

## RELATIONSHIP BETWEEN THE DURATION OF CONTRACEPTIVE IMPLANT USE AND MENSTRUAL CYCLE

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### ABSTRAK : HUBUNGAN LAMA PENGGUNAAN IMPLAN KONTRASEPSI DENGAN SIKLUS MENSTRUASI

Latar Belakang: Pelayanan keluarga berencana terbukti efektif dalam menurunkan angka kematian ibu melalui penjarakan kehamilan dan penurunan kelahiran berisiko tinggi. Data BKKBN menunjukkan peserta KB aktif di Indonesia pada tahun 2021 sebanyak 57,4%, di Provinsi Lampung 68,7%, dan di Kabupaten Lampung Barat 70% pada tahun 2022. Data Puskesmas Kebun Tebu di Lampung Barat menunjukkan bahwa 70% peserta KB dari 2.754 pengguna layanan aktif. Namun angka tersebut masih jauh dari target sebesar 75%. Pemilihan metode kontrasepsi, khususnya implan, masih relatif rendah yaitu sebesar 11,9%, karena perubahan siklus menstruasi terkait dengan kontrasepsi implan.

Tujuan: Tujuan penelitian ini adalah untuk mengetahui hubungan durasi penggunaan alat kontrasepsi implan dengan siklus menstruasi.

Metodologi Penelitian: Penelitian ini menggunakan desain penelitian kuantitatif, menggunakan pendekatan survei analitik dengan jangka waktu cross-sectional. Populasi yang diteliti adalah seluruh akseptor kontrasepsi implan di wilayah kerja Puskesmas Kebun Tebu Lampung Barat. Besar sampel terdiri dari 114 individu yang dipilih melalui teknik proporsional random sampling. Analisis statistik dilakukan dengan menggunakan uji chi-square.

Temuan Penelitian: Hasil penelitian menunjukkan bahwa sebagian besar responden (59,6%) telah menggunakan alat kontrasepsi implan selama  $\leq 1$  tahun, dan 52,6% diantaranya mengalami siklus menstruasi yang normal. Analisis statistik menghasilkan nilai p sebesar 0,003 dan rasio odds (OR) sebesar 3,438.

Kesimpulan: Terdapat hubungan antara lama penggunaan alat kontrasepsi implan dengan siklus menstruasi.

Kata Kunci: Durasi Pemakaian Implan Kontrasepsi, Siklus Menstruasi.

### ABSTRACT

Background: Family planning services have proven effective in reducing maternal mortality rates by spacing pregnancies and decreasing high-risk births. BKKBN data indicates that the active family planning participants in Indonesia in 2021 were 57.4%, in Lampung Province 68.7%, and in West Lampung Regency 70% in 2022. Data from Kebun Tebu Health Center in West Lampung shows that 70% of family planning participants out of 2,754 service users are active. However, this number still falls short of the target of 75%. The selection of contraceptive methods, specifically implants, remains relatively low at 11.9%, due to the menstrual cycle changes associated with implant contraception.

Objective: The aim of this study is to determine the relationship between the duration of contraceptive implant usage and the menstrual cycle.

Research Methodology: This study employs a quantitative research design, utilizing an analytical survey approach with a cross-sectional timeframe. The population of interest encompasses all contraceptive implant acceptors in the working area of Kebun Tebu Health Center in West Lampung. The sample size consists of 114 individuals, selected through proportional random sampling technique. Statistical analysis is conducted using the chi-square test.

Research Findings: The study results reveal that the majority of respondents (59.6%) have been using contraceptive implants for  $\leq 1$  year, and 52.6% of them experience normal menstrual cycles. The statistical analysis yields a p-value of 0.003 and an odds ratio (OR) of 3.438.

Conclusion: There is a correlation between the duration of contraceptive implant usage and the menstrual cycle.

Keywords: Duration of Contraceptive Implant Usage, Menstrual Cycle.

## INTRODUCTION

The population growth rate in the years 1961 to 1971 was 2.1% per year, from 1971 to 1980 it was 2.32% per year, from 1980 to 1990 it was 1.98% per year, from 1990 to 2000 it was 1.6% per year, and from 2000 to 2010 it was 1.49%. The decrease in population growth can be attributed to the implementation of the Family Planning (KB) program throughout the country. The KB services are carried out as an effort to limit the number of children in a family and to enhance the well-being and health of families (Matahari, Utami, & Sugiharti, 2018).

Family planning services have proven effective in reducing maternal mortality rates by spacing pregnancies and decreasing high-risk births. One of the factors impacting the increase in maternal mortality rates is the risk of "4 Too": being too young to give birth (<21 years old), too old to give birth (>35 years old), having births too closely spaced (<3 years apart), and having too many children (>2 children). The percentage of maternal deaths among those who gave birth under the age of 20 and over the age of 35 reached 33% of total maternal deaths. Therefore, if the KB program is well-implemented, it could potentially prevent 33% of these maternal deaths (Ministry of Health of Indonesia, 2021).

BKKBN data indicates that the active family planning participants among couples of reproductive age (PUS) in Indonesia were 67.6% in 2020, but this decreased to 57.4% in 2021. The choice of contraceptive methods in Indonesia in 2021 showed that the majority of acceptors preferred injectable contraceptives (59.9%), followed by pills (15.8%), implants (10.0%), IUD/AKDR (8.0%), MOW (4.2%), condoms (1.8%), MOP (0.2%), and MAL (0.1%) (Ministry of Health of Indonesia, 2022). Based on BKKBN data in Lampung Province, active family planning participants among couples of reproductive age (PUS) reached 72.4% in 2020 but decreased to 68.7% in 2021. The choice of contraceptive methods in Indonesia in 2021 indicated that the majority of acceptors preferred injectable contraceptives (64.68%), implants (14.95%), followed by pills (13.46%), IUD/AKDR (3.87%), MOW/MOP (1.85%), and condoms (1.19%) (Lampung Provincial Health Office, 2022).

The data from West Lampung Regency shows fluctuating coverage of family planning (KB) services. In 2020, active family planning acceptors reached 71.9%, decreased to 65.5% in 2021, and increased to 70% in 2022, but still did not reach the target of 75%. The selection of contraceptive methods includes injections (57.3%), implants (16.6%), pills (14.4%), IUD (7.5%), condoms (3.0%), MOW (0.9%), MAL (0.2%), and MOP (0.1%). In

terms of effectiveness, the most popular type of contraceptive method falls within the category of short-term methods, where the effectiveness rate for pregnancy control is lower compared to long-term contraceptive methods (IUD, implant, and MOW/MOP) (West Lampung Regency Health Office, 2022).

Contraceptive implants are a type of long-term contraception with a 3-year duration of action. They consist of a silastic capsule containing either 3-ketodesogestrel or levonorgestrel. Contraceptive implants are highly practical, inserted just under the skin of the upper arm through a small incision. They offer a high level of effectiveness, with their benefits becoming apparent shortly after insertion, and fertility returning quickly after removal. Other advantages include not requiring regular check-ups, being free from estrogen influence, not interfering with sexual activity, not affecting breastfeeding, and being removable at any time. However, alongside some rare side effects like headaches, acne, and weight gain, contraceptive implants can cause changes in the menstrual cycle such as spotting, polimenorrhea, and even amenorrhea (Hidayati, 2019).

The menstrual cycle is the interval between menstruations or the shedding of the inner lining of the uterus that typically occurs every 28 days in a cyclical manner. Abnormal menstrual cycles often cause discomfort, especially when menstruation becomes longer, more frequent, heavier, irregular, or painful. Changes in the menstrual cycle are also a cause of infertility, particularly due to ovulatory dysfunction, which accounts for 10-25% of female infertility cases. These changes can lead to dysfunctional bleeding, which occurs in around 3% of cases (Walyani & Purwoastuti, 2018).

These changes in the menstrual cycle are a common reason for discontinuation of contraceptive implant use. The alterations in the menstrual cycle are linked to the duration of implant usage. According to data from the Ministry of Health of Indonesia in 2020, about 61.8% of women in Indonesia have experienced irregular menstrual pattern disturbances. Additionally, data from Lampung Province in 2020 indicates that 26.92% of women with menstrual pattern disturbances attributed it to the use of contraceptive implants (Putri, 2020). This aligns with the research findings of Hartanto cited in Martini & Rachmawati (2020), indicating that the primary side effect of implants is changes in menstrual patterns experienced by up to 60% of acceptors within a year after insertion.

Changes in menstrual cycles due to long-term implant usage are caused by the strong progestagenic effect. Prolonged usage can lead to a

previously normal menstrual cycle turning into amenorrhea. This is due to the disruption of the hypothalamus-pituitary-ovary axis, where progesterone inhibits the release of luteinizing hormone (LH), leading to the suppression of secondary oocyte release from follicles and resulting in anovulation. Progesterone also affects the thickening of the endometrial lining and its secretions each cycle, which influences the menstrual pattern in women (Manuaba, 2014).

Midwives play a significant role in enhancing the acceptance of the family planning movement due to the fact that the promotion of hormonal contraception remains a key focus of the government. Midwives are preferred for this role because it requires minimal technical medical expertise, medical oversight is not complicated, and there are fewer complications. To ensure better acceptance of contraceptive implant methods within the community, it's crucial to enhance knowledge about this contraceptive device. This can lead to a better understanding among family planning acceptors, and it's hoped that complaints arising from the use of contraceptive implants can be minimized. Particularly, addressing issues related to the drawbacks of using contraceptive implants that cause disruptions in menstrual cycles due to the duration of usage (Manuaba, 2014).

A study conducted by Martini & Rachmawati (2020) on the duration of implant usage and its impact on menstrual cycles and periods in PMB Kirang Naning Amd. Keb. in the Kedali Village, Pucuk Sub-district, Lamongan Regency, showed that in univariate analysis, the menstrual cycle period for contraceptive implant acceptors who used it for 3-12 months experienced normal menstruation. On the other hand, with usage exceeding 1 year, 50% experienced amenorrhea. Bivariate analysis indicated a relationship between the duration of implant usage and the menstrual cycle (p-value=0.001).

Data from Kebun Tebu Health Center in West Lampung indicated that active family planning participants among couples of reproductive age (PUS) in 2021 reached 1,983 (75.62%) active participants out of 2,622 PUS. This number decreased to 1,928 (70%) in 2022 out of 2,754 PUS, and this figure still hasn't reached the target of 75%. The choice of contraceptive methods also showed that the majority of acceptors preferred short-term contraceptive methods, with injections (67.4%) being the most common, followed by implants (11.9%), pills (10.3%), condoms (5.0%), IUDs (3.2%), and MOW (2.3%). Based on a preliminary survey conducted by researchers in February 2023, out of 10

contraceptive implant acceptors, 8 individuals (80%) experienced irregular menstrual cycle changes, such as bleeding occurring at irregular intervals (< 21 days or > 35 days). Among those 8 individuals with irregular bleeding, 7 (87.5%) of them had been using the contraceptive implant for over 1 year.

Based on the description above, the researchers are interested in conducting a study titled "The Relationship between the Duration of Contraceptive Implant Usage and Menstrual Cycles at Kebun Tebu Health Center in West Lampung in 2023."

## RESEARCH METHODS

The research design employs a quantitative approach, using an analytical survey design with a cross-sectional timeframe. The study population consists of all contraceptive implant acceptors in the working area of Kebun Tebu Health Center in West Lampung. The sample size is 114 individuals, selected using proportional random sampling. The independent variable in this study is the duration of contraceptive implant usage, while the dependent variable is the menstrual cycle. Data collection for the variable "duration of contraceptive implant usage" will be conducted through the use of a questionnaire.

This research relies on primary data collected directly from respondents through the distribution and subsequent collection of questionnaires. The collected data will undergo processing stages including editing, coding, processing, and cleaning. Statistical analysis will involve the use of the chi-square test.

## RESEARCH RESULT

### Univariate analysis

**Table 1**  
**Frequency Distribution of Contraceptive Implant Duration**

Duration of Contraceptive Implant	Frequency	Percentage (%)
Usage ≤ 1 Year	68	59.6
Usage > 1 Year	46	40.4

Based on Table 1, it can be observed that the majority of respondents used contraceptive implants for a duration of ≤ 1 year, totaling 68 individuals (59.6%). On the other hand, respondents who used contraceptive implants for a duration of > 1 year amounted to 46 individuals (40.4%).

From Table 2, it can be observed that the majority of respondents had a normal menstrual

cycle, with 60 individuals (52.6%). Meanwhile, 54 individuals (47.4%) experienced an abnormal menstrual cycle.

**Table 2**  
**Frequency Distribution of Menstrual Cycle in Contraceptive Implant Users**  
**Bivariate Analysis**

Menstrual Cycle	Frequency	Percentage (%)
Normal	60	52,6
Abnormal	54	47,4

**Table 3**  
**Relationship Between Contraceptive Implant Usage Duration and Menstrual Cycle**

Contraceptive Implant Usage	Menstrual cycle				Total		P-Value	OR (95% CI)
	Normal		Abnormal		n	%		
	N	%	n	%				
Usage ≤ 1 Year	44	64,7	24	35,3	68	100	0.003	3,438 (1,569-7,533)
Usage > 1 Year	16	34,8	30	65,2	46	100		

Based on Table 3, out of the 68 respondents who used contraceptive implants for ≤ 1 year, 44 individuals (64.7%) had a normal menstrual cycle, while 24 individuals (35.3%) had an abnormal menstrual cycle. Similarly, among the 46 respondents who used contraceptive implants for > 1 year, 30 individuals (65.2%) experienced an abnormal menstrual cycle, and 16 individuals (34.8%) had a normal menstrual cycle.

The chi-square analysis resulted in a p-value of 0.003, which is less than the significance level  $\alpha$  ( $0.003 < 0.05$ ), leading to the rejection of the null hypothesis ( $H_0$ ). Therefore, it can be concluded that there is a relationship between the duration of contraceptive implant usage and the menstrual cycle at Kebun Tebu Health Center, West Lampung in the year 2023. Furthermore, the Odds Ratio (OR) was calculated as 3.438, indicating that respondents using contraceptive implants for > 1 year have a 3.438 times higher risk of experiencing abnormal menstrual cycles compared to those using the implant for ≤ 1 year.

## DISCUSSION

Based on the research findings, it was revealed that the majority of respondents used contraceptive implants for less than or equal to 1 year, totaling 68 individuals (59.6%). Meanwhile, respondents who used contraceptive implants for more than 1 year numbered 46 individuals (40.4%).

This research aligns with the theory proposed by Manuaba (2014), which states that contraceptive implants are a method inserted beneath the skin containing levonorgestrel to prevent pregnancy. The effectiveness of this contraception method can last for up to 3 years of usage and carries a relatively low complication rate. As stated by Hidayati (2019), the advantages of contraceptive implants include high

effectiveness, long-term protection, swift return of fertility after removal, minimal need for medical check-ups, absence of estrogen influence, no disruption to sexual activity or breastfeeding, the flexibility of removal as needed, and a reduction in menstrual blood flow and anemia risk.

This study also aligns with the research conducted by Martini & Rachmawati (2020) on the impact of implant usage duration on menstrual cycles and periods in PMB Kirang Naning Amd. Keb. Kedali Village, Pucuk Sub-District, Lamongan Regency. Their study revealed that in a univariate analysis, almost half or 48.5% of acceptors used contraceptive implants for 3 months to 1 year.

According to the researcher's perspective, the majority of respondents who used contraceptive implants for less than or equal to 1 year are likely new implant acceptors. New implant acceptors opt for this method due to various advantages, including quick restoration of fertility after removal and the ability to be removed at any time as needed. Analyzing the age range of the respondents, most fall between 20 to 35 years old, an age range conducive to pregnancy. Many individuals within this age range might still desire to have children, making the contraceptive implant an appropriate choice since it aligns with its intended purpose of spacing childbirths.

Based on the research results, it was found that the majority of respondents experienced normal menstrual cycles, totaling 60 individuals (52.6%). Meanwhile, respondents who experienced abnormal menstrual cycles numbered 54 individuals (47.4%).

This research is consistent with the theory proposed by Priyanti & Syalfina (2017), which states that menstruation involves the shedding of the endometrial lining, resulting in the discharge of blood due to the absence of fertilization of the egg by sperm

in the uterus. The menstrual cycle represents the interval between one menstruation and the next, which can vary among individuals, ranging from 21 to 35 days. According to Walyani & Purwoastuti (2018), several factors that influence changes in the menstrual cycle include hormonal imbalances. The balance of estrogen and progesterone hormones during a normal menstrual cycle adjusts the condition of the uterine lining (endometrium) to regulate menstrual bleeding. Hormonal imbalances can disrupt the menstrual cycle. Moreover, the use of contraceptives can also have side effects on menstrual cycles. Long-term use of contraceptive implants can affect the menstrual cycle.

This research also aligns with a study conducted by Putri (2020) on the relationship between contraceptive implants and menstrual cycles in women of reproductive age. The study found that the usage of contraceptive implants among women of reproductive age was 21.11%. Among women of reproductive age who used contraceptive implants, 39.89% experienced disruptions in their menstrual cycles.

According to the researcher's perspective, the majority of respondents experiencing normal menstrual cycles can be attributed to the fact that most of them have not been using contraceptive implants for a long time ( $\leq 1$  year). The short duration of contraceptive implant usage among respondents means that their hormonal systems have not been significantly impacted by the introduction of hormonal medications contained within the contraceptive implant. As a result, most respondents have not experienced significant menstrual complaints and tend to have normal menstrual cycles lasting 21 to 35 days. The normalcy of these menstrual cycles can also be influenced by other factors, such as absence of stress, normal body weight or absence of obesity, and absence of reproductive organ disorders.

Based on the results of the statistical test, it was found that there is a relationship between the duration of contraceptive implant usage and menstrual cycles at Kebun Tebu Health Center, West Lampung, in the year 2023 ( $p$ -value= 0.003). Respondents who used contraceptive implants for more than 1 year have a 3.438 times higher risk of experiencing abnormal menstrual cycles compared to users who used contraceptive implants for less than or equal to 1 year.

This research aligns with the theory proposed by Manuaba (2014), which states that menstruation is a complex interplay between the health of genital organs and hormonal stimulation, influenced by the hypothalamic-pituitary-ovarian axis. Disturbances in the menstrual cycle can arise due to abnormalities in

either of these factors. The menstrual cycle is greatly influenced by estrogen and progesterone hormones, both of which fluctuate. If there is a disruption in the balance of these hormones, it can result in irregular menstrual cycles, manifesting as longer, shorter, lighter, or heavier periods. Contraceptive implants consist of Levonorgestrel, which functions as a synthetic form of progesterone that inhibits the release of luteinizing hormone (LH), thus preventing ovulation. The presence of progesterone in contraceptive implants can lead to changes in the menstrual cycle.

This research also aligns with a study conducted by Misrina & Putri (2020) on the relationship between weight gain and changes in menstrual cycles due to the use of contraceptive implants among users at Jeunieb Health Center, Bireuen Regency. The study found a correlation between the duration of contraceptive implant usage and changes in menstrual cycles ( $p$ -value=0.04). Additionally, a study by Martini & Rachmawati (2020) on the duration of implant usage and its impact on menstrual cycles and periods in PMB Kirang Naning Amd. Keb. Kedali Village, Pucuk Sub-District, Lamongan Regency, found that 50% of users with more than 1 year of usage experienced amenorrhea, and 71.4% of users with more than 2 years of usage experienced amenorrhea. The bivariate analysis indicated a relationship between the duration of implant usage and menstrual cycles ( $p$ -value= 0.001).

According to the researcher's viewpoint, the relationship between the duration of contraceptive implant usage and menstrual cycles could be attributed to the hormonal content of the contraceptive implant, particularly Levonorgestrel, which affects the menstrual cycles of users. The long-term use of contraceptive implants can disrupt the balance between estrogen and progesterone hormones in the user's body. Physiologically, every woman has a stable hormonal composition in her body. Disruptions in menstrual cycles among contraceptive implant users occur due to hormonal imbalances caused by the presence of Levonorgestrel, which can lead to atrophy of the uterine lining and subsequently affect the menstrual cycle.

During the initial usage of contraceptive implants, the hormones within the body are still adjusting to the presence of Levonorgestrel, the hormonal component of the implant. As a result, some respondents may not yet exhibit signs of menstrual cycle disturbances. This observation is reflected in the research findings, where respondents who used contraceptive implants for less than or

equal to 1 year tended to have normal menstrual cycles (64.7%). However, with long-term usage, hormonal instability within the body becomes more apparent, leading to menstrual cycle disruptions. This is evident in the research results, where respondents who used contraceptive implants for more than 1 year tended to have abnormal menstrual cycles (65.2%). Based on the responses from the participants, those who used contraceptive implants for more than 1 year tended to experience menstrual cycle disturbances such as amenorrhea, with some respondents not experiencing menstruation for more than 3 months after using the contraceptive.

The research also found that there were respondents who used contraceptive implants for less than or equal to 1 year but had abnormal menstrual cycles (35.3%). This could be attributed to other factors such as work-related stress, as some of these respondents had jobs or were employed. Additionally, different hormonal responses could be a contributing factor, where initial usage of the contraceptive implant may lead to more frequent or heavier menstruation due to the body's adjustment to the hormonal component.

Furthermore, the research results revealed that some respondents who used contraceptive implants for more than 1 year had normal menstrual cycles (34.8%). This might be attributed to their relatively young age (20-35 years), which is considered a healthy reproductive age range. Some individuals within this age group may have stable hormonal profiles even with the addition of hormonal components from the contraceptive implant. It's important to note that hormone levels vary among individuals based on their unique characteristics, leading to differing responses to the side effects of contraceptive implant usage for each user.

## CONCLUSION

Based on the data analysis and previous discussions, it can be concluded that the majority of respondents used contraceptive implants for less than or equal to 1 year, totaling 68 individuals (59.6%), while those who used contraceptive implants for more than 1 year amounted to 46 individuals (40.4%). Furthermore, most respondents experienced normal menstrual cycles, with 60 individuals (52.6%), while those with abnormal menstrual cycles numbered 54 individuals (47.4%). The statistical analysis results indicated a significant relationship between the duration of contraceptive implant usage and menstrual cycle disturbances at Kebun Tebu Health Center, West Lampung in 2023 ( $p$ -value= 0.003, OR = 3.438).

## SUGGESTION

For healthcare professionals, especially midwives, it is recommended to gain a deeper understanding of reproductive health, particularly menstrual cycles, by reading relevant literature and seeking updated information from various sources. This knowledge will enable them to explain and provide appropriate solutions when encountering cases of menstrual irregularities attributed to contraceptive methods, especially contraceptive implants. Midwives are encouraged to promote the adoption of long-term contraceptive methods that are safer and have fewer side effects, such as contraceptive implants. The potential side effects of contraceptive implants, such as menstrual cycle disturbances, should be explained to potential users before they choose this method. Additionally, prospective contraceptive users should consider long-term methods like implants. It's crucial for them to understand the potential effects of the chosen contraceptive method, so that they don't feel concerned if they experience menstrual cycle disruptions while using a particular contraceptive method.

## REFERENCES

- Dinkes Kabupaten Lampung Barat. (2022). *Persentase Akseptor KB Kabupaten Lampung Barat 2022*. Lampung Barat: Dinas Kesehatan Kabupaten Lampung Barat.
- Dinkes Provinsi Lampung. (2022). *Profil Kesehatan Provinsi Lampung tahun 2021*. Bandar Lampung: Dinas Kesehatan Provinsi Lampung.
- Hidayati, R. (2019). *Metode dan Teknik Penggunaan Alat Kontrasepsi, Petunjuk Praktis Pemasangan Alat Kontrasepsi*. Jakarta: Salemba Medika.
- Kemendes RI. (2021). *Profil Kesehatan Indonesia Tahun 2020*. Jakarta: Kemendes RI.
- Kemendes RI. (2022). *Profil Kesehatan Indonesia Tahun 2021*. Jakarta: Kemendes RI.
- Manuaba, I. C. (2014). *Ilmu Kebidanan, Penyakit Kandungan dan Keluarga Berencana*. Jakarta: EGC.
- Martini, D. E., & Rachmawati, E. (2020). Lama Penggunaan Implant Terhadap Siklus Dan Periode Menstruasi di PMB Kirang Naning Amd.Keb. Desa Kedali Kecamatan Pucuk Kabupaten Lamongan. *SURYA Vol. 12, No. 01, April 2020*, 38-44.
- Matahari, R., Utami, F. P., & Sugiharti, S. (2018). *Buku Ajar Keluarga Berencana dan Kontrasepsi*. Yogyakarta: Pustaka Ilmu.

- Misrina, & Putri, R. A. (2020). Hubungan Peningkatan Berat Badan dan Perubahan Siklus Haid dengan Pemakaian Kontrasepsi Implant Pada Akseptor KB di Wilayah Kerja Puskesmas Jeunieb Kabupaten Bireuen. *Journal of Healthcare Technology and Medicine Vol. 6 No. 2 Oktober 2020* , 923-933.
- Notoatmodjo, S. (2014). *Metodologi Penelitian Kesehatan*. Jakarta: Rineka Cipta.
- Priyanti , S., & Syalfina, A. D. (2017). *Buku Ajar Kesehatan Reproduksi Dan Keluarga Berencana*. Surakarta: CV Kekata Group.
- Putri, A. E. (2020). Hubungan Kontrasepsi Implant Dengan Siklus Menstruasi Pada Wanita Usia Subur . *Majalah Kesehatan Indonesia Vo. 1, Issue 1, Maret 2020*, 11-14.
- Ria, L. (2017). Hubungan Jenis dan Lama Penggunaan Kontrasepsi Hormonal Terhadap Gangguan Menstruasi Pada Wanita Usia Subur Di Wilayah Kerja Poskesdes Bevdu UPTD Puskesmas Lubuk Rukam Kecamatan Peninjauan. *Publikasi Skripsi Fakultas Kedokteran Universitas Muhammadiyah Palembang*, 1-99.
- Sugiyono. (2017). *Metode Penelitian Kuantitatif, Kualitatif dan R&D*. Bandung: PT Alfabet.
- Walyani, E. S., & Purwoastuti, E. (2018). *Panduan Materi Kesehatan Reproduksi dan Keluarga Berencana*. Yogyakarta: Pustaka Baru Press.
- Yulizawati, Iryani, D., Sinta, L. E., & Insani, A. A. (2019). *Asuhan Kebidanan Keluarga Berencana*. Sidoarjo: Indomedia Pustaka.