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Research Article

The Influence of DMPA on the Instability of the Menstrual Cycle of KB Acceptors by Injection in Cikulur Public Health Centre Workspace in 2022

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Abstract

Aims: Depo-Medroxyprogesterone Acetate (DMPA) is a contraceptive with a 150mg dose administered every three months by injection via intramuscular. The mechanism is to prevent ovulation by thickening the cervical mucus resulting in the endometrium being non-optimal for implantation and accelerating ovum transport inside the fallopian tube. One of The side effects of contraception using DMPA is the disruption of the menstrual cycle. Primary health data in 2018 shows that quarterly injected contraceptives as the most used contraception (42,2%). The research goal is to analyze the effects of DMPA on the instability of the menstrual cycle of KB acceptors by injection in the Cikulur public health center workspace year 2022.
Methods: The research is a form of analytical approach using the cross-sectional research method done in November 2022. The population of this research consists of quarterly KB acceptors in the Cikulur public health center consisting of 1.646 people. The sampling method used is an accidental sampling technique of 94 people. The instrument of this research is a questionnaire. The data analytic used is chi-square.
Result: This research shows there is a relationship between age and the instability of the menstrual cycle with a p-value of 0,000; occupation with the instability of the menstrual cycle with a p-value of 0,006; the duration of use with the instability of the menstrual cycle with a p-value 0,000; medical history with the instability of menstrual cycle with a p-value 0,000; and lastly re-injection compliance with the instability of menstrual cycle with a p-value 0,000.
Conclusion: There is a relationship between age, occupation, duration of use, and re-injection compliance with the instability of the menstrual cycle. A piece of advice for acceptors, the result of this research could be regarded as informational material on the side effects that might occur under the usage of KB injection by DMPA.

Keywords:
DMPA, instability of menstrual cycle, KB acceptors by injection

INTRODUCTION

Indonesia is one of the developing nations on the Asian continent that confronts numerous challenges. This problem includes the population sector, specifically the extremely high population growth rate. Efforts are made to control the fertility rate in order to reduce the rate of population growth. The Indonesian government has utilized the Family Planning (KB) program administered by the National Population and Family Planning Agency (BKKBN) to exert pressure on the rate of population growth. This is accomplished through the administration and implementation of family planning to control the birthrate. In essence, the family planning program is a national development program with the objective of moderating birth rates in order to foster the

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development of prosperous families. Increased community participation in the administration of family planning programs in the field of development has elevated family planning to a strategic sector that is vital to the success of regional and national development (1).

Maternal mortality due to risk 4 Too, namely too young to give birth (under 21 years old), too elderly to give birth (over 35 years old), too close spacing of births (under 3 years), and too many children (more than 2 children), contributes to population growth and births. The percentage of mothers who give birth to children between the ages of 20 and 35 accounts for 33% of all maternal deaths; therefore, 33% of deaths can be prevented with contraception if the family planning program is correctly implemented (2).

Contraceptive use is increasing in Latin America and Asia, but decreasing in sub-Saharan Africa, according to World Health Organization (WHO) data pertaining to health monitoring for the purpose of sustainable development. Overall, the rate of modern contraceptive use increased marginally, from 54% in 1990 to 57% in 2015. In the 2008-2015 period, the proportion of women aged 15 to 49 who used modern contraceptives increased slightly or continued to decline globally, from 23.6% to 28.5%; in Asia, it increased slightly from 60.9% to 61.8%; and in the Caribbean and Latin America, it tended to remain stable at 66.7% (3).

According to 2018 Riskesdas data, the percentage of mothers aged 10 to 54 who use family planning after delivery varies depending on the time of family planning and delivery services (7.3%), after giving birth but not returning to a health facility (5.2%), after returning from a health facility for medical treatment up to 42 days postpartum (20%), and after 42 days postpartum (67.5%). In terms of contraception type, the 3-month injectable birth control had the greatest usage rate (42,2%), while the IUD/IUD and IUD had the highest usage rate (6,6%) (4).

The most prevalent method of contraception is hormonal contraception, which is administered via implants, injections, and orally (5). Hormonal contraception is regarded as one of the most effective, but hormonal birth control pills, particularly those containing progestin, can cause menstrual pattern alterations. These changes are unpredictable and differ for each woman based on the contraceptive method she uses. In the majority of users, the incidence of infrequent and irregular bleeding or hemorrhage outside of the menstrual cycle, cycle lengthening, oligomenorrhea, and even amenorrhea is on the rise (5).

Injectable family planning is one of the effective family planning alternatives and components of the national family planning program. Injectable contraceptives of 1 month and 3 months duration are among the most effective contraceptive methods, do not interfere with intimate or sexual relations, are secure, and have a high chance of recovery. A acceptable contraceptive method must be dependable, safe, simple, inexpensive, widely accepted, and widely used for an extended period of time, but to date, no contraceptive method has been discovered that is truly 100 percent effective (6).

DMPA (Depot Medroxy Progesterone Acetate), which is derived from the natural hormone progesterone, is the most commonly used modern method of birth control. 150 mg of DMPA is administered every three months. The purpose of the DMPA performance procedure is to prevent ovulation, thicken cervical mucus, render the endometrium unsuitable for implantation of a fertilized egg, and accelerate the egg's voyage to the fallopian tube (7).

Akbar *et al.* (8) found that many acceptors opted for this form of injectable birth control due to its efficiency and effectiveness. Injections of DMPA are safe, can be administered to all women of reproductive age, and are appropriate for nursing

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mothers because they have no effect on milk production.

Many acceptors chose this form of injectable contraception due to its efficacy and effectiveness. Injections of DMPA are safe, can be given to all women of reproductive age, and are suitable for nursing mothers as they have no affect on milk production (9).

Injectable contraception has both benefits and drawbacks. Menstrual disorders such as amenorrhea, headaches, menorrhagia, and spotting, a delayed return of fertility after discontinuing use, and weight gain are disadvantages. During the first month of injection, menstrual irregularities frequently occur. After 1 to 2 years of injection, the majority of women develop amenorrhea (8).

Menstruation is defined as hemorrhaging resulting from the loss of the uterine lining (endometrium) (10). This bleeding occurs routinely, and the interval between periods is known as the menstrual cycle. On average, a woman's menstrual cycle lasts about 28 days. The first day of the menstrual cycle is the first day of the first menstrual period. No woman can escape normal menstrual cycles, but life changes can cause anxiety, particularly if menstrual cycles become longer, more frequent, irregular, or nonexistent (11).

An essential cause of infertility is irregular menstrual cycles. Ovulatory dysfunction accounts for ten to twenty-five percent of cases of female infertility. Anovulation and amenorrhea result from disorders caused by extreme stress. Up to two-thirds of hospitalized women with functional hemorrhage are over the age of 40, while only 3% are under the age of 20 (12).

The menstrual cycle is affected by the duration of injectable contraception use. The longer someone uses DMPA, the shorter their menstrual period, even if they do not menstruate. DMPA's progestogen component is responsible for the variation in menstrual cycles. This change is consistent with decreased menstrual blood volume in DMPA recipients (13).

Desitha's research titled "Factors that influence menstrual cycle irregularities in 3-month injection birth control acceptors in Teungoh Drien Gogo Village, Padang Tiji District in 2019" found a correlation between maternal age, duration of use, history of comorbid diseases, and injection compliance with menstrual cycle disorders, 3-month injectable family planning acceptors. (9)

Injections of DMPA are advantageous because they are simple, comfortable, and highly effective. Menstrual abnormalities such as amenorrhea, mottling, frequency, changes in cycles, amount of blood that is expelled, and duration of menstruation are the primary concomitant effects of DMPA contraception. These contraceptives contain progesterone, a similar hormone to the implant, but have a different influence on menstrual irregularities (14). This is consistent with the theory developed by Wenang and Noviana, which states that implantable contraceptives are associated with fewer complaints of menstrual irregularities than DMPA injectable contraceptives (5).

According to the 2020 Lebak Regency DP2KBP3A Basic Development Data, there are 15,220 new PUS and 299,987 active PUS. There are 45,003 new acceptor data and 211,231 active acceptor data for family planning. IUD: 893; MOP: 5; MOW: 236; implant: 3,203; injection: 27,906; PIL: 11,858; and condom: 908. In the meantime, the number of active acceptors for MOP 2,176, condom 3,425, MOW 2,512, IUD 10,287, Implant 29,880, Injection 104,878, and PIL 48,064 is as follows: MOP 2,176, condom 3,425, MOW 2,512, IUD 10,287, Implant 29,8 (15).

According to data from the Cikulur Health Center for October 2022, there were 2,117 PUS in the Cikulur Health Center area, with 130 participants using condoms, 138 pills, 1,646 injections, 16 IUDs, 187 implants, MOW 0, and MOP 0.

The results of a preliminary survey conducted by researchers at the Cikulur

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Health Center UPTD revealed that 12 of 15 mothers who used 3-month injection contraceptive methods reported irregular or altered menstrual patterns, while 3 mothers reported normal menstrual cycles. The researchers were inspired to conduct research with the title "The Influence of DMPA on Menstrual Cycle Irregularities in Injecting Family Planning Acceptors in the Working Area of the Cikulur Health Center in 2022" after reading the preceding background information.

METHODS

This research is a descriptive analytic study employing a cross-sectional design to describe the effect of age, occupation, duration of use, history of concomitant ailments, and repeat injection adherence on menstrual cycle irregularities in injecting family planning acceptors. Data was collected from November 16 through November 30, 2022. The population in this study was comprised of 1,646 Cikulur Health Center employees who accepted DMPA injectable birth control. A random sample of 94 individuals was used to determine the method of sample collection. The instrument for research was a confidential questionnaire. This researcher's primary data collection method was a questionnaire, and the results were analyzed using univariate and bivariate statistics. Using the SPSS application, bivariate data were analyzed using the Chi Square test with a confidence level of 95%. The relationship is statistically significant when the p value is less than =0.05. This study was conducted at the Cikulur Health Center in the Cikulur District of the Lebak Regency in Banten Province. The sub-district territory of Cikulur is 66.06 ha in size. Cikulur District is bordered by Warunggunung District, Cimarga District, and Baros District, all of which are subdistricts within the Lebak Regency. The Cikulur Health Center serves seven villages and has a male population of 15,110 and a female population of 14,094, as well as 2,117 PUS and 2,117 active family planning acceptors.

RESULTS

Univariate analysis

Table 1: Respondent Distribution Based on Menstrual Cycle Irregularities

Menstrual Cycle Irregularities	Total	Percentage
Regular	61	64,9
Irregular	33	35,1
Total	94	100.0

According to Table 1, there were 61 people (64.9%) who had regular menstrual patterns compared to 33 people (35.1%) who had irregular menstrual patterns. It is safe to assume that the majority of responders had regular menstrual cycles.

Table 2. Distribution of Respondents by Age

Age	Total	Percentage
At risk	42	44,7
No risk	52	55,3
Total	94	100,0

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Table 2 shows that respondents who are at risk are fewer in number, with 42 persons (44.7%) compared to 52 people (55.3%). As a result, the majority of respondents are of the same age. There is no danger.

Table 3. Distribution of Respondents Based on Employment Status

Job Status	Total	Percentage
Work	39	41,5
Doesn't work	55	58,5
Total	94	100.0

Table 3 illustrates that there are fewer respondents who work, 39 (41.5%), than respondents who do not work, 55 (58.5%). Thus, it can be concluded that the majority of respondents are unemployed.

Table 4. Distribution of Respondents Based on Length of Use

Length of Use	Total	Percentage
Short	55	58,5
long	39	41,5
Total	94	100.0

Table 4 demonstrates that there were more respondents in the short use category, a total of 55 people (58.5%), than in the extended use category, a total of 39 people (41.5%). Therefore, it can be concluded that the majority of respondents fell into the category of brief use.

Table 5 Distribution of Respondents Based on History of Concomitant Diseases

History of co-morbidities	Total	Percentage
Yes	20	21,3
No	74	78,7
Total	94	100.0

Table 5 demonstrates that respondents with a history of comorbidities numbered fewer than respondents without a history of comorbidities, namely 74 individuals (78.7%). Therefore, it can be concluded that the majority of respondents did not have a medical history.

Table 6. Distribution of Respondents Based on Re-Injection Compliance

Re-Injection Compliance	Total	Percentage
Obey	57	60,6
Not Obey	37	39,4
Total	94	100.0

Table 6 demonstrates that more respondents were compliant with repeat injections, namely 57 individuals (60.6%), than those who were not compliant, namely 37 individuals (39.4%). Therefore, it can be concluded that the majority of respondents adhered to the re-injection protocol.

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Bivariate Analysis

Table 7. Effect of Age on Menstrual Cycle Irregularities

Age	Menstrual Cycle Irregularities				Total		OR	P Value
	Regular		Irregular					
	n	%	N	%	N	%		
At risk	19	45,2	23	54,8	42	100.0	0.197 (0.078-0.493)	0,000
No risk	42	80,8	10	19,2	52	100.0		
Total	61	64,9	33	35,1	94	100.0		

According to the statistical test, age has an effect on menstrual irregularities with a p-value of 0.000 0.05, as shown in the table above. 23 respondents in the at-risk age group (54.8%) experienced menstrual irregularities, as opposed to 10 respondents in the non-at-risk age group (19.2%) who experienced menstrual irregularities. The results of this study demonstrate that age influences menstrual irregularities with a p-value of 0.000, indicating that age influences menstrual irregularities, and an odd ratio (OR) value of 0.197, indicating that the age group at risk is 0.197 times more likely to experience menstrual irregularities than the age group that is not at risk.

Table 8. Effect of Work on Menstrual Cycle Irregularities

Job	Menstrual Cycle Irregularities				Total		OR	P Value
	Regular		Irregular					
	n	%	n	%	N	%		
Work	19	48,7	20	51,3	39	100.0	0,294 (0,121-0,712)	0.006
Doesn't work	42	76,4	13	23,6	55	100.0		
Total	61	64,9	33	35,1	94	100.0		

A p-value of 0.006 0.05 indicates in Table 8 that work has an effect on menstrual irregularities, as determined by statistical analysis. Twenty (51.3%) more respondents who worked than respondents who did not work experienced menstrual irregularities, according to the table above. The results of this study indicate that work has an effect on menstrual irregularities, with a p-value of 0.006 indicating that work does have an effect on menstrual irregularities and an odds ratio (OR) of 0.294 indicating that working mothers have a 0.294 increased risk of experiencing menstrual irregularities.

Table 9. The Effect of Duration of Use on Menstrual Cycle Irregularities

Length of Use	Menstrual Cycle Irregularities				Total		OR	P Value
	Regular		Irregular					
	n	%	n	%	N	%		
Short	48	87,3	7	12,7	55	100.0	13,714 (4,870-38,623)	0.000
Long	13	33,3	26	66,7	39	100.0		
Total	61	64,9	33	35,1	94	100.0		

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Table 9 demonstrates that statistical analyses indicate a relationship between duration of use and menstrual irregularities with a p-value of 0.000 0.05. 26 respondents (66.7%) in the long usage category encountered menstrual irregularities, compared to 7 respondents (12.7%) in the short usage category, as shown in the table above. The results of this study's analysis indicate that the duration of DMPA injection contraception use has an effect on menstrual irregularities, with a p-value of 0.000, indicating that there is an effect of duration of use on menstrual irregularities, and an odd ratio (OR) value of 13.714, indicating that the use of DMPA injection contraception in the older category is associated with a 13.714-fold increased risk of experiencing menstrual irregularities.

Table 10. The Effect of History of Concomitant Diseases on Menstrual Cycle Irregularities

History of co-morbidities	Menstrual Cycle Irregularities				Total		OR	P Value
	Regular		Irregular					
	n	%	n	%	N	%		
Yes	3	15,0	17	85,0	20	100.0	0,049 (0,013-0,187)	0.000
No	58	78,4	16	21,6	74	100.0		
Total	61	64,9	33	35,1	94	100.0		

According to the results of statistical analyses, Table 10 demonstrates that a history of comorbidities has an effect on menstrual irregularities with a p-value of 0.000 0.05. 17 individuals (85.0%) had a history of concomitant diseases, more than respondents who did not have a history of accompanying diseases, specifically 16 individuals (21.6%), who experienced menstrual irregularities. The results of this study's analysis indicate that a history of co-morbidities has an effect on menstrual irregularities with a p-value of 0.000, indicating that there is an effect of a history of co-morbidities on menstrual irregularities, and for an odds ratio (OR) value of 0.049, indicating that mothers with a history of co-morbidities are 0.049 times more likely to experience menstrual irregularities.

Table 11. The Effect of Re-Injection Compliance on Menstrual Cycle Irregularities

Re-Injection Compliance	Menstrual Cycle Irregularities				Total		OR	P Value
	Regular		Irregular					
	n	%	n	%	N	%		
Obey	47	82,5	10	17,5	57	100.0	7,721 (2,979-20,016)	0.000
Not obey	14	37,8	23	62,2	37	100.0		
Total	61	64,9	33	35,1	94	100.0		

Statistical analyses reveal, as shown in Table 11, that adherence to repeated injections has an effect on menstrual irregularities with a p-value of 0.000 0.05. Menstrual irregularities were encountered by 23 respondents (62.2%) who were noncompliant with repeat injections, compared to 10 respondents (17.5%) who were compliant with repeat injections. A p-value of 0.000 indicates that adherence to repeated injections has an effect on menstrual irregularities, and an odds ratio (OR) of 7.721 indicates that mothers who are not compliant with repeat injections are 7.721 times more likely to experience menstrual irregularities.

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DISCUSSION

Relationship Between Age and Menstrual Cycle Irregularities

Results The analysis of the data in table 7 regarding the correlation between age and menstrual cycle irregularities at the Cikulur Health Center reveals a significant correlation between age and menstrual cycle irregularities, with a p-value of 0.000. In this study, the odds ratio (OR) for the closeness of the relationship between the independent and dependent variables was 0.197, indicating a strong positive relationship. This indicates that respondents in the age group at risk are 0.197 times more likely to experience menstrual irregularities than respondents in the age group not at risk.
This is consistent with the theory of Sihite & Siregar (7) dan Desitha (9) that the use of DMPA injection contraception in individuals over the age of 35 has a significant impact on menstrual patterns. The cause is hormonal contraceptives that inhibit ovarian function and prevent the production of egg cells. It takes longer for contraceptive-using women to attain menopause. The female hormone progesterone changes with age, and the luteal phase is uncommon, which results in decreased estrogen, impaired exchange of fundamental substances for lipid metabolism, loss of hypothalamic control, and a diminished uterus. The production of progesterone maintains the uterus. Reduced corpus luteum, insufficient progesterone secretion, and endometrial wall thinning result in polymenorrhea. This study is consistent with Desitha's conclusion that there is a correlation between maternal age and menstrual cycle abnormalities in recipients of three-month injection contraception (9).

Relationship Between Occupation And Menstrual Cycle Irregularities

Results The correlation between work and menstrual cycle irregularities is significant, with a p-value of 0.006. In this study, the odds ratio (OR) for the closeness of the relationship between the independent and dependent variables was 0.294, indicating a strong positive relationship. This indicates that respondents who are employed are 0.294% more likely to experience menstrual irregularities than those who are not. Menstrual disorders are not an exception to the importance of studying menstrual disorders in female workers, as they are also exposed to hazards in the workplace that can induce reproductive health problems. Menstrual irregularities are also associated with occupational stress. Stress at work can stimulate the hypothalamus and cause irregular menstruation (16). This study's findings are consistent with those of Herlitawati's study, which discovered that the use of DMPA for contraception among working women had a significant effect on menstrual patterns. The hypothalamus loses control, emotions intensify, and hormones become erratic. Typically induced by adrenal cortex and thyroid endocrine disorders (17).

Relationship Between Prolonged Use and Menstrual Cycle Abnormalities

Results The correlation between duration of use and menstrual cycle irregularities at the Cikulur Health Center has a p-value of 0.000, as shown in table 9. In this study, the odds ratio (OR) for the closeness of the relationship between the independent and dependent variables was 13,714, indicating a strong positive relationship. This indicates that respondents who use injectable DMPA family planning in the ancient category are 13.714 times more likely to experience menstrual irregularities than those who use DMPA injection in the short category. Sinaga found a significant correlation between the duration of 3-month injection contraceptive use and menstrual disorders in BPS D Purba, Girsang Village, as demonstrated by Chi-square = 0.05 analysis of the data. p = 0.003 is the result of the chi-square test (18)

Meilinda and Yanti (19) found a correlation between duration of DMPA injection contraceptive use and menstrual disorders, with a square-test p-value of 0.039 (p 0.05). The results of the current study are also

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consistent with those of Meilinda and Yanti's study, which found a correlation between duration of DMPA injection contraceptive use and menstrual disorders. OR = 5.24, which indicates that respondents who have used DMPA injections for more than a year are more likely to experience menstrual disorders than those who have used DMPA injections for less than a year. It was determined that the duration of DMPA injection use had an effect on menstrual disorders.

This is consistent with the theory that long-term use of depo medr'oxy progesterone acetate injection contraception 3 years will result in alterations in menstrual patterns. This notion is also corroborated by Babulu et al., who found that the majority of acceptors who used DMPA injection contraceptives experienced altered menstrual cycles. Endometrial atrophy will occur as a result of prolonged use of injectable birth control containing DMP (20).

This is consistent with the theory that long-term use of DMPA injection contraception for more than three years causes alterations in menstrual patterns, as stated by Babulu et al. Long-term injection of DMPA inhibits endometrial growth and results in endometrial atrophy (20).

Relationship between co-morbidity history and menstrual cycle abnormalities

Results The correlation between the history of comorbidities and menstrual cycle irregularities at Cikulur Health Center is significant, as shown by the p-value of 0.000 in table 10. In this study, the odds ratio (OR) for the closeness of the relationship between the independent and dependent variables was 0.049, indicating a strong positive relationship. This indicates that respondents with a history of concomitant diseases are 0.049 times more likely to experience menstrual irregularities than those without a history of accompanying diseases. This is consistent with Wiarga's research, which demonstrates a correlation between co-morbidities and menstrual disorders, as indicated by a p-value of 0.027 0.05 from the Chi-square test.

DMPA can cause a variety of side effects, including hypertension, cancer, oxidative stress, changes in lipid profile and metabolism, an increased risk of obesity, an increased risk and decreased density of type 2 diabetes, an increased risk of atherosclerosis, and heart disease. Menstrual disorders are frequently associated with diseases such as cervical cancer, breast cancer, infertility, and diabetes (16).

Compliance with Re-Injection and Menstrual Cycle Irregularities

Results With a p-value of 0.000, table 11 of the Cikulur Health Center's data on repeat injection adherence and menstrual cycle irregularities demonstrates a significant correlation between repeat injection adherence and menstrual cycle irregularities. In this study, the odds ratio (OR) for the proximity of the relationship between the independent and dependent variables was 7.721, indicating a strong positive relationship. This indicates that respondents who do not adhere to recurrent injections are 7.721 times more likely to experience menstrual irregularities than those who do adhere. Using a chi-square test with a significance level of 0.000, Desitha's research demonstrated a significant relationship between injection adherence and menstrual cycle disorders. Depo Medroxy Progesterone Acetate is an injectable contraceptive administered in the buttocks/arm region and containing the progestin hormone, with routine follow-up visits every three months (14).

In other words, injection contraceptive acceptors must adhere to the injection schedule in order for DMPA injection contraception to be effective. Compliance is interpreted as an individual behavior-based action. People must initially obey the recommendations and instructions of officials without displaying any intent to act

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before they are considered compliant. Typically because they fear being punished or penalized if they do not comply. Several factors, including level of knowledge, level of education, socioeconomic and cultural aspects, influence a person's propensity to adhere to the recommendations of health professionals. In addition, medical facilities, the physical environment, and the intervention or support of medical professionals facilitate and empower behavior formation.

The theory developed by Lawrence & Green in S. T. Putri states that people with a higher level of knowledge are more likely to alter their behavior for the best than those with a lower level of knowledge because they are able to assimilate health concepts more readily. On the basis of research conducted at the Cikulur Health Center in 2022 on the effect of DMPA on menstrual cycle irregularities in injectable family planning acceptors, it can be concluded that there is an effect of the age of DMPA injectable birth control acceptors on menstrual cycle irregularities with a p-value of 0.000, that there is an influence of work on menstrual cycle irregularities with a p-value of 0.006, and that there is an effect of duration (21).

CONCLUSION

The study at Cikulur Health Center found a significant correlation between age and menstrual cycle irregularities, with a p-value of 0.000. The study also found a strong positive relationship between maternal age and menstrual cycle abnormalities in recipients of three-month injection contraception. The study also found a strong positive relationship between work and menstrual cycle irregularities, with respondents who are employed being 0.294% more likely to experience menstrual irregularities than those who are not. Prolonged use of DMPA injection contraceptive use was also found to have a significant effect on menstrual disorders, with respondents who have used DMPA injections for more than a year being 13.714 times more likely to experience menstrual irregularities than those who have used DMPA injections for less than a year. The study also found a strong positive relationship between the history of comorbidities and menstrual cycle irregularities, with respondents with a history of concomitant diseases being 0.049 times more likely to experience menstrual irregularities than those without.

Additionally, compliance with re-injection and menstrual cycle irregularities were also found to be significant, with repeat injection adherence being 7.721 times more likely to experience menstrual irregularities than those who do adhere. DMPA injection contraception requires individual compliance, with factors like knowledge, education, socioeconomic status, and medical facilities influencing behavior. Higher knowledge leads to better assimilation of health concepts. Research shows age, work, and duration affect menstrual cycle irregularities in injectable family planning acceptors.

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