pre-fitting counseling identifies the health condition of the potential acceptor to ensure the safety of the contraceptive chosen (8)(9). Post-installation counseling provides education on menstrual cycle changes, red flags, and follow-up steps in case of problems (10). However, the quality of counseling remains a challenge, with the survey showing that 59.4% of acceptors expressed dissatisfaction with the counseling services they received (11).

One of the main problems is the suboptimal use of Decision Support Tools, especially in choosing long-term methods such as IUD-Cu (12). Health workers also face time constraints due to the unbalanced ratio of health workers to the number of patients. As a result, important information regarding medical contraindications such as reproductive tract infections, tumors, abnormal bleeding, or ARV use is often not conveyed properly. In fact, an understanding of medical eligibility is very important to determine whether someone is eligible to use the Cu-IUD or not (13)(14).

The low uptake of IUD-Cu, which only accounts for 6.6% of the 55% of effective contraceptive acceptors, reinforces the importance of education and appropriate approaches. Factors such as education level, employment status, knowledge about IUD-Cu, previous experience, and government support influence the decision to use this contraceptive. The suitability of a contraceptive to one's medical condition not only impacts the effectiveness of use, but also the convenience and sustainability of its use (15)(6).

To date, no study has specifically evaluated the relationship between acceptor medical eligibility and continued use of the Cu-IUD. Therefore, this study was conducted to identify the medical characteristics of IUD-Cu acceptors based on WHO eligibility categories (categories 1-4)(16) and assess its association with plans to continue using the Cu-IUD. The results of this study are expected to serve as a

https://doi.org/10.56303/jhnresearch.v4i2.427

basis for evaluating the fulfillment of women's reproductive rights as well as a reference in developing more targeted contraceptive policies and services (17).

METHODS

This study used a descriptive correlational research design with a cross-sectional approach. The sample size in this study was 280 IUD-Cu acceptors. The sample was purposively selected from women of childbearing age (15-49 years old), sexually active, willing to participate in the study, and provide data on medical conditions or medical records, without severe communication or cognitive barriers. Data collection techniques were conducted through interviews. The variables in this study consisted of the independent variable, namely acceptor medical eligibility, and the dependent variable, namely the plan for continued use of the IUD-Cu. Criterion 1 if the acceptor did not have any of the diseases mentioned in criteria 2-4.

For ease of use, the language in the application has been translated into Bahasa Indonesia and the questions in the Google Form are closed-ended. The validation process involved a readability test by a practicing midwife and a pilot test on three non-respondents. There were no corrections to the content validation results. During the interview, we were assisted by several midwifery students who had met the qualifications. The interviewers were midwifery students who had passed the Family Planning course in theory and clinical practice. The place of the interview was at the acceptor's house spread across West Java, Indonesia.

The questionnaire used to collect data was developed based on the mobile phone application Medical Eligibility Criteria (MEC) for Contraceptive Use. This application was designed based on the 5th edition 2015 guidebook issued by the World Health Organization (WHO). The questions in the questionnaire are structured similarly to the prospective acceptor's medical condition screening scheme. Medical conditions are categorized into criteria 1, 2, 3, and 4. Medical criterion 1 indicates that the acceptor's health condition is suitable and safe to use the IUD-Cu. Criterion 2 indicates that the acceptor's health condition is still feasible to use the IUD-Cu, but there are mild risks that require post-installation monitoring by staff. Kriteria 3 indicates that acceptors are less likely to use IUD-Cu, and is at high risk and if there are no other contraceptive options, the IUD-Cu can still be used with close monitoring. Medical criterion 4 indicates that the IUD-Cu is not suitable for use due to the risk of jeopardizing the acceptor's health (18)(17).

The acceptor's medical condition was grouped under criterion 2 if: < 18 years of age, had never given birth, had stage 1 or 2 HIV and was taking ARVs, had Sexually Transmitted Infections (STIs) such as vaginitis and others. Acceptors were grouped into criterion 3 if: had stage 3 or 4 HIV and were taking ARVs or STIs with a risk of chlamydia or gonorrhea. Acceptors were grouped into criterion 4 if: confirmed STI of chlamydia/gonorrhea type, trophoblastic disease, postpartum period of 2 days to 4 weeks, vaginal bleeding outside the menstrual cycle of unknown cause, Pelvic Inflammatory Disease (PID), cervical cancer, and puerperal infection or post-abortion infection (18)(17).

Data analysis was performed by calculating the frequency and proportion of each variable, then determining the interpretation of the eligibility of each IUD-Cu acceptor based on medical criteria. Interpret the acceptor's medical eligibility by looking at his/her answers, if the acceptor answers "no" to all questions, then he/she is in criteria group 1. If the acceptor answers "yes" to one or more conditions/diseases in criteria 2 or 3 or 4, then his/her medical eligibility is in criteria 2 or 3 or 4. If the acceptor answers yes to 2 or more different criteria, then he/she is grouped under the higher criteria. For example, if the acceptor answers "yes" to criteria 2 and 3, the final conclusion of the patient's medical eligibility is criterion 3. Health workers should prioritize the choice of potential acceptors on criteria 1, then criteria 2. If the acceptor is in criterion 3, the health worker should refer her medical condition to the appropriate specialist, for treatment and consideration of the most feasible contraceptive(16).

The relationship between the two variables was analyzed by hypothesis testing using Chi-Square with a 95% confidence interval. The results of the study were presented in tabular form, including a table of interpretation of respondents' medical eligibility, frequency distribution of plans to replace the IUD-Cu,

https://doi.org/10.56303/jhnresearch.v4i2.427

as well as a table of the relationship between acceptors' medical eligibility and continued use of the IUD-Cu.

CODE OF HEALTH ETHICS

This study has fulfilled ethical clearance from the Health Ethics Committee of the Bhakti Tunas Husada Tasikmalaya College of Health Sciences number No.020/kepk-bth/V/2020.

RESULTS

Based on the univariate analysis conducted on respondents' menstrual characteristics, 90% of respondents' menstrual blood volume was normal and 87.5% experienced mild to moderate premenstrual syndrome. The volume or amount of menstrual blood is categorized as normal if the menstrual blood is less than 50 ml or 2 changes of pads in a day, assuming each pad is filled with blood. If the blood volume is more than that, it is categorized as increased menstrual blood. Information on the characteristics of menstrual blood volume and premenstrual syndrome symptoms in IUD-Cu Acceptors is presented in Table 1.

Table 1. Frequency Distribution of Menstrual Blood Volume and Premenstrual Syndrome Symptoms of IUD-Cu Acceptors

Variable	Category	n	%
Menstrual Blood Volume	Normal	252	90,0
	Increased	28	10,0
Premenstrual Syndrome	No complaints	31	11,1
	Mild-moderate complaints	245	87,5
	Severe complaints	4	1,4
	Total	280	100

Table 2. Frequency Distribution of Medical Criteria of IUD-Cu Acceptors on Subvariables

Sub Variable	Percentage on Criteria				Total
	1	2	3	4	
Age	98,9	1,1			100
Parity	99,6	0,4			100
Taking ARV and HIV stage 1 and 2	0	0			100
Sexually Transmitted Infections (STIs) such as vaginitis and others	71,4	28,6			100
Taking ARV and HIV stage 3 and 4	0		0		100
Trophoblastic Disease	0		0		100
Post Partum 2 days-4 weeks	0		0		100
Vaginal bleeding outside the menstrual cycle	96,1			3,9	100
Pelvic Inflammatory Disease	97,9			2,1	100
Cancer cervix	0			0	100
Tumour of the reproductive tract	99,3			0,7	100
Puerperal Sepsis	89,2			1,8	100

Premenstrual syndrome is a collection of symptoms of discomfort during menstruation or the first few days of menstruation. Symptoms include dysmenorrhoea or menstrual pain, dizziness, mood swings, breast discomfort, and pelvic discomfort. The frequency and proportion of premenstrual syndrome in Table 1. Univariate analysis was conducted on acceptor medical eligibility variables. The sub-variables analyzed were age, parity, ARV consumption, HIV stage 1-2, RTI, HIV stage 3-4, trophoblastic disease, postpartum 2 days-4 weeks, vaginal bleeding outside the menstrual cycle, PID, reproductive tract cancer/tumor and puerperal sepsis. If the respondent is more than 19 years old, multi-parity acceptor, not taking ARVs, not having HIV, not having RTI, not having trophoblastic disease, does not be postpartum for 2 days-4 weeks, does not have vaginal bleeding outside the menstrual cycle, not having PID, not having cancer/tumor of the reproductive tract and no history of puerperal sepsis in the 3 months before the

https://doi.org/10.56303/jhnresearch.v4i2.427

insertion of IUD-Cu then the respondent is interpreted as medical criteria 1. If the respondent is less than or equal to 19 years of age or parity nulliparous acceptor or infected with stage 1-2 HIV and or suffering from RTI, the respondent is interpreted as medical criteria 2. If the respondent is infected with stage 3-4 HIV or suffers from trophoblastic disease or the respondent was fitted with an IUD-Cu within 2 days -4 weeks after delivery, the respondent is interpreted as medical criteria 3. If the respondent had vaginal bleeding outside the menstrual cycle or had PID or had reproductive tract cancer or had a reproductive tract tumor and or the respondent had puerperal sepsis 3 months before IUD-Cu insertion, then the respondent was interpreted as medical criterion 4. Information on the frequency and proportion of respondents' medical criteria can be read in Table 2 and Table 3, while the results of our interpretation of respondents are in Table 3 (12).

Respondents were eligible to use IUD-Cu if they answered "no" to all sub-variables. If she answered "yes" to one of the variables, then we must look at the criteria for that variable. If the answer "yes" is in 2 variables with different criteria, then the largest criteria are taken. The results of the interpretation of the medical appropriateness of each respondent using IUD-Cu are in Table 3.

Table 3. Frequency Distribution of Interpretation, Plan to Change Contraception of Medical Eligibility Criteria for IUD-Cu Acceptors

Medical Criteria	IUD-Cu Acceptor		Continue using IUD		Plan to Change Contraception	
	n	%	n	%	n	%
1	188	67,	240	92,3	20	7,7
2	72	25,7				
3	0	00,0	6	30	14	70
4	20	7,1				
Total	280	100	246	87,86	34	12,14

Table 4. Relationship between Acceptor's Medical Eligibility and Continuity Plan to Use IUD-Cu

Acceptor's Medical Eligibility	Continuity Plan to Use IUD-Cu				Total		PR 95% CI	P value
	Continue using IUD		Changing IUD-Cu					
	n	%	n	%	N	%		
Eligible (criteria 1 and 2)	240	92,3	20	7,7	260	100	3,077 (1,574-6,015)	0,000
Not Eligible (criteria 3 and 4)	6	30	14	70	20	100		

DISCUSSION

Based on the results of the variable analysis, it was found that 10% of acceptors experienced side effects of IUD-Cu in the form of abnormal menstrual blood volume (Table 1). Acceptors' understanding of these changes is important as menstrual volume and cycle may adapt in the first 3 months after insertion. If after 3 months the condition remains abnormal, it is necessary to consider replacing the IUD-Cu. The study showed a similar increase in menstrual volume and duration during the first year of IUD-Cu use which caused 2.4% of acceptors to discontinue using the method. Thus, the findings in this study corroborate the results of Courtney et al. and emphasize the importance of education regarding menstrual changes after IUD-Cu insertion (19)(3)(13). Other side effects such as menorrhagia are also associated with iron deficiency anemia, as explained by Jaffery (2021), which found that this condition can lead to serious complications such as heart failure or prematurity. This finding confirms the need for counseling that includes information on the risk of anemia and the importance of balanced nutrition for Cu-IUD users (20).

It is important to distinguish between side effects and medical contraindications. Side effects occur after use, while contraindications are medical conditions that do not support the use of the IUD-Cu in the first place. This study found that 7.1% of acceptors were in Criterion 4, meaning that they were not eligible

https://doi.org/10.56303/jhnresearch.v4i2.427

for the IUD-Cu due to risky medical conditions. This reinforces the importance of rigorous screening prior to insertion, as also highlighted in previous literature (21)(22).

Regarding the concept of "4 terlalu" (too young, too old, too often, too much), the results of this study showed that 98.9% of acceptors were in the safe age category (Criterion 1) and 1.1% in Criterion 2 (mild risk). This indicates that most acceptors are in the healthy reproductive age range (20-35 years), which is in accordance with WHO recommendations and in line with the results of Buitrago et al. (2022) on the physical and mental health risks of teenage or late pregnancy. Therefore, although the discussion on "4 too" is an important background, in this study specifically only the aspects of age and parity were found to be relevant, and both showed a fairly ideal acceptor profile (23)(24)(25).

The study also showed that all acceptors had a history of childbirth, meaning there were no nulliparous acceptors. In the context of the WHO MEC, nulliparity is included in Criterion 2 as there is mild risk, so this result indicates that the parity profile of the acceptors in this study is appropriate and supportive of continued use of the Cu-IUD. Nulliparas are at mild risk for IUD use, as nulliparas feel more pain during IUD insertion, the rate of continued contraceptive use at 6 months was 9.4% less than multiparas. The expulsion rate in nulliparas was 8.7% higher and 72% of nulliparas experienced dysmenorrhea requiring analgesic use (26)(27).

Another important finding was the Prevalence Ratio (PR) value of 3.077 (95% CI: 1.574-6.015), indicating that acceptors who were medically eligible (Criteria 1 and 2) were 3 times more likely to continue using IUD-Cu than those who were not eligible (Criteria 3 and 4). In practical terms, this means that screening based on medical eligibility is crucial for continued contraceptive use. These findings provide a strong basis for health workers to strengthen screening and counseling practices and prioritize methods that are medically appropriate for individuals to reduce drop-outs and improve the effectiveness of family planning programs (16)(28).

Regarding the statement that "almost 33% of acceptors did not choose the right IUD-Cu", it is important to clarify that 25.7% of acceptors were in Criterion 2 (can still be used with monitoring), and 7.1% in Criterion 4 (not appropriate). Thus, the use of the phrase "did not choose the right one" should be explained that this category includes criteria 2 (use is still possible, but suboptimal and requires monitoring) and criteria 4 (Not recommended and because it is dangerous to use). This means that even if 33% of acceptors are not in the ideal condition (Criterion 1), not all of them fall under total incorrect use. This suggests there are gaps in screening and counseling practices that need to be addressed (13)(2).

This finding is also in line with a study conducted by L. Li et al. (2015), which examined the relationship between copper corrosion in the TCu220 IUD and the incidence of abnormal uterine bleeding. The study showed that the copper ion release rate was higher in women with abnormal bleeding, accompanied by increased copper ion levels and VEGF expression in endometrial tissue. This positive correlation supports our finding that abnormal bleeding may result from a localized inflammatory response to the Cu IUD, supporting the need for post-insertion monitoring and thorough education of acceptors (29)(20).

Furthermore, this finding is also relevant in relation to the results of a study at Dr. Cipto Mangunkusumo Hospital by a research team in 2021 that evaluated the effectiveness, expulsion, and acceptance rates of post-placental IUDs inserted using clamps. Although the study did not directly assess medical appropriateness according to the WHO MEC, the results showed that with standardized procedures and appropriate acceptor selection, IUD insertion has a high rate of effectiveness and satisfaction. This reinforces the importance of integration between rigorous medical screening and good insertion techniques (30)(31).

CONCLUSION

The conclusion from the results of this study is that most IUD-Cu acceptors are considered medically fit. As many as 67.1% of acceptors may use IUD-Cu without restrictions. A total of 25.7% of acceptors are still feasible to use IUD-Cu, but there is a mild risk, so its use needs supervision. A total of 7.1% of acceptors are not recommended to use IUD-Cu and the danger of continuing IUD-Cu contraception so it is necessary to switch to other contraceptive methods.

https://doi.org/10.56303/jhnresearch.v4i2.427

After conducting this study, the researcher suggested making a tool that makes it easier for prospective family planning acceptors to choose the right contraception according to their health conditions. Prospective acceptors screen themselves before getting counseling from officers, thus increasing the knowledge of prospective acceptors about contraception and reproductive health.

FUNDING

The authors declare that this research was privately funded or did not receive any funding from other institutions or sectors

ACKNOWLEDGMENTS

The publication of this manuscript was supported by STIKes Karsa Husada in the form of donations based on internal institutional regulations.

CONFLICTS OF INTEREST

The authors declare no conflict of interest.

REFERENCES

1. Wijayanti UT. Faktor-Faktor yang Berhubungan dengan Penggunaan Metode Kontrasepsi Tradisional. J Promosi Kesehat Indones. 2021;16(1):14–22.
2. Nelson HD, Cantor A, Jungbauer RM, Eden KB, Darney B, Ahrens K, et al. Effectiveness and Harms of Contraceptive Counseling and Provision Interventions for Women: A Systematic Review and Meta-analysis. Ann Intern Med. 2022;175(7):980–93.
3. Christine Dehlendorf, MD M. Contraception: Counseling and selection. In: Eckler CASK, editor. Uptodate. 1st ed. America: UpToDate; 2020. p. 1–46.
4. Serfaty D. Update on the contraceptive contraindications. J Gynecol Obstet Hum Reprod. 2019;48(5):297–307.
5. Woodhams EJ, Gilliam M. Contraception. Ann Intern Med. 2019;170(3):ITC17–31.
6. Carlin CS, Fertig AR, Dowd BE. Affordable care act's mandate eliminating contraceptive cost sharing influenced choices of women with employer coverage. Health Aff. 2016;35(9):1608–15.
7. Ermias Y, Averbach SH, Dey AK, Gebrehanna E, Holt K. The association between quality of contraceptive counseling and selection of contraceptive method post-counseling among women in Ethiopia. Contraception. 2023;124:110060.
8. Yu Y, Zhou Z, Wang L, Liu J. Effect of Mirena Intrauterine Device on Endometrial Thickness, Quality of Life Score, and Curative Effect in Patients with Perimenopausal Abnormal Uterine Bleeding. Comput Math Methods Med. 2022;2022.
9. Festin MPR. Overview of modern contraception. Best Pract Res Clin Obstet Gynaecol. 2020;66:4–14.
10. Coulibaly A, Baguiya A, Kpebo D, Zango A, Tougri H, Garanet F, et al. Factors associated with the discontinuation of modern contraceptive methods among lactating women in nine West African high-fertility countries: findings of the most recent demographic and health surveys. Arch Public Heal. 2025;83(1).
11. Widiantari K, Chania MP. The Role of Field Officers of Family Planning (FOFP) in The Unmet-Need Incidents on The Productive Age Couples. J Kebidanan. 2022;11(2):211.
12. World Health Organization. Medical eligibility criteria for contraceptive use - Executive summary. In: WHO, editor. Department of Reproductive Health and Research World Health Organization. 5th ed. Geneva, Switzerland: Department of Reproductive Health and Research World Health Organization; 2015. p. 268.
13. Xue W, Heffernan C. Therapeutic communication within the nurse–patient relationship: A concept analysis. Int J Nurs Pract. 2021;27(6):1–8.
14. Ewerling F, Victora CG, Raj A, Coll CVN, Hellwig F, Barros AJD. Demand for family planning satisfied

https://doi.org/10.56303/jhnresearch.v4i2.427

with modern methods among sexually active women in low- and middle-income countries: Who is lagging behind? Reprod Health. 2018;15(1):1–10.
15. Çalikoğlu EO, Yerli EB, Kavuncuoğlu D, Yılmaz S, Koşan Z, Aras A. Use of family planning methods and influencing factors among women in Erzurum. Med Sci Monit. 2018;24:5027–34.
16. World Health Organization (WHO). World Family Planning. In: United Nations. 1st ed. United Nations; 2022. p. 43.
17. Nguyen AT, Curtis KM, Tepper NK, Kortsmit K, Brittain AW, Snyder EM, et al. U.S. Medical Eligibility Criteria for Contraceptive Use, 2024. Jones TF at all, editor. Vol. 73, MMWR Recommendations and Reports. U.S Departement of Health and Human Services: Morbidity and Mortality Weekly Report; 2024. 1–126 p.
18. Aksari ST. Karakteristik Kelayakan Pemakaian Kontrasepsi Suntik 3 Bulan (Dmpa) Di Praktik Mandiri Bidan " S " Kesugihan Cilacap. Media Berbagi Keperawatan. 2020;3(1):7–12.
19. Baker CC, Creinin MD. Long-Acting Reversible Contraception. Obstet Gynecol. 2022;140(5):883–97.
20. Jaffery SN, Mubarik F, Zubair F, Laique T. Percentage of menorrhagia leading to iron deficiency anemia in non hormonal intrauterine device users. Pakistan J Med Heal Sci. 2021;15(1):204–5.
21. Harris ML, Feyissa TR, Bowden NA, Gemzell-Danielsson K, Loxton D. Contraceptive use and contraceptive counselling interventions for women of reproductive age with cancer: a systematic review and meta-analysis. BMC Med. 2022;20(1):1–15.
22. Curry A, Williams T, Penny ML. Pelvic inflammatory disease: Diagnosis, management, and prevention. Am Fam Physician. 2019;100(6):357–64.
23. Buitrago Ramírez F, Ciurana Misol R, Fernández Alonso M del C, Tizón JL. Prevention of mental health disorders in primary care: Pregnancy in adolescence. Aten Primaria. 2022;54:102494.
24. Moreau C, Bohet A, Hassoun D, Teboul M, Bajos N. Trends and determinants of use of long-acting reversible contraception use among young women in France: Results from three national surveys conducted between 2000 and 2010. Fertil Steril. 2013;100(2):451–8.
25. Redeker NS. Sleep Health in Women of Childbearing Age. J Women's Heal. 2020;29(3):430–4.
26. Branger B, Priou E, David P. Copper-containing intrauterine device (cIUD): Comparison of tolerance and efficacy in nulliparous and parous women over 6 months. Gynecol Obstet Fertil Senol. 2021;49(12):897–906.
27. WHO. Rekomendasi Praktik Terpilih pada Penggunaan Kontrasepsi. Diadaptasi dari buku "Selected Pract Recomm Contracept Use" Third Ed 2016. 2016;1(1):72.
28. Rohmah HNF. Penyuluhan Pemilihan Alat Kontrasepsi Sesuai Kondisi Kesehatan Akseptor. SELAPARANG J Pengabdi Masy Berkemajuan. 2022;6(3):1375.
29. Li L, Li J, Li N, Zhang Y, Feng X. Analysis of the reason of abnormal uterine bleeding induced by copper corrosion of IUD Cu. Clin Exp Obstet Gynecol. 2016;43(6):883–6.
30. Gunardi ER, Putri RA, Pasidri Y. A prospective study of effectivity, expulsion, and acceptability of post-placental iud cu t380a insertion using clamp in a tertiary hospital. J South Asian Fed Obstet Gynaecol. 2021;13(2):92–6.
31. Kamwesigye A, Amanya D, Epuitai J. Barriers and enablers to utilisation of postpartum long-acting reversible contraception in Eastern Uganda: a qualitative study. Contracept Reprod Med. 2024;5.

https://doi.org/10.56303/jhnresearch.v4i2.427