

CORRELATION BETWEEN KNOWLEDGE AND INTEREST IN CARRYING OUT CAESAREAN DELIVERY USING THE ERACS METHOD

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ABSTRAK : HUBUNGAN ANTARA PENGETAHUAN DAN MINAT MELAKUKAN CESAR DENGAN METODE ERACS

Latar Belakang: Angka operasi caesar di Indonesia pada tahun 2018 mencapai 17,5% dari total persalinan, meningkat pada tahun 2019, angka operasi Caesar di Indonesia mencapai 40 % dari seluruh persalinan. Angka tersebut lebih tinggi dari rekomendasi WHO dan merupakan salah satu yang tertinggi di Asia Tenggara. Sebagian besar ibu hamil merasa cemas saat mendekati Hari Perkiraan Lahir yang diharapkan (HPL). Terutama ketika memiliki indikasi medis untuk operasi SC. Kebanyakan ibu hamil yang direncanakan menjalani operasi SC tersebut merasa cemas dan takut, karena masa pemulihan operasi SC lebih lama dari persalinan normal. Metode ERACS (Enhanced Recovery After Cesarean Surgery) adalah salah satu metode yang dapat mempercepat kesembuhan pasien SC, sehingga dapat dijadikan sebagai solusi dan alternatif untuk mengatasi kecemasan dan ketakutan tersebut.

Tujuan: Untuk mengetahui hubungan pengetahuan ibu hamil dengan minat untuk melakukan cesar dengan metode ERACS.

Metode: Penelitian ini menggunakan metode kuantitatif deskriptif dengan purposive sampling dengan sample 60 orang. Teknik pengumpulan data dilakukan dengan kuesioner. Data kemudian dianalisis dengan menggunakan metode univariat dan bivariat menggunakan perhitungan statistik program SPSS versi 23.

Hasil: Pasien Rumah Sakit Fatimah rata-rata memiliki pengetahuan yang sangat baik dan memiliki minat yang baik terhadap cesar dengan metode ERACS. Dan terdapat hubungan yang signifikan antara pengetahuan dan minat untuk menggunakan layanan cesar dengan metode ERACS, hal tersebut ditunjukkan dengan nilai sig p-value 0,00 lebih kecil dari 0,05 ($0,00 < 0,05$)

Kesimpulan: Terdapat hubungan yang signifikan antara pengetahuan dan minat untuk melakukan cesar dengan metode ERACS, hal tersebut ditunjukkan dengan nilai sig p-value 0,000 lebih kecil dari 0,05 ($0,000 < 0,05$)

Saran: Pihak Rumah Sakit sudah cukup intens memberikan edukasi melalui video pendek yang dishare melalui tiktok, Instagram, dan facebook, tetapi tidak boleh hanya berhenti di situ saja, pihak rumah sakit sebaiknya melakukan edukasi melalui seminar dan webinar, dengan menghadirkan expert untuk memberikan informasi kepada public tentang cesar dengan metode ERACS, supaya informasi yang diperoleh Masyarakat lebih komprehensif dan mendalam, sehingga dapat lebih memunculkan interest mereka terhadap cesar dengan metode ERACS. penelitian ini terbatas meneliti pasien Rumah Sakit Fatimah, peneliti selanjutnya disarankan untuk memperluas populasi, pasien dari dua rumah sakit atau lebih, terdiri dari rumah sakit swasta dan rumah sakit pemerintah, supaya temuan yang dihasilkan lebih kuat.

Kata Kunci : Caesar; Metode ERACS; Minat; Pengetahuan; Persalinan

ABSTRACT

Background: The cesarean section rate in Indonesia in 2018 reached 17.5%, increasing in 2019, the cesarean section rate in Indonesia reached 40% of all births. This figure is higher than WHO recommendations and is one of the highest in Southeast Asia. Most pregnant women feel anxious when approaching their expected due date (HPL). Especially when there is a medical indication for SC surgery. Most pregnant women who are planning to undergo SC surgery feel anxious and afraid because the recovery period for SC surgery is longer than normal delivery. The ERACS (Enhanced Recovery After Cesarean Surgery) method is a method that can speed up the recovery of SC patients, so it can be used as a solution and alternative to overcome anxiety and fear.

Purpose: To determine the relationship between pregnant women's knowledge and their interest in performing cesarean section using the ERACS method.

Method: This study used descriptive quantitative method with purposive sampling with a sample of 60 people. Data collection techniques were carried out by questionnaire. The data were then analyzed using univariate and bivariate methods using statistical calculations of the SPSS version 23 program.

Results: Fatimah Hospital patients on average have very good knowledge and have a good interest in cesarean delivery using the ERACS method. There is a significant relationship between knowledge and interest in using cesarean services using the ERACS method, this is indicated by a sig p-value of 0.00 which is smaller than 0.05 ($0.00 < 0.05$)

Conclusion: There is a significant relationship between knowledge and interest in doing cesarean with the ERACS method, this is indicated by a sig p-value of 0.000 less than 0.05 ($0.000 < 0.05$).

Suggestion: The hospital has been quite intense in providing education through short videos shared through TikTok, Instagram, and Facebook, but it should not stop there, the hospital should conduct education through seminars and webinars, by presenting experts to provide information to the public about cesarean with the ERACS method, so that the information obtained by the public is more comprehensive and in-depth, so that it can further raise their interest in cesarean with the ERACS method. This study was limited to examining Fatimah Hospital patients, future researchers are advised to expand the population, patients from two or more hospitals, consisting of private hospitals and government hospitals, so that the findings produced are stronger.

Keywords : Caesar; ERACS method; Interest; Knowledge; Labor.

INTRODUCTION

Cesarean section is a surgical procedure in which the baby is born through an incision in the mother's abdominal wall and uterus. This procedure is performed if normal delivery is not possible or unsafe for the mother or baby. The cesarean section procedure involves an incision in the mother's abdominal wall and uterus. After the incision is made, the baby can be removed through the abdominal and uterine incision. After that, the placenta is also removed and the incision is stitched back (Usman, 2022).

According to data from the World Health Organization (WHO) in 2015, the caesarean section rate worldwide reached 18.6%, an increase from 12% in 2000. This figure is higher than the WHO recommendation, namely 10-15% of total births. (2). The number of cesarean section operations in the world does not show any decline. This figure even increases from year to year. As many as 20% of pregnant women in the world give birth by cesarean section (Humaira et al., 2022). Meanwhile, based on data from the Indonesian Ministry of Health, the number of cesarean sections in Indonesia in 2018 reached 17.5% of total births (Mustikaningrum et al., 2023), increasing in 2019, the number of Caesarean sections in Indonesia reached 40% of all births (Amir, 2020). This figure is higher than WHO recommendations and is one of the highest in Southeast Asia

Some of the causes of the high number of cesarean sections in Indonesia are, First, experience or trauma from previous births, some pregnant women who have had experience or trauma from previous births feel afraid or anxious about having a

normal birth again and prefer to have a cesarean section. Second, cesarean operations can be planned. in advance to provide certainty to pregnant women regarding their delivery schedule, which can be one of the motivations for choosing a Caesarean section. Third, the desire for control over the delivery schedule, illness, or medical condition. Some pregnant women with certain medical conditions, such as heart disease or hypertension, may be more choose to have a cesarean section to reduce the risk of complications during labor. Fourth, social and cultural factors: In some societies, cesarean section is considered more modern and avoids the pain and injury to the genital area that usually occurs in normal childbirth. This can be a motivation for pregnant women to choose a Caesarean section (Kusumah, 2023)

Cesarean section carries certain risks. The following are some of the risks that can be associated with a Caesarean section, namely (1) infection: A Caesarean section requires an incision in the abdominal wall and uterus, thereby increasing the risk of infection in the patient. Infection can occur in surgical wounds, internal organs, and the area around the surgical wound (Anggraeni et al., 2020). (2) Bleeding: Caesarean section requires an incision in the abdominal wall and uterus, thereby increasing the risk of bleeding in the patient. Bleeding may occur during surgery or after surgery (Siagian et al., 2023). (3) Injury to other organs, during surgery, doctors can damage other organs around the uterus, such as the bladder, intestines, or urinary tract (Soesilawati, 2020). (4) Complications of anesthesia, use of general anesthesia or epidural during cesarean section can cause complications such as low blood

pressure, nausea, vomiting, headaches, or difficulty breathing (Widiastuti et al., 2022). (5) Future pregnancy complications. If a pregnant woman undergoes a cesarean section, the risk of future pregnancy complications, such as ectopic pregnancy or placenta previa, can also increase (Tanuwijaya & Susanto, 2022).

Most pregnant women feel anxious when approaching their expected due date (HPL). Especially when there is a medical indication for SC surgery. Most pregnant women who are planning to undergo SC surgery feel anxious and afraid because the recovery period for SC surgery is longer than normal delivery (Ruswantriani, 2021)

However, the impact of advances in information technology means that pregnant women can access literacy regarding the various cesarean section methods offered by the hospital (Meo & Ganika, 2022), which differ from each other, especially in terms of fast or slow recovery after surgery. One of the SC methods that is currently popular is the ERACS (Enhanced Recovery After Cesarean Surgery) method.

ERACS is a development of ERAS (Enhanced Recovery After Surgery) in the field of digestive surgery. ERACS consists of optimizing perioperative, intraoperative, and postoperative care. ERACS is considered to have advantages such as a surgical process that is more comfortable and causes less pain, as well as having the advantage of a faster post-operative recovery process compared to conventional methods. In the ERACS method, patients after cesarean section can sit comfortably after 2 hours after surgery and can do light activities in less than 24 hours.

One of the hospitals in Banten Province that uses the ERACS method is Fatimah Hospital which is located in Taktakan District, Serang City. Fatimah Hospital, Serang City, began operating in 2016. Based on preliminary studies conducted by researchers, Fatimah introduced the ERACS method to the people of Serang City in 2020 and has become popular with patients since 2021.

Many studies related to ERACS have been carried out by previous researchers, such as (Humaira et al., 2022), (Lama et al., 2022), (Nurul et al., 2023), (Tika et al., 2022), and (Warmiyati & Ratnasari, 2022), but none of the studies above have discussed the topic of the relationship between maternal knowledge and interest in giving birth using the ERACS method.

Based on the background description above, the researcher is interested in conducting research with the title Relationship between Pregnant Women's Knowledge about Accelerated Recovery

after SC Surgery and interest in giving birth using the ERACS method.

RESEARCH METHODS

This research uses descriptive quantitative methods, the materials used in this research are three questionnaires, namely the respondent characteristics questionnaire, the respondent's knowledge questionnaire, and the respondent's interest questionnaire. The population in this study was 175 patients who had delivered using the ERACS method. The sampling technique used was purposive sampling, calculating the sample size using the Slovin formula. (18), as follows:

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

Information:

N = Number of population

n = Number of samples

e = The relative determination set by the researcher is an error tolerance or margin of error of 0.5% (0.05).

So, the sample in this study is:

N = 175

d = 0.05

$$n = \frac{175}{1 + (175 (0,10)^2)}$$

$$n = \frac{175}{2,91}$$

n = 60

So 60 respondents were obtained.

This research was conducted at Fatimah Hospital, Drangong Village, Taktakan District, Serang City, Banten Province, from July to November 2023. Questionnaires were distributed to 60 patients who had undergone Caesarean using the ERACS method. The data obtained was then analyzed using frequency distribution and Chi-Square tests using SPSS Version 23 software.

RESEARCH RESULTS

Below are the results of the frequency distribution of 60 respondents, including (1) Respondent characteristics based on mother's age, (2) Respondent characteristics based on education, (3) Respondent characteristics based on baby's gender, (4) Respondent characteristics based on baby's birth age (5) Knowledge, and (6) Interests.

Table 1
Respondent Characteristics

Characteristics	n (%)	
	F	%
Age of Respondents (years old)		
17-25 years old	17	28.3
26-35 years old	43	71.7
36-45 Years	-	-
Respondent's Education		
Junior high school	-	-
Senior High School	13	21.7
Diploma	23	38.3
Bachelor	24	40.0
Baby's Birth Age		
36 Weeks	3	5.0
37 Weeks	23	38.3
38 Weeks	19	31.7
39 Sunday	15	25.0
Baby Gender		
Man	23	38.3
Woman	37	61.7
Knowledge		
Very low	-	-
Low	-	-
Enough	7	11.7
Good	37	61.7
Very good	16	26.7
Interest		
Very low	-	-
Low	-	-
Enough	16	26.7
High	29	48.3
Very high	15	25.0

Source: SPSS Data 2023

Table 1 above shows that 17 respondents or 28.3% came from mothers aged 17-25 years, and 43 respondents or 71.7% came from mothers aged 26-35 years, thus the respondents were dominated by mothers aged 26-35 years. 13 respondents or 21.7% came from a high school education background, 23 respondents or 38.3% came from a diploma education background, and 24 respondents or 40.0% came from a bachelor's education background, thus the respondents were dominated by respondents with a behind undergraduate education. 3 respondents or 5.0% came from mothers with a birth age of 36 weeks, 23 respondents or 38.3% came from mothers with a birth age of 37 weeks, 19 respondents or 31.7% came from mothers with a birth age of 38 weeks 15 respondents or 25.0% came from mothers with a birth age of 39 weeks. Thus, the respondents were dominated by mothers with a birth age of 37 weeks. 23 respondents or 38.3% came from mothers whose babies were male, and 37 respondents, or 61.7% came from mothers whose babies were female, so the respondents were dominated by mothers whose babies were female.

The table above also shows that 7 or 11.7% of respondents have moderate knowledge, 37 or 61.7% of respondents have high knowledge, and 16 or 26.7% of respondents have very high knowledge. while 16 or 26.7% of respondents have sufficient interest, 29 or 48.3% of respondents have good interest, and 15, or 25% of respondents have very good interest.

Table 2.
Relationship between Knowledge and Interest in Cesarean Delivery
with the ERACS Method

Variable		Knowledge			Total	P-Value
		Simply	High	Very high		
Interest	Simply	5	11	0	16	0,000
	High	2	22	5	29	
	Very high	0	4	11	15	

Source: SPSS Data 2023

Based on Table 2 above, it is shown that 5 respondents who have moderate knowledge also have moderate interest, while 2 respondents who have simply knowledge have high interest. 11 respondents who have high knowledge have moderate interest, 22 respondents who have high knowledge also have high interest, while 4 people who have high knowledge have very high interest. 5

respondents who had very high knowledge had high interest, while 11 people who had very high knowledge also had very high interest.

Results of Chi-Square testing in Table 2 above shows that the P-Value or Asymp. Sig (2-sided) is 0.000, smaller than 0.05 ($0.000 < 0.05$), so it can be concluded that knowledge has a positive and significant relationship with Fatimah Hospital

patients' interest in giving birth using the ERACS method.

DISCUSSION

Fatimah Hospital patients have very good knowledge about cesarean section using the ERACS method. This knowledge includes cesarean services using the ERACS method, types of cesarean services using the ERACS method, procedures/processes for purchasing cesarean services using the ERACS method, procedures/processes for carrying out cesarean services using the ERACS method, benefits of cesarean services using the ERACS method, feelings of comfort during cesarean operations using the ERACS method, reduced postop pain, sitting 2 hours after cesarean section using the ERACS method, activity faster after cesarean section using the ERACS method.

This is shown by the univariate test results of all respondents' answers, for the question of cesarean services using the ERACS method in hospitals, the total number of respondents who answered neutral was 16, the total number of respondents who answered agree was 29, and the total number of respondents who answered strongly agreed was 15. After A Likert scale calculation was carried out, the respondent's knowledge level was 83%, including the very high/very good category

The results above show that the literacy of pregnant women is very good/high, this result is in line with research results (Delanoë et al., 2016), which state that health literacy in pregnant women is high. The measurement instruments used are S-TOFHLA as an objective tool and BLHS as a subjective tool. Research results (Sheinis et al., 2018) stated that the group of mothers aged < 35 years received health information via the Internet (93.9%), doctors (71.2%), television, family/friends, and books.

The results of this study are in line with research (Sutrisno et al., 2023) which shows that the patients who were used as respondents had very good knowledge, of the 75 respondents 41 (54.70%) of them had very good knowledge about early mobilization after cesarean section. Also in line with research (Nurfutriani, 2017), which shows that 16 of the total respondents amounting to 34 people have very good knowledge about post-cesarean section

Fatimah Hospital patients on average have a high/good interest in having a cesarean section using the ERACS method. These interests include interest in using cesarean services with the ERACS method before surgery, using cesarean services with the ERACS method during surgery, using cesarean

services with the ERACS method after surgery, recommending cesarean services with the ERACS method to colleagues and family, good testimonials about cesareans with ERACS method from colleagues who have used cesarean services using the ERACS method, good testimonials about cesarean services using the ERACS method from hospital patients who have used cesarean services using the ERACS method, choosing cesarean services using the ERACS method over cesarean services using the conventional method, because they feel comfortable during the operation process, and recover more quickly after surgery, and seek services regarding the correctness of the ERACS method.

The above is shown univariate test results of all respondents' answers. the total number of respondents who answered neutral was 16, the total number of respondents who answered agree was 29, and the total number of respondents who answered strongly agreed was 15. Regarding the question of interest in using cesarean services with the ERACS method before surgery, the level of interest of respondents was 79.99%, number 79, 99% is in the range of 60% - 79.99%, meaning that the respondent's interest is in the high/good category

The high interest in using Caesarean services using the ERACS method is due to several factors, (1) concerns regarding normal delivery: Some pregnant women feel anxious or afraid of the normal delivery process for various reasons, such as uncertainty about pain, worry about complications, or previous negative experiences. (2) discomfort or concern about pain: Some pregnant women feel more comfortable or more in control of the situation by choosing a cesarean section to avoid the pain associated with vaginal delivery. (3) Acceleration of recovery after delivery, and (4) recommendations from colleagues who have used Caesarean services using the ERACS method.

The results of this study are in line with research (Yusri & Febriyanti, 2022) which stated that 62.5 percent of patients had a good interest in having a cesarean section.

The Chi-Square test results in the table above show that the sig p-value = 0.000, this value is smaller than 0.05 ($0.000 < 0.05$), meaning that there is a significant relationship between the knowledge and interest of Fatimah Hospital patients to carry out cesarean delivery using the ERACS method (24). In his research results, he stated that knowledge is the main basic key for someone to have a good understanding and interest. As the results that the author found above, on average Fatimah Hospital patients have good and very good knowledge, as

well as interests, on average they have good and very good interests. Thus, the better the patient's knowledge about cesarean delivery using the ERACS method and its benefits for accelerating healing, the better their interest in using cesarean services using the ERACS method.

The results of this research follow Azwar's theory which states that the better a person's knowledge of an object, the better his interest in that object, conversely if his knowledge is lacking, there will be low interest in that object. (25). The results of this research also confirm previous research conducted by (Humaira et al., 2022), (Lama et al., 2022), (Nurul et al., 2023), (Tika et al., 2022), and (Warmiyati & Ratnasari, 2022) which states that knowledge has a significant relationship with interest in performing a cesarean.

CONCLUSION

Based on the results of the research and discussion above, it can be concluded that there is a significant correlation between knowledge and interest in using Cesarean services using the ERACS method, this is indicated by a sig p-value of 0.000 which is smaller than 0.05 ($0.000 < 0,05$). Thus, the better the patient's knowledge, the more their interest in performing a cesarean section using the ERACS method will be reversed.

SUGGESTION

The health education carried out by Fatimah Hospital through social media such as Facebook, Instagram, TikTok, YouTube, and so on is quite good, but needs to be improved again, such as by holding health webinars to provide education to the public about health and especially cesareans using the ERACS method, so that there are many People are interested in performing cesareans using the ERACS method

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DESCRIPTION OF HEMOGLOBIN LEVELS IN PREGNANT WOMEN WITH COVID-19 BASED ON CHARACTERISTICS

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ABSTRAK : DESKRIPSI KADAR HEMOGLOBIN PADA IBU HAMIL DENGAN COVID-19 BERDASARKAN KARAKTERISTIK

Latar Belakang: Coronavirus merupakan penyakit menular yang disebabkan oleh virus SARS-CoV-2. Pada tahun 2021 kasus coronavirus di Indonesia mencapai 4.251.945 jiwa. Pada periode April 2020 – Desember 2021, di RSHS terdapat 269 ibu hamil yang terinfeksi coronavirus. Ibu hamil termasuk salah satu kelompok orang yang rentan terkena virus ini. Selain rentan terkena coronavirus ibu hamil juga rentan terkena anemia.

Tujuan: Penelitian ini bertujuan untuk melihat gambaran kadar hemoglobin pada ibu hamil dengan COVID-19 di RSHS Bandung periode April 2020 – Desember 2021.

Metode: Metode penelitian ini adalah deskriptif dengan desain *cross-sectional* dengan pendekatan kuantitatif dengan menggunakan data sekunder yang diambil dari rekam medik RSHS Bandung pada periode April 2020 - Desember 2021. Teknik pengambilan sampel menggunakan total sampling. Besar sampel yang diambil dalam penelitian sebanyak 269 data ibu hamil. Analisis data menggunakan tabel distribusi frekuensi dan cross-tabulation.

Hasil: Hasil penelitian ini didapatkan bahwa 46% ibu hamil dengan COVID-19 mengalami anemia. Ibu hamil yang mengalami anemia berdasarkan usia paling banyak <20 tahun sebesar 29% dengan anemia sedang, kemudian untuk usia kehamilan terbanyak yaitu trimester I sebesar 33% dengan anemia berat, selanjutnya untuk paritas terbanyak yaitu grandemultipara sebesar 43% dengan anemia sedang.

Kesimpulan: Adanya perubahan imunologis dan hematologis pada masa kehamilan, hal ini menyebabkan ibu hamil lebih berisiko terhadap terinfeksi COVID-19 dan anemia, sehingga menyebabkan ibu hamil masuk ke dalam populasi yang berisiko.

Saran: Diperlukan penelitian yang lebih mendalam mengenai kadar Hb ibu hamil sebelum dan sesudah terpapar COVID-19 pada tahun yang sama di tempat yang berbeda.

Kata kunci: Covid-19, Ibu hamil, Kadar Hemoglobin.

ABSTRACT

Background: Coronavirus is an infectious disease caused by the SARS-CoV-2 virus. In 2021 coronavirus cases in Indonesia reached 4,251,945 people. In the period April 2020 - December 2021, at RSHS there were 269 pregnant women who were infected with the coronavirus. Pregnant women are one of the groups of people who are vulnerable to this virus. Apart from being susceptible to coronavirus, pregnant women are also susceptible to anemia.

Purpose: This study aims to see an overview of hemoglobin levels in pregnant women with COVID-19 at the Bandung Hospital for the period April 2020 – December 2021.

Method: This research method is descriptive with a cross-sectional design with a quantitative approach using secondary data taken from the medical records of RSHS Bandung in the period April 2020 - December 2021. The sampling technique uses total sampling. The sample size taken in this study was 269 data from pregnant women. Data analysis used frequency distribution tables and cross-tabulations.

Results: The results of this study found that 46% of pregnant women with COVID-19 experienced anemia. Pregnant women who experienced anemia based on age <20 years at most were 29% with moderate anemia, then for the most gestational age, namely the first trimester, 33% with severe anemia, then for the most parity, namely grandemultipara, 43% with moderate anemia.

Conclusion: There are immunological and haematological changes during pregnancy, this causes pregnant women to be more at risk of being infected with COVID-19 and anemia, thus causing pregnant women to enter the at-risk population.

Suggestions: For future researchers, more in-depth research is needed regarding the Hb levels of pregnant women before and after being exposed to COVID-19 in the same year in different places.

Keywords: COVID-19, Pregnant women, Hemoglobin Levels

INTRODUCTION

Coronavirus is a group of viruses that enter through the respiratory tract and can cause disease in animals and humans. Several types of Coronavirus are known to cause respiratory infections in humans, ranging from coughs, colds to more serious ones such as Middle East Respiratory Syndrome (MERS) and Severe Acute Respiratory Syndrome (SARS). A new type of coronavirus discovered in December 2019 in Wuhan, China, namely SARS-CoV-2, causes the disease COVID-19 and has now become a pandemic occurring throughout the world (WHO, 2021). According to WHO, in 2021, COVID-19 cases in the world reached 254,256,432 people, while in Indonesia it reached 4,251,945 people (WHO, 2021).

One other vulnerable group is pregnant women, where hormonal and immunological changes occur which result in them being more susceptible to immunological diseases and infections with various viruses during pregnancy and after giving birth (Fuhler, 2020)

There are 47,244,379 pregnant women experiencing COVID-19 in the United States (Covid Data Tracker, 2021). Meanwhile in Indonesia, the Ministry of Health stated that 35,099 pregnant women were confirmed positive for COVID-19 (Ministry of Health of the Republic of Indonesia, 2021). In pregnant women there are changes in the hematological system including changes in blood and blood clotting. The blood volume in pregnant women increases to around 1500 ml consisting of 1000 ml of plasma and around 450 ml of red blood cells. Red blood cell production increases during pregnancy depending on the amount of iron available. Although red blood cell production increases, hemoglobin and hematocrit decrease. The decrease in Hb and hematocrit occurs due to rapid expansion of blood volume, making pregnant women vulnerable to anemia (Tyastuti, 2016). According to the 2019 Indonesian Health Profile, 48.9% of pregnant women in Indonesia experience anemia (Ministry of Health of the Republic of Indonesia, 2019). The West Java Health Service stated that in 2020 there were 63,246 pregnant women experiencing anemia. As many as 300 pregnant women with COVID-19 died in West Java until August 2021 (Dinkes Jabar, 2021).

The impact of anemia in pregnant women can be primary or secondary urinary tract disorders, uterine atony, retained placenta, wounds that are difficult to heal so that pelvic sepsis can occur, uterine involution disorders and postpartum depression. Meanwhile, from the perinatal side, anemia in pregnancy can cause poor pregnancy outcomes, including congenital abnormalities in the fetus, intrauterine growth restriction (IUGR), babies with low birth weight (LBW) and prematurity (Tyastuti, 2016). Covid in pregnant women affects Hb levels. During pregnancy, women are at risk of contracting viruses and respiratory illnesses, including COVID-19. SARS-Cov-2 infection which directly attacks the respiratory system causes respiratory failure, causing hypoxia in the body. Hypoxic conditions in the body will trigger inflammation and disrupt iron metabolism, where iron will be difficult for the body to absorb. This causes a decrease in iron levels for erythropoiesis and worsens anemia in pregnant women and can also result in multiorgan dysfunction syndrome in pregnant patients with COVID-19. This happens because Covid is an infection that is a factor in making anemia worse (Taneri, 2020) (Olga et al, 2020).

Regarding existing pathophysiology, this is in line with several studies which state that the majority of patients hospitalized due to COVID-19 have Hb levels lower than the normal range (Kemenkes RI, 2021). In another study, it was also stated that patients hospitalized with COVID-19 at a severe stage experienced anemia which had an impact on their quality of life (Posemah et al, 2021). The aim of this research is to find out what hemoglobin levels look like in pregnant women with Covid-19.

RESEARCH METHODS

This research uses a descriptive method with a cross-sectional design and a quantitative approach. The population in this study were pregnant women at RSHS Bandung with the target population in this study being pregnant women with Covid at Hasan Sadikin Hospital Bandung in April 2020 - December 2021. The sample in this study was pregnant women infected with COVID-19 at RSHS Bandung in April 2020 - December 2021 as many as 269 pregnant women. The sampling technique in this research is Total Sampling and the data required in

this research includes secondary data obtained from looking at medical record data at Hasan Sadikin Hospital, Bandung.

Before carrying out this research, researchers needed permission from several related parties such as the research ethics committee and permission from Hasan Sadikin Hospital, Bandung. The data analysis used in this research is univariate analysis which aims to explain or describe and obtain the frequency distribution of pregnant women. The

results will be displayed using cross-tabulation to see an overview of hemoglobin levels in mothers infected with COVID-19.

RESEARCH RESULTS

Based on table 1, it was found that 53.9% of pregnant women with Covid-19 were not anemic. Meanwhile, pregnant women with Covid-19 experienced the most anemia, namely 25.3%.

Table 1
Frequency Distribution of Hb Levels of Pregnant Women with Covid-19 at RSHS Bandung
Period April 2020 – December 2021

Variabel		Frequency (n)	Percentage (%)
Hemoglobin Levels	Normal	145	53,9
	Mild Anemia	49	18,2
	Moderate Anemia	68	25,3
	Severe Anemia	7	2,6

Table 2
Frequency Distribution of Characteristics of Respondents of Pregnant Women with Covid-19 at RSHS Bandung for the Period April 2020 – December 2021

Characteristics		Frequency (n)	Percentage (%)
Age	<20 years	14	5,2
	20-35 years	202	75,1
	>35 years	53	19,7
Gestasional age	Trimester I	3	1,1
	Trimester II	6	2,2
	Trimester III	260	96,7
Parity	Nulipara	79	29,4
	Primipara	96	35,7
	Multipara	87	32,3
	Grandemultipara	7	2,6

Based on table 2, it is found that the most data from ages 20-35 is 75.1% of pregnant women. In the gestational age category, it was in the third trimester group, namely 96.7%. The highest parity was 35.7% in the primipara category.

Based on table 3, it is found that the Hb levels of pregnant women during Covid-19. The age category that most often experiences anemia is <20

years old with moderate anemia at 29%. Meanwhile, in the gestational age category, there are still many pregnant women who experience severe anemia in the first trimester, as much as 33%. In the parity category, anemia is the most common, namely grandemultipara as much as 43% with moderate anemia.

Table 3
Hb levels based on characteristics of pregnant women with Covid-19 at RSHS Bandung
Period April 2020 – December 2021

Karakteristik	Kadar Hb								Total (%)
	Normal		Anemia						
			Ringan		Sedang		Berat		
	f	%	f	%	f	%	f	%	
Usia									
<20 tahun	8	57	1	7	4	29	1	7	100
20-35 tahun	109	54	36	18	52	26	5	2	100
>35 tahun	28	53	12	23	12	23	1	1	100
Usia Kehamilan									
Trimester I	2	67	0	0	0	0	1	33	100
Trimester II	3	50	2	33	0	0	1	17	100
Trimester III	140	54	47	18	68	26	5	2	100
Paritas									
Nulipara	45	54	11	14	23	29	2	3	100
Primipara	55	57	19	20	19	20	3	3	100
Multipara	46	53	17	20	23	26	1	1	100
Grandemultipara	1	14	2	29	3	43	1	14	100

DISCUSSIONS

Research results based on the age characteristics of pregnant women infected with COVID-19 at RSHS Bandung in 2020 - 2021, the majority of respondents were in the 20-35 year age range, amounting to 75.1%, namely the healthy reproductive age range. Healthy reproductive age according to the BKKBN is the best time range for a mother to give birth, namely between the ages of 20 – 35 years. This is because at the age of 20 – 35 years the body's working system is functioning normally. At less than 20 years of age, the mother's reproductive system cannot function optimally because it is still in the process of growing. At the age of more than 35 years, the physiological function of the mother's body begins to decline. This is a risk that can result in complications if the mother's age is less than or more than 35 years (Rahayu, 2017). Furthermore, the highest gestational age category was in the third trimester, namely 96.7%. This happens because RSHS is a referral hospital in West Java, so many pregnant women who are about to give birth first undergo a Covid-19 checking procedure (RSHS, 2019). The results of this study also show that 46% of pregnant women with Covid-19 experience anemia. This occurs due to several factors, namely during pregnancy there are physiological changes including the immunological and hematological systems (Posemah et al, 2021).

Based on research conducted by researchers, it can be seen that most pregnant women with COVID-19 who experience anemia are aged < 20 years with moderate anemia, namely 29%.

This happens because the mother's reproductive system cannot function optimally and is still in the process of growing, so it needs iron for the fetus and itself (Olga et al, 2020). In the gestational age category, anemia is the most common in the first trimester with severe anemia at 33%. Anemia in the first trimester can be caused by loss of appetite, morning sickness, and the start of hemodilution at 8 weeks of pregnancy so that the first trimester can make you twice as likely to experience anemia (Permatasari, 2021). Meanwhile, in the parity category, the majority of pregnant women experienced moderate anemia in grandemultipara, 43%. Grandemultipara parity is a woman who has given birth to a viable (live) baby more than five times. This is in line with research that shows that parity has a significant influence on the incidence of anemia, where the more frequently a mother gives birth, the frequency of iron in the mother's body decreases, which results in a decrease in Hb levels which makes the mother suffer from anemia during pregnancy (Permatasari, 2021).

In pregnant women, blood changes and blood clotting occur. Blood volume in pregnant women increases by around 1500 ml, consisting of 1000 ml plasma and around 450 ml red blood cells. This increase in blood occurs around the 10th to 12th week. The function of the increase in blood is as the body's defense against hypertrophy of the vascular system due to enlargement of the uterus, hydration of tissue in the fetus and mother when the pregnant woman is standing or lying down and fluid reserves to replace blood lost during pregnancy. childbirth and

postpartum. Peripheral vasodilation occurs in pregnant women which functions to maintain normal blood pressure even though blood volume in pregnant women increases. HR production increases during pregnancy. Even though HR production increases, hemoglobin and hematocrit decrease, this is called physiological anemia in pregnant women. The fastest expansion of blood volume occurs during the second trimester of pregnancy. The lowest Hb occurs at 20 weeks of gestation and then increases slightly until the pregnancy is full term (Tyastuti, 2016)

When the Covid-19 virus attacks the immune system, the reaction that occurs is that the innate immune system activates hepcidin. Hepcidin is a key regulator of iron entry into the blood circulation which functions to inhibit ferroportin. Meanwhile, ferroportin itself is a transmembrane protein that transports iron from inside the cell to outside the cell, resulting in iron being blocked in reticuloendothelial macrophages and ultimately decreasing HB levels in the blood. Apart from that, the Covid-19 virus can attack the respiratory system, causing the lower respiratory tract to secrete pulmonary infiltrates, thus worsening the circulation of oxygen and carbon dioxide. Because the virus enters through the respiratory system and causes failure in the respiratory system which then causes hypoxic conditions. Furthermore, inflammation and changes in iron metabolism occur which result in HB levels in the blood continuing to decrease, causing anemia (Taneri, 2020) (Olga et al, 2020).

The research results cannot state that anemia occurs due to COVID-19, there are several other factors that can influence or cause anemia, such as age, gestational age. and parity. Apart from that, there is some data on mothers who have experienced anemia and bleeding.

CONCLUSIONS

The results of this study stated that 46% of pregnant women infected with Covid-19 experienced anemia with the most age characteristics being <20 years, 29% with moderate anemia, then for the highest gestational age, namely the first trimester, 33% with severe anemia, then for parity. The largest number is grandemultipara at 43% with moderate anemia.

SUGGESTION

For pregnant women, it is hoped that the results of this research will provide an idea of how to pay attention to nutritional intake and optimal age during pregnancy to avoid anemia during pregnancy. For future researchers, more in-depth research is

needed regarding the Hb levels of pregnant women before and after being exposed to COVID-19 in the same year in different places.

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FEEDING PATTERNS AND UNDERWEIGHT IN TODDLER

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ABSTRAK POLA PEMBERIAN MAKAN DENGAN UNDERWEIGHT PADA BALITA

Latar Belakang : *Underweight* merupakan indikator utama kekurangan gizi pada anak dan dapat menimbulkan dampak jangka panjang seperti gangguan kesehatan fisik dan mental, perilaku, dan kognitif. Prevalensi *underweight* pada anak balita Puskesmas Rowosari II sebesar 9,8 % mayoritas terjadi pada usia 24-60 bulan dengan persentase 0,53%. Permasalahan yang menyebabkan balita mengalami *underweight* yaitu kurangnya pengetahuan pada orangtua atau pengasuh, kurangnya asupan makanan, dan adanya penyakit infeksi. Penyakit infeksi yang diderita balita dapat mempengaruhi nafsu makan balita sehingga kebutuhan gizi dan makanan dalam tubuh balita tidak terpenuhi akibatnya balita dapat mengalami penurunan berat badan.

Tujuan : Untuk mengetahui hubungan Pola pemberian makan dengan *underweight* pada Balita.

Metode : Jenis penelitian ini dengan metode survey dan pendekatan *cross sectional*. Populasi dari penelitian ini adalah seluruh ibu Balita dengan status gizi *underweight* berjumlah 111, dengan teknik pengambilan sampel secara *purposive sampling* berjumlah 40 responden. Analisis data dengan uji *Rank Spearman*

Hasil : Dari hasil penelitian didapatkan bahwa 77.5% Balita dengan status gizi *underweight*, dan sebanyak 22,5 dengan status gizi normal. Pola pemberian makan tepat sebanyak 17,5, dan pola pemberian tidak tepat sebanyak 82,5%. Dari uji statistik didapatkan nilai *p value* = 0,050 dengan nilai koefisien korelasi yaitu $r = 0,312$ sehingga ada hubungan antara pola pemberian makan dengan status gizi balita *underweight*.

Kesimpulan : ada hubungan pola pemberian makan terhadap status gizi *underweight* pada balita (*p value* = 0,050)

Saran: Diharapkan ibu balita dapat meningkatkan pengetahuan dengan aktif mengikuti kelas Balita, dan rutin ikut serta dalam kegiatan posyandu sehingga dapat mengetahui informasi tentang pemberian makan yang bergizi bagi balita yang berkaitan dengan perbaikan pola asuh kepada anak balita.

Kata Kunci : Balita Pola pemberian makan, *Underweight*

ABSTRACT

Background: *Underweight* is the main indicator of malnutrition in children. It causes several long-term impacts such as physical and mental health, behavioral and cognitive disorders. The prevalence of *underweight* in children under five at the Rowosari II Health Center is 9.8%, the majority occurs at the age of 24-60 months by 0.53%. Problems that cause it are: lack of knowledge among parents or caregivers, lack of food intake, and the presence of infectious diseases. Infectious diseases suffered by toddlers can affect the toddler's appetite so that the nutritional and food needs of the toddler's body are not met, as a result the toddler can experience weight loss.

Objective: To determine the relationship between feeding patterns and *underweight* in toddlers.

Method: This type of research uses survey methods and a cross sectional approach. The population of this study was all 111 mothers of toddlers with *underweight* nutritional status, with a purposive sampling technique of 40 respondents. Data analysis using the Spearman Rank test.

Results: From the research results it was found that 77.5% of toddlers had *underweight* nutritional status, and as many as 22.5 had normal nutritional status. Appropriate feeding patterns were 17.5%, and inappropriate feeding patterns were 82.5%. From statistical tests, it was found that the *p value* = 0.050 with a correlation coefficient value of $r = 0.312$ so that there was a relationship between feeding patterns and the nutritional status of *underweight* toddlers.

Conclusion: there is a relationship between feeding patterns and *underweight* nutritional status in toddlers (*p value* = 0.050)

Suggestion: For mothers of toddler are expected to increase their knowledge by actively attending toddler classes, and regularly participating in posyandu activities so that you can find out information about providing nutritious food for toddlers which is related to improving parenting patterns for toddlers.

Keywords: Feeding patterns, *Underweight*, Toddlers

INTRODUCTION

Health is one component of creating quality human resources. Nutritional status of the community as one of the factors in an effort to improve the level of health as high as possible can be started from infancy. This is because the age group that is liable to malnutrition diseases such as underweight, stunting, wasted is the group of babies and toddlers which is the golden period in children's physical, mental and emotional growth (Ministry of Health R1, 2019a). Underweight is the main indicator of malnutrition in children and can cause long-term impacts such as physical and mental health, behavioral and cognitive disorders (Aprilya Roza Werdani & Syah, 2023).

According to WHO, the prevalence of underweight in the world in 2021 is 6.7% or 45.4 million children under five. More than half of toddlers in Asia are underweight, it's attained 70% (WHO, 2021). According to the results of the 2022 Indonesian Nutrition Status Survey (SSGI), the prevalence of underweight in Indonesia is 17.1%, while in Central Java it is quite high with a percentage of 17.6%, for Kendal district area it is 17.1% (Ministry of Health R1, 2019a). The prevalence of underweight in children under five at the Rowosari II Health Center is 9.8%, the majority of which occurs at the age of 24-60 months with a percentage of 0.53% (Data from the Rowosari II Health Center, 2023).

Problems that cause toddlers to be underweight are lack of knowledge among parents or caregivers, lack of food intake, and the presence of infectious diseases. Infectious diseases suffered by toddlers can affect the toddler's appetite so that the nutritional and food needs of the toddler's body are not met as a result of which the toddler can experience weight loss (Prawoto, 2019).

Based on a preliminary survey conducted in the work area of the Rowosari II Community Health Center, the majority of mothers already have good knowledge, as indicated by the majority of mothers easily getting information about balanced nutrition through posyandu and counseling or socialization from health workers. However, the pattern of feeding children is not in accordance with the type, schedule and amount of children's nutritional intake needs. Therefore, we are interested in analyzing feeding patterns with underweight nutritional status in toddlers in the work area of the Rowosari II Community Health Center. The latest thing from this research is the risk factors that cause underweight in children, namely the mothers parenting style which is the case of underweight, the higher the prevalence rate. This is in line with Luxfy Hanifah's 2023 research stating that there is a significant relationship

between mothers parenting style in local PMT and the incidence of underweight toddlers in the Serdang Village community health center working area with a *p value* of 0,027 (Luxfy Hanifah, 2023)

RESEARCH METHODS

Research design

This type of research uses survey methods and a cross-sectional approach (Masturoh & Anggita, 2018). The research location is in the villages of Tanjungsari, Karangasari, Tanjunganom, Randusari in the Working Area of the Rowosari II Community Health Center. The population in this study were all Underweight (BB/U) toddlers aged 0-59 months in the Rowosari II Health Center Working Area, totaling 111 toddlers. Sampling in this study was carried out using the purposive sampling technique, so that a sample of 40 toddlers was obtained. The instruments in this study used a Feeding Pattern questionnaire, stepping scales, microtoices. Data collection techniques using interviews, measuring BB/U. Univariate data analysis was used to describe the distribution of average values (Masturoh & Anggita, 2018). Bivariate analysis of the Spearman Rank test (Masturoh & Anggita, 2018) was used to test the hypothesis of the relationship between feeding patterns and underweight nutritional status in the Rowosari II Community Health Center Working Area.

RESEARCH RESULTS

Respondent Characteristics

Respondents in this study consisted of toddlers aged 6-59 months in Tanjungsari, Karangasari, Tanjunganom, Randusari Villages in the Rowosari II Community Health Center Work Area. More details of the distribution of respondents can be seen in the following table:

Table 1. Frequency Distribution by Age of Toddlers

Toddler	N	%
6-36 month	23	57,5
37-59 month	17	42,5

source: research data in 2023

Based on Table 1, It was found that the majority of the respondents in this study were (57.5%) toddlers aged 6 -36 months.

Table 2
Frequency distribution by gender of toddlers

Gender	N	%
Boys	17	42,5
Girls	23	57,5

source: Research data in 2023

Based on Table 2. indicated that the majority of the respondents (57,5%) were girls.

Table 3
Frequency distribution by the underweight category of toddlers

Underweight toddler	N	%
Underweight	31	77,5
Normal	9	22,5

Source: Research data in 2023

Based on table 3, indicated that the majority of the respondents were underweight (77,5%).

Table 4
Frequency distribution by the feeding patterns of toddlers

Feeding patern	N	%
Inappropriate	33	82.5
Appropriate	7	17.5

Source: Research data in 2023

Based on table 4, indicated that the majority of respondents were implemented inappropriate feeding pattern (82,5%).

Table 5
Crosstab Results of the Spearman Rank Test Between Feeding Patterns and Underweight Nutritional Status in Toddlers

Feeding Pattern	Nutritional Status				Amount	
	Normal		Underweight			
	n	%	n	%	N	%
Inappropriate	7	17.5	26	65	33	82,5
Appropriate	2	5	5	12,5	7	17,5
P = 0.050	r = 0,312				α = 0.05	

Source: Research data in 2023

Based on the research results, it can be seen that the percentage of underweight toddlers who implement inappropriate feeding patterns is 65% and the percentage of normal toddlers who implement inappropriate feeding patterns is 17.5%.

The results of the analysis of feeding patterns are divided into 2 categories, appropriate and inappropriate. From the results of the analysis of Underweight Nutritional Status by the feeding patterns, it was found that the p value = 0.050 with a correlation coefficient value of $r = 0.312$ therefore, there is a relationship between feeding patterns and the nutritional status of underweight toddlers.

DISCUSSION

Overview of the toddlers nutritional status

Based on the research results, it can be seen that there are more toddlers aged 6-36 months (57.5%) compare to those aged 37-59 months (42.5%). There are 82,5% of toddlers who implemented by inappropriate feeding patterns (82.5%). According to Kurniawan et al., in 2022, boys will be underweight compared to girls. It because boys need more calories for growth and

development. The physical growth of boys will be slower than girls. This difference will be seen when they enter adolescence, namely that boys will grow faster than girls (Kurniawan et al., 2022).

Relationship between Feeding Patterns and Underweight Toddlers

Malnutrition, especially in children under five, can disrupt physical growth and mental development, disrupt brain intelligence, and reduce body endurance. The high underweight rate is due to inaccurate consumption patterns of toddlers and mother's parenting patterns, so it will affect the nutritional status of toddlers, especially toddler weight (Azkia et al., 2023). Therefore, parents must always pay attention to feeding patterns for children with a balanced nutritional menu in accordance with the 2019 nutritional adequacy figure (AKG) for children aged 1-3 years of 1,350 kcal, 20 grams of protein, 45 grams of fat and 215 grams of carbohydrates. For children aged 4-6 years, it is 1,400 kcal, 25 grams of protein, 50 grams of fat and 220 grams of carbohydrates (Ministry of Health RI, 2019).

According to research by Kurniawan et al., in 2022, male toddlers will be underweight compared to female toddlers. Toddler boys are more susceptible to being underweight because toddler boys need more calories for growth and development. The physical growth of male toddlers will be slower than that of girls. This difference will begin to appear when they enter adolescence, namely that boys will grow faster than girls (Kurniawan et al., 2022).

Age 6-36 months is an important period in the growth and development of toddlers. During the Baduta period, a rapid growth and development process takes place, namely physical growth, psychomotor, mental and social development. Malnutrition during the toddler years can cause physical, mental, social and intellectual growth and development disorders that are permanent and continue until the child becomes an adult (Merryana Adriani, 2019).

In this research, the most common cause of underweight is the mothers parenting style, especially the pattern of feeding children, this is in line with Luxfy Hanifah's research in 2023 which states that there is a significant relationship between the mother's parenting style in local PMT and the incidence of underweight toddlers in the work area of the community health center Serdang Village with a *p* value of 0,027 (Luxfy Hanifah, 2023).

CONCLUSION

The conclusion of this study is that there is a relationship between feeding patterns and underweight nutritional status in toddlers in the work area of the Rowosari II Community Health Center with a *p* value of 0.050, there is a significant relationship with the correlation coefficient value showing a moderate or sufficient relationship, namely $r = 0.312$.

SUGGESTION

For Community Health Centers, existing programs at Community Health Centers should be optimized to improve feeding patterns for example the toddler mother class activity program by providing balanced nutrition for children. It is hoped that mothers of toddlers can increase their knowledge about providing nutritious food for toddlers which is related to improving parenting patterns for toddlers.

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LEVEL OF PREGNANT WOMEN'S KNOWLEDGE AND BEHAVIOR ON BREAST SELF-EXAMINATION (SADARI) AND ITS RELATIONSHIP WITH EARLY DETECTION OF BREAST CANCER

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ABSTRAK : TINGKAT PENGETAHUAN IBU HAMIL TENTANG SADARI DENGAN PERILAKU SADARI SEBAGAI DETEKSI DINI KANKER PAYUDARA

Latar Belakang : Data menurut WHO dari tahun 2019 sebanyak 58,256 kasus atau 16,7% dari total 348.809 dan di tahun 2020 sebanyak 396.914 kasus kanker, adanya peningkatan data kanker payudara di Indonesia dari tahun 2018 sebanyak 1,79 per 1.000 penduduk dan di tahun 2019 sebanyak 42,1 per 100.000 penduduk dan di tahun 2020 sebanyak 65.858 kasus kanker atau 30,8 per 10.000 penduduk yang terkena kanker payudara. adanya permasalahan mengenai ibu belum menyadari pentingnya melakukan SADARI karena kurangnya informasi mengenai SADARI, sebanyak 95% ibu hamil yang baru pertama kali mendengar tentang SADARI.

Tujuan : Mengetahui hubungan tingkat pengetahuan ibu hamil tentang SADARI dengan perilaku SADARI sebagai deteksi dini kanker payudara

Metodologi : Metodologi penelitian menggunakan *Observasional Analitik*, sample menggunakan *Total Sampling* sebanyak 40 ibu hamil. Instrumen yang digunakan adalah kuesioner dan Analisa bivariat menggunakan *Uji Chi – Square*

Hasil Penelitian : Diketahui bahwa ibu hamil dengan kategori pengetahuan kurang baik sebanyak 21 (52,5%). ibu hamil yang memiliki perilaku kurang sebanyak 23 (57,5%), Hasil analisa bivariat menunjukkan bahwa jumlah responden yang memiliki pengetahuan kurang baik dan memiliki perilaku kurang dengan jumlah sebanyak 14 orang (66,7%).

Kesimpulan : Ada hubungan yang signifikan antara tingkat pengetahuan ibu hamil dengan perilaku SADARI sebagai deteksi dini kanker payudara. ditunjukkan dengan uji korelasi chi square didapatkan nilai hasil Asymp sig (2 side) p-value yaitu 0,001 yang diartikan kurang dari 0,005, Ho ditolak Ha diterima

Saran : Pada ibu hamil diharapkan lebih meningkatkan lagi kepeduliannya terhadap kesehatan dan diharapkan lebih di tingkatkan lagi pengetahuan mengenai SADARI dan kanker payudara.

Kata Kunci : SADARI (Pemeriksaan Payudara Sendiri), Ibu hamil, Deteksi dini

ABSTRACT

Background: Data according to WHO from 2019 was 58,256 cases or 16.7% of the total 348,809 and in 2020 there were 396,914 cancer cases and an increase in breast cancer data in Indonesia from 2018 there was 1.79 per 1,000 population, in 2019 there was 42.1 per 100,000 population and in 2020 there was 65,858 cases of cancer or 30.8 per 10,000 population affected by breast cancer. and there a problem about the mother that hasn't realized the importance of doing BSE, lack information BSE,

Objective: To determine the relationship between the level of knowledge of pregnant women about BSE and BSE behavior as an early detection of

Methodology: The research methodology used was an Analytical Observation, the sample was total sampling of 40 pregnant women. The instrument used was questionnaire and bivariate analysis using the Chi - Square test

Results: It is known that the behavior of pregnant women with poor knowledge category was 21 (52.5%). results of the bivariate analysis showed that the number of respondents who had poor knowledge and had less knowledge were 14 people (66.7%).

Conclusion: There was a significant relationship between the level of knowledge of pregnant women with BSE behavior as an early detection of breast cancer. by chi square correlation test, the result value of Asymp sig (2 sides) p-value is 0.001. Ho is rejected and Ha is accepted.

Suggestion: Pregnant women are expected to increase their awareness of health and are expected to

increase their knowledge about BSE and breast cancer.

Keywords: BSE (Breast Self-Examination), Pregnant women, Early detection

INTRODUCTION

Changes in hormones during pregnancy can cause noticeable changes in the breasts. They may become more prominent and feel rubbery. Although many women tend to overlook these changes, it's crucial to detect any possible lump in the breast as early as possible. Unfortunately, many pregnant women are not aware of the importance of breast self-examination (SADARI). SADARI is a crucial first step in identifying any changes in the breast.

SADARI is an easy examination that every woman can perform to detect any abnormalities in the breast. The primary purpose of SADARI is to identify cancer at an early stage. Unfortunately, women are still less likely to undergo SADARI. (Dena, 2015)

Cancer is a leading cause of death worldwide. The most common type of cancer in women is breast cancer, which involves the growth of malignant tumors in fatty and connective tissues. Breast cancer often presents as a hard, irregular lump on the outside of the breast. (Lubis, 2017)

According to the World Health Organization's Global Cancer Observatory 2019 data, breast cancer is the leading cause of cancer, accounting for 16.7% of the total 348,809 cases, with 58,256 cases reported. In 2020, there were as many as 396,914 cancer cases. (WHO, 2020)

Based on the Basic Health Research (Riskesdas) conducted in Indonesia, the prevalence of cancer in 2018 was 1.79 per 1,000 population. In 2019, there was an increase to 42.1 per 100,000 population. Furthermore, in 2020, there was a significant increase in the number of cancer cases, with a total of 65,858 cases reported, which translates to 30.8 cases per 10,000 population. (Kemenkes RI, 2019)

It is estimated that the number of breast cancer cases in the province of Banten has increased from around 347,000 people in 2017 to 2,252 people in 2018. It should be noted that the incidence of breast cancer can increase with age, and even young individuals are not guaranteed to be exempt from this disease. (Riskesdas, 2018)

Pregnant women have not been aware of the significance of performing SADARI early on, hence lacking the motivation to do so. Several factors contribute to women's reluctance to perform SADARI, including fear of the disease they may have

and insufficient support from their partners, friends, and family. (Bashirian, *et al*, 2019)

The SADARI technique is a simple and inexpensive way to detect breast cancer early without requiring any complicated equipment. However, many pregnant women are not aware of its importance due to a lack of information and motivation to learn more about it. Furthermore, SADARI may also feel unfamiliar and uncomfortable to some, with up to 95% of women being unfamiliar with it when they first hear about it. (Anggrayni, 2017)

The reason for the low participation of Indonesian women, particularly pregnant women, in performing SADARI is the lack of information. This lack of awareness results in pregnant women not performing SADARI and not realizing the impact of not doing so. Failing to understand the importance of performing SADARI can lead to the detection of breast cancer at an advanced stage, which can be life-threatening. (Setiawan, 2012)

Breast cancer is a common disease that often leads to death. However, if the symptoms are detected early, the chances of curing it increase dramatically. To prevent breast cancer, adopting a healthy lifestyle and performing regular self-examination (SADARI) can be effective measures. (Monty, P.S & Aksan, H, 2012).

Due to the significant prevalence of breast cancer and its consequential impact, it is crucial to take measures such as providing public health counseling, as mandated by the Minister of Health Regulation No. 34 of 2015, which focuses on breast cancer prevention through early detection methods, such as breast self-examination (SADARI). (Kemenkes RI, 2015)

According to the research conducted at BPM Tati Karwati, there are some weaknesses in the counseling of breast self-examination (SADARI) and breast cancer awareness. This has resulted in a lack of awareness among pregnant women. Many of them are still unaware of the importance of SADARI and don't perform it regularly. On the other hand, the research has also highlighted some strengths. For instance, it has provided valuable knowledge about breast self-examination and early detection of breast cancer by distributing informative leaflets among mothers. This has been helpful for those who were not familiar with the SADARI techniques.

RESEARCH METHODS

The study used observational analytic research with a cross-sectional approach. The population consisted of 40 pregnant women who attended BPM Tati Karwati Tangerang. Total sampling was employed, meaning all pregnant women were included in the study. The research was conducted at BPM Tati Karwati Tangerang using a questionnaire as the research instrument. Bivariate analysis was performed using the Chi-Square statistical test.

RESEARCH RESULTS

Univariate Analysis

Table 1
Frequency Distribution of Respondent Characteristics at BPM Tati Karwati

Respondent Characteristics	Frequency	Percentage
Age		
20-35 years old	28	70,0
>35 years old	12	30,0
Parity		
Primipara	25	62,5
Multipara	15	37,5
Education		
Low	17	42,5
High	23	57,5
Occupation		
Unemployed	24	60,0
Employed	16	40,0

Table 1 shows the results of a survey conducted on the characteristics of respondents. The categories are based on age, parity, education level, and occupation. According to the data, the highest number of respondents, 28 people (70.0%), belong to the age group of 20-35 years. In terms of parity, the Primipara group has the most significant number, with a total of 25 people (62.5%). When considering the respondents' education level, 23 people (57.5%) have higher education (SMA-PT). Finally, the group with the largest number of respondents (24 people, 60.0%) is the one who is not currently working.

Table 2
Frequency Distribution of Respondents' Knowledge about SADARI at BPM Tati Karwati Tangerang in 2021

Knowledge Level	Frequency	Percentage
Poor	21	52,5
Good	19	47,5

According to Table 2, the level of understanding among pregnant women regarding SADARI as an early detection technique for breast cancer at BPM Tati Karwati Tangerang was poor for the majority of participants. Out of the total respondents, 21 people (52.5%) had poor knowledge, while 19 people (47.5%) had good knowledge.

Table 3
Frequency Distribution of SADARI Behavior regarding early detection of breast cancer at BPM Tati Karwati Tangerang in 2021

SADARI Behavior	Frequency	Percentage
Poor	23	57,5
Good	17	42,5

According to Table 3, out of the total number of pregnant women surveyed, only 17 people (42.5%) demonstrated good SADARI behavior, while 23 people (57.5%) had poor SADARI behavior. This indicates that the majority of pregnant women have inadequate SADARI behavior. However, it is worth noting that even though the number of respondents with poor SADARI behavior is higher, a significant number of respondents, specifically 17 people (42.5%), displayed good SADARI behavior.

Bivariate Analysis

Table 4 above shows that 14 respondents (66.7%) have less knowledge and less behavior. The chi-square test analysis resulted in a p-value of 0.001 (p-value<0.005). This indicates that the null hypothesis (Ho) is rejected, and the alternative hypothesis (Ha) is accepted. Therefore, it can be concluded that there is a significant relationship between pregnant women's knowledge and their behavior in performing SADARI as an early detection of breast cancer at BPM Tati Karwati Tangerang in 2021.

Table 4
The Relationship Between Pregnant Women's Knowledge and SADARI Behavior for Early Detection of Breast Cancer at BPM Tati Karwati Tangerang in 2021

Knowledge Level		SADARI behavior					P-Value f (%)
Category	Good		Poor		Total		
	f	%	f	%	f	%	
Good	16	84,2	3	15,8	19	100	0,001
Poor	7	33.3	14	66.7	21	100	

DISCUSSION

Univariate Analysis

Respondent Characteristics at BPM Tati Karwati

According to the univariate analysis, the survey respondents can be classified based on various characteristics such as age, parity, education level, and occupation. Among these, the highest number of respondents, i.e., 28 people (70.0%), fall into the age group of 20-35 years. In terms of parity, the Primipara group has the most significant number of respondents, with a total of 25 people (62.5%). Similarly, the respondents with higher education (SMA-PT) are the largest group, with 23 people (57.5%). Finally, among the occupation categories, the non-working group has the most significant number of respondents, with 24 people (60.0%).

Age, occupation, and education influence respondents' characteristics. High education and work broaden experience. As people age, they tend to gain more experience. This is in line with the findings of Rizky Hafidzah's 2017 research on SADARI knowledge and behavior. The study revealed that 142 (67.9%) of the respondents were aged between 20-21 years, and 91 (43.6%) had a higher education. Additionally, 30 (60.0%) of the respondents belonged to the primipara category.

It is assumed by researchers that mothers aged between 20-35 years find it easier to absorb information than mothers aged over 35 years. Mothers with higher education tend to get more information from social media or seminars they attend. First-time mothers, also known as primiparous mothers, tend to know less about SADARI as they have never given birth before and are rarely educated about it. They may also be afraid to do SADARI as they have never tried it before. Working mothers tend to get more information as they use social media or get information from their colleagues at work, compared to non-working mothers.

Pregnant Women's Knowledge about SADARI

After conducting a univariate analysis, it was found that 19 pregnant women (47.5%) had good knowledge, while 21 (52.5%) had poor knowledge.

According to Budiman and Riyanto (2013), several factors influence knowledge. These include an individual's age, education level, and exposure to information. Higher education can broaden one's experience and lead to better knowledge. Similarly, as a person grows older, their experience tends to increase. The more sources of information a person has access to, the better their knowledge, attitude, and behavior become.

This is in line with the research conducted by Rizky Hafidzah in 2017. There is a significant relationship between SADARI knowledge and SADARI behavior. The study found that a majority of the respondents (24.9%) had insufficient knowledge about SADARI. The analysis revealed a p-value of 0.003 (<0.005), thereby confirming the significant association between SADARI knowledge and SADARI behavior.

The researcher believes that a lack of knowledge may affect a mother's behavior, leading to a lack of motivation to undergo SADARI examination. On the other hand, if the mother has good knowledge about SADARI, she will be more aware of its importance and will be motivated to undergo it as an early detection measure for breast cancer.

SADARI Behavior Among Pregnant Women

According to the univariate analysis, 23 pregnant women (57.5%) exhibited poor behavior while 17 (42.5%) had good behavior. SADARI behavior is a self-examination method to detect breast cancer. Human behavior refers to actions like walking, talking, laughing, crying, working, writing, and reading.

This is in line with the study conducted by Rizky Hafidzah in 2017. There is a correlation between SADARI knowledge and SADARI behavior. The study revealed that out of the respondents, 104 individuals (49.8%) exhibited poor behavior towards SADARI, while only 14 individuals (6.7%) demonstrated good behavior.

The researcher assumes that mothers may exhibit poor behavior towards SADARI due to a lack of information. However, if they are provided with

more information about SADARI, their behavior is likely to improve and they will be more motivated to perform SADARI.

Bivariate Analysis

According to Table 4, out of all the respondents surveyed, 14 people (66.7%) showed poor knowledge and poor behavior. After analyzing the data using the chi-square test, the p-value was found to be 0.001, which is less than the significance level of 0.005. This indicates that the null hypothesis (H_0) can be rejected and the alternative hypothesis (H_a) can be accepted. Therefore, it can be concluded that there is a significant relationship between the knowledge level of pregnant women and their behavior towards SADARI as early detection of breast cancer at BPM Tati Karwati Tangerang in 2021.

Behavior can be defined as the actions or activities of a living organism. It is observed from a biological perspective, as all living things, including plants, animals, and humans, exhibit behavior through their own activities. Human behavior encompasses a wide range of actions and activities, such as walking, talking, laughing, crying, working, writing, reading, and many more. In essence, human behavior refers to all activities and actions performed by humans, whether they are visible to others or not. (Notoatmodjo, 2014).

This is in line with Rizky Hafidzah's 2017 research on SADARI knowledge and behavior, which found that the majority of respondents (24.9%) had insufficient knowledge about SADARI. Furthermore, almost half of the respondents (49.8%) exhibited negative behavior towards SADARI. The analysis showed a p-value of 0.003 (<0.05), indicating a significant relationship between SADARI knowledge and behavior. This means that having knowledge about SADARI is important in promoting positive behavior towards breast self-examination.

The researcher assumes that mothers with poor knowledge will have negative behavior towards SADARI examination, while mothers with good knowledge will have positive behavior.

CONCLUSION

- 1) The majority of participants (52.5%) of pregnant women at BPM Tati Karwati Tangerang had poor knowledge about SADARI.
- 2) The majority of participants (57.5%) of pregnant women at BPM Tati Karwati Tangerang had poor SADARI behavior.
- 3) At BPM Tati Karwati Tangerang in 2021, there is a significant relationship between pregnant women's knowledge level and SADARI

behavior. The chi-square correlation test shows a p-value of 0.001, indicating a strong correlation.

SUGGESTIONS

Pregnant women should increase their awareness and knowledge about SADARI and breast cancer to practice it correctly and regularly.

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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 ≤ 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 ≤ 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, polymenorrhea, 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
Usage > 1 Year	16	34.8	30	65.2	46	100		(1,569-7,533)

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 α ($0.003 < 0.05$), 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 (≤ 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 ($p\text{-value} = 0.003$). 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 ($p\text{-value} = 0.04$). 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 ($p\text{-value} = 0.001$).

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.

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THE COMBINATION OF GIVING WARM COMPRESSES AND LAVENDER AROMATHERAPY TO REDUCE THE INTENSITY OF LABOR PAIN DURING THE FIRST ACTIVE PHASE

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ABSTRAK : KOMBINASI PEMBERIAN KOMPRES HANGAT DAN AROMATERAPI LAVENDER UNTUK MENGURANGI INTENSITAS NYERI PERSALINAN PADA FASE AKTIF PERTAMA

Latar Belakang: Nyeri saat persalinan merupakan manifestasi dari kontraksi otot rahim. Nyeri persalinan dapat menimbulkan stres yang menyebabkan pelepasan hormon seperti katekolamin dan steroid secara berlebihan, yang secara langsung dapat mempengaruhi kontraksi rahim dan secara tidak langsung mempengaruhi kondisi janin. Penurunan intensitas nyeri persalinan dapat ditangani secara nonfarmakologis, antara lain dengan pemberian kombinasi kompres hangat dan aromaterapi lavender.

Tujuan: Penelitian ini bertujuan untuk mengetahui pengaruh kombinasi kompres hangat dan aromaterapi lavender terhadap penurunan intensitas nyeri persalinan fase aktif I di RS Akhmad Berahim.

Metode: Penelitian ini merupakan penelitian kuantitatif dengan menggunakan desain pre-experiment group pretest-posttest design. Metode pengambilan sampel menggunakan nonprobability sampling dengan teknik purposive sampling sebanyak 27 orang. Instrumen yang digunakan adalah SOP kombinasi pemberian kompres hangat dan aromaterapi lavender serta lembar observasi numerik rating scale (NRS). Data dianalisis menggunakan uji Wilcoxon.

Hasil : Dari 27 responden sebelum dilakukan kombinasi kompres hangat dan aromaterapi lavender mayoritas mengalami nyeri berat sebanyak 24 orang (88,9%), nyeri sedang sebanyak 3 orang (11,1%), dan setelah dilakukan kombinasi kompres hangat dan aromaterapi lavender sebanyak 3 orang (11,1%) mengalami nyeri berat, 24 orang (88,9%) mengalami nyeri sedang.

Kesimpulan: Penelitian ini menunjukkan nilai p-value 0,000 yang menunjukkan bahwa terdapat pengaruh kombinasi pemberian kompres hangat dan aromaterapi lavender terhadap penurunan intensitas nyeri persalinan fase aktif I di RS Akhmad Berahim.

Saran Diharapkan kepada bidan dapat mengenal berbagai macam terapi non farmakologi untuk mengatasi nyeri persalinan salah satunya terapi kompres hangat dan aromaterapi lavender. Penggunaan aromaterapi lavender dan kompres hangat pada saat persalinan aktif dapat membantu mengurangi nyeri saat persalinan

Kata Kunci : Aromaterapi Lavender, Kompres Hangat, Nyeri Persalinan

ABSTRACT

Background: Pain during labour is a manifestation of uterine muscle contractions. Labour pain can cause stress, which causes excessive release of hormones such as catecholamines and steroids, which can directly influence uterine contractions and indirectly influence the condition of the fetus. Reducing the intensity of labour pain can be managed non-pharmacologically, including by administering a combination of warm compresses and lavender aromatherapy.

Purpose: This study aimed to determine the effect of combining warm compresses and lavender aromatherapy on reducing the intensity of labour pain in the first active phase at Akhmad Berahim Hospital.

Method: This was quantitative research using a pre-experiment group pretest-posttest design. The sampling method used nonprobability sampling with a purposive sampling technique of 27 people. The instrument used an SOP for a combination of giving warm compresses and lavender aromatherapy and a numeric rating scale (NRS) observation sheet. Data were analyzed using the Wilcoxon test.

Results: Of the 27 respondents before the combination of warm compresses and lavender aromatherapy, the majority experienced severe pain, 24 people (88.9%), three people experienced moderate pain (11.1%), and after the combination of warm compresses and lavender aromatherapy three people (11.1%) experienced severe pain, 24 people (88.9%) experienced moderate pain.

Conclusion: This study indicates that the p-value is 0.000, which shows that there is an effect of the combination of giving warm compresses and lavender aromatherapy on reducing the intensity of labour pain during the first active phase at Akhmad Berahim Hospital.

Suggestion It is expected that midwives can get to know various kinds of non-pharmacological therapies to overcome labor pain, one of which is warm compress therapy and lavender aromatherapy. The use of lavender aromatherapy and hangan compresses during active labor when I can help reduce pain during

Keywords: *Labor Pain, Lavender Aromatherapy, Warm Compress*

INTRODUCTION

Childbirth is a normal physiological event. However, labor does not always run normally because there are several complications of the labor process (Irawati et al, 2019). In labor, labor pain is inseparable. Physiologically, all women who give birth will experience pain during labor and statistically labor pain cannot be tolerated by two out of three maternity mothers (Sari & Riona Sanjaya, 2020).

In their study, Sagita & Martina, (2019) stated that labor pain can cause stress which causes excessive release of hormones such as catecholamines and steroids. This hormone can cause smooth muscle tension and vasoconstriction of blood vessels. This can result in decreased uterine contractions, decreased uteroplacental circulation, reduced blood and oxygen flow to the uterus, and the onset of uterine ischemia which makes implus pain multiply. At the time of 1 delivery, pain is felt with the most dominant and long time. During the period when the first phase is active, most mothers experience severe pain because uterine activity begins to be more active, uterine contractions become longer, stronger, and more frequent (Seftianingtyas et al., 2021). If the pain problem is not resolved, it will cause several symptoms such as anxiety, fear, and stress which will increase the intensity of pain (Capri, M et al., 2023).

According to the World Health Organization (WHO), this labor pain can cause mothers to prefer other labor alternatives to avoid labor pain, namely sectio caesarea labor (Tangkas & Suarmini, 2020). Research in the UK shows that 93.5% of women describe pain as severe and unbearable, while in Finland 80% describe pain as very severe pain (Sari & Riona Sanjaya, 2020). Research in Australia reports the level of labor pain in women will differ based on each opening, at 0-3 cm opening moderate pain, 4-7 cm opening is severe pain and 8 cm > opening is unbearable (Hariyanti & Astuti, 2021).

Ningrum said in (Sari & Riona Sanjaya, 2020) 90% of the labor process in Indonesia is still accompanied by pain, although in some people who have advanced childbirth without being accompanied by pain around 7-14%. Other studies suggest that

maternity mothers will experience severe pain, only about 2-4% experience mild pain (Seftianingtyas et al., 2021). In the 2017 IDHS survey, the most labor complications were anxiety or severe pain as much as 53.5% and prolonged labor as much as 40.6% (Hariyanti & Astuti, 2021). Pain conditions that are not managed properly can worsen MMR that has not reached the national target of 359 per 100,000 KH (Sari & Riona Sanjaya, 2020).

According to data from the Ministry of Health of the Republic of Indonesia (Kemenkes RI, (2022) in North Kalimantan province in 2021, 92.5% of childbirth assisted by health workers was 92.5%. Based on the results of research at Soemarno Sostroatmodjo Hospital, Tanjung Selor, North Kalimantan, with a total sample of 30 maternity mothers during the active phase I, there were 25 maternity mothers experiencing severe pain and 5 maternity mothers with moderate pain (Tempang Sanni, 2023). In Tana Tidung Regency in January-December 2022, there were 72.13% of maternity mothers who gave birth spontaneously vaginally and 27.86% of maternity mothers who were referred due to labor complications that occurred and could not be handled (RSUD Akhmad Berahim, 2022). Based on the results of a preliminary study conducted with interviews on May 8-19, 2023 in the delivery room of RSUD Akhmad Berahim where 15 samples of maternity mothers during the first phase were active, researchers obtained data that 12 out of 15 respondents said severe and unbearable pain, seemed restless, unsettled and uncomfortable in the abdominal area through backwards when contractions occurred and 3 maternity mothers who experienced pain when contractions occurred but did not experience anxiety and remain calm in responding to the labor process.

Efforts in handling labor pain management when 1 active phase is carried out at RSUD Akhmad Berahim based on preliminary studies are in the form of labor companions either by husbands or families, relaxation techniques and adjusting the position as comfortable as possible for maternity mothers. To maximize the efforts that have been made, researchers are interested in reducing labor pain in

other non-pharmacological ways, namely by using warm compresses in combination with lavender aromatherapy.

One non-pharmacological method to reduce pain during labor is by means of warm compresses, warm compresses have a very low risk, are cheap, simple and without adverse effects and can increase the comfort of maternity mothers (Fitri Hastutining D et.al, 2022).

In previous research, aromatherapy has been widely used to help reduce natural pain and even overcome psychological disorders and comfort disorders such as anxiety, stress, depression and so on (Hatami Rad, 2021). The results showed that labor pain was reduced with lavender aromatherapy, as evidenced by the average pain intensity in the intervention group before lavender aromatherapy (pretest) was 6.80, while after being given aromatherapy (posttest), the average pain intensity was 5.67, resulting in a decrease in pain intensity by 1.13 points (Darmawan et al., 2022). In addition to aromatherapy, one way to reduce labor pain is to give warm compresses in the early phases of labor because it can cause a decrease in fatigue, relaxation of muscle spasms, increased comfort, and decreased anxiety. The results of the study (Kholisoh et al., 2022) showed that the average intensity of labor pain during the active phase I experienced a significant decrease ranging from 8.3 to 6.7. Both of these non-pharmacological treatments are expected to help reduce the intensity of pain in maternity mothers during the active phase 1.

Labor pain when I is severe pain with a relatively long time so it needs to be considered in the handling and management of pain management (Choirunissa et al., 2021). Management and monitoring of labor pain, is very important especially at this stage, because it determines whether the mother can deliver vaginally or ends up with an action or referral due to complications caused by labor pain (Seftianingtyas et al., 2021). Mender said that pain is physiological, but if not handled properly it will increase pain and can have a negative impact on

both mother and fetus including postpartum depression, bleeding, old partus, increased blood pressure and pulse, fetal hypoxia, and increased anxiety and fear (Juliani, W. Sanjaya et al., 2020). Therefore, treatment is needed to overcome labor pain so as to allow mothers to adapt to the pain (Juliani, W. Sanjaya et al., 2020). Therefore, researchers estimate that the application of a combination of the use of warm compresses and lavender aromatherapy by inhalation will be more effective in influencing labor pain so that it is expected to reduce the intensity of pain in maternity mothers when 1 phase is active.

Based on these data, researchers are interested in proving the effect of the combination of warm compresses and lavender aromatherapy on reducing the intensity of labor pain during 1 active phase.

RESEARCH METHODS

Type of quantitative research with pre-experimental research methods with one group pretest-posttest design approach. The population of this study is all maternity mothers during the active phase 1 from April to June 2023 totaling 82 maternity mothers. Purposive sampling *sampling* dengan set a minimum sample size calculation using the G*Power 3.1.9.2 application obtained as many as 27 respondents. The research was conducted at RSUD Akhmad Berahim, Samarinda. The instrument uses a numeric rating scale (NRS). Analysis of univariate and bivariate data (t-test).

RESEARCH RESULTS

Based on table 1 above, it was obtained that from 27 respondents, it showed that the characteristics of young people at risk (<20 years) were 4 people (14.8%), and most of them were aged 20-35 years or age not at risk as many as 18 people (66.7%), had a high school education as many as 10 people (37.0%), as housewives as many as 19 people (70.4%) and the frequency of first pregnancy as many as 8 people (29.6%).

Table 1
Characteristics of Respondents at RSUD Akhmad Berahim

Characteristics Respondents	Frequency	Persentase (%)
Age		
Young age at risk (< 20 years)	4	14.8
Age is not at risk (20-35 years)	18	66.7
Old age at risk (> 35 years)	5	18.5
Education		
Primary School	2	7.4
Junior High School	8	29.6
Senior High School	10	37.0
College	7	25.9
Work		
Civil servants	5	18.5
Self employed	2	7.4
Private Employees	1	3.7
Housewives	19	70.4
Pregnancy Frequency		
First	8	29.6
Second	5	18.5
Third	7	25.9
Fourth and above	7	25.9

Univariate Analysis

From the data in the table, it can be seen that the level of labor pain during the first active phase at RSUD Akhmad Berahim, Samarinda before the intervention of giving warm compresses and lavender aromatherapy, of the 27 respondents

mostly experienced severe pain as many as 24 people (88.9%), who experienced moderate pain as many as 3 people (11.1%), while those who did not experience pain, mild pain and very severe pain did not exist.

Table 2
Labor Pain When I Active Phase Before Intervention at RSUD Akhmad Berahim

Labor Pain During the Active Phase I (Before)	Frequency	Persentase %
Painless	0	0
Mild pain	0	0
Moderate pain	3	11,1
Severe Pain	24	88,9
Very severe pain	0	0

Table 3
Labor Pain When I Active Phase After Intervention at RSUD Akhmad Berahim

Labor Pain During the Active Phase I (After)	Frequency	Persentase %
Painless	0	0
Mild pain	0	0
Moderate pain	24	88,9
Severe Pain	3	11,1
Very severe pain	0	0

From the data in the table, it is known that the level of labor pain during the first active phase at

RSUD Akhmad Berahim, Samarinda before the intervention of giving warm compresses and

lavender aromatherapy, of the 27 respondents, most of them experienced moderate pain as many as 24 people (88.9%), who experienced severe pain as many as 3 people (11.1%) while those who did not experience pain, mild pain and very severe pain did not exist.

Bivariate Analysis

From the table data, it is known that there were 21 maternity mothers who experienced a

decrease in labor pain levels after being given an intervention in the form of a combination of warm compresses and lavender aromatherapy, and 6 maternity mothers did not experience changes in the intensity of labor pain. The Wilcoxon test produces a $p\text{-value} = 0.000$ ($\alpha < 0.05$) it can be concluded that there is a difference in labor pain during the active phase I before and after the intervention.

Table 4
Differences in Labor Pain During the Active Phase Before and After Intervention at RSUD Akhmad Berahim 2023

		N	Mean Rank	Sum of Ranks	Z	p- Value
Nyeri Persalinan Post Kategori - Nyeri Persalinan Pre Kategori	Negative Ranks	21	11,00	231		
	Positive Ranks	0	0	0	-4,583	0,000
	Ties	6				

DISCUSSION

Intensity of Labor Pain During the Active Phase Before a Combination of Warm Compresses and Lavender Aromatherapy

Based on the results of the analysis, it was found that before the combination of warm compresses and lavender aromatherapy, of the 27 respondents, most experienced severe pain, 24 people (88.9%), as many as 3 people (11.1%) experienced moderate pain, while those who experienced no pain, mild pain and very severe pain did not exist.

The International Association for the Study of Pain (IASP) defines pain as an unusually unpleasant sensory and emotional experience related to actual or potential (Karcioğlu et al., 2018). Pain is often described in terms of tissue destructive processes such as pricking, burning heat, twisting, such as emotions in feelings of fear, nausea and motion sickness (Fortune, 2020).

Labor pain at time I is visceral pain caused by changes in the cervix, distension of the lower segment of the uterus, stretching of tissue during opening, and pressure on surrounding structures and nerves, the pain will be felt in the lower abdomen (Yuandira et al, 2021). Referral pain occurs when pain originating from the uterus radiates to the abdominal wall, lumbosacral area in the back, buttocks, thighs and lower back Zweling in (Yuandira et al, 2021).

The pain felt will be heavier, sharper and result in the spread of pain sensations (Yuandira et al, 2021). It can be seen from the results of this study in labor when the I active phase was found that most maternity mothers experienced severe pain.

According to researchers that labor pain in maternity mothers who have a severe pain vulnerability that is in the first phase of the active phase of the maximum dilation period where the contractions are getting stronger and more frequent, the duration of his is increasing and with the uterine contractions that are getting stronger, the decline in the fetal head will be faster so that in this phase is a very tiring and very heavy phase in maternity mothers.

This is in accordance with research conducted in Australia, the level of labor pain in women will differ based on each opening, at the opening 0-3 cm moderate pain, the opening of 4-7 cm is severe pain and the opening of the > 8 cm is unbearable pain (Sari & Riona Sanjaya, 2020).

The results showed that the largest frequency of maternity mothers who were respondents in this study was the age of 20-35 years, namely 18 people (66.7%). This shows that some respondents in reproductive age are healthy and physiologically at that age allows mothers to still be strong in withstanding labor pain. However, a person's pain response is very individual and is influenced by various factors such as environment, race, certain actions and also a person's coping mechanism in dealing with pain. This is in line with the results of Ayu & Supliyani's (2017) research; and Maryuni (2020) in the results of her research where the majority of respondents have the age of 20-35 years also stated that there is no relationship between age and the intensity of labor pain (Benly et al, 2023).

Then at the education level, the majority of high school education levels were obtained which were 10 people (37.0%). According to Nur (2021) in

(Benly et al, 2023) highly educated mothers will respond more rationally to the information provided and will think about the extent of the benefits they will get from the information. But in fact according to researchers that this does not happen to everyone, pain can appear in anyone and anywhere, almost all maternity mothers must feel pain, both in maternity mothers who have low education and who are highly educated. This is in line with research by Khoirunnisa et al., 2017 in (Benly et al, 2023) on maternal characteristics and response to labor pain shows that there is a weak correlation between education level and maternal labor pain intensity.

In the type of work, the majority of maternity mothers work as housewives, namely 19 people (70.4%). According to Chen et al., 2023; Gumy et al., 2022 in (Fitri Hastutining D.et.al, 2022) the type of work has no clear relationship with various pregnancy and childbirth problems. Non-working mothers have more free time so can concentrate only on their pregnancy and childbirth. Her free time can be used to find information about pregnancy and childbirth. But this has no effect on the pain felt by the mother during childbirth. Results from research by Irwan et al., 2019; Setiawati et al., 2022 is a $p > 0.05$ value which shows that there is no relationship between work and labor pain during 1 active phase. Work has no relationship with labor pain felt by maternity mothers during 1 active phase (Fitri Hastutining D.et.al, 2022).

The highest number of respondents' pregnancies was in the pregnancy of the first child, which was 8 people (29.8%). Research by Deng et al., 2021; Robert & Andrew, 2022 in (Fitri Hastutining D.et.al, 2022) pregnant women with primiparous parity still have no idea what happens during childbirth, while multiparous mothers already have an idea of pregnancy and the previous labor process, so that during pregnancy they tend to be more mentally and psychologically prepared. According to researchers, the pain sensation is generally felt very large, especially by mothers who have just undergone the delivery of their first child.

Mothers in labor during the first active phase require non-pharmacological pain reduction techniques that are easy to do and do not require expensive costs, can increase maternal comfort during childbirth and have an influence on effective coping on the labor experience such as warm compresses (Fitri Hastutining D.et.al, 2022) and lavender aromatherapy (Andini et al., 2022).

Warm compresses have a working principle of heat delivery through conduction where heat is attached to the affected area, namely on the back to improve blood circulation, provide comfort and

reduce client anxiety so that muscle relaxation occurs which causes muscle contractions to decrease and pain to decrease (Irawati et al, 2019).

Aromatherapy can provide beneficial fragrance effects either through the inhalation method or the topical method. Aromatherapy inhaled can have a relaxing effect on the physical and psychic. Lavender can increase alpha waves in the brain and these waves help to create a relaxed and calm state for the mother so that the pain felt by the mother can be reduced (Sagita & Martina, 2019).

The results of the study by (Parapat et al., 2022) found that from 12 respondents before being given a warm compress, the average intensity of labor pain during the active phase I was obtained the results showed that the average score of labor pain before giving warm water compresses was 7.33, while the average score of labor pain after being given warm compresses was 3.92. It can be concluded that after being given a warm compress, the average respondent experienced a decrease in the scale of labor pain, which was 3.41 points. The results of statistical tests using paired t-tests obtained p-values of $0.000 < 0.05$ there was an effect of giving warm water compresses on reducing the scale of pain in labor during the active phase I.

The results of the same study were also obtained by (Juliani, W. Sanjaya et al., 2020), it was found that from 16 respondents before being given lavender aromatherapy, the average intensity of labor pain during the active phase I was obtained 7.19 with a standard deviation of 1.601. Meanwhile, after lavender aromatherapy was given 5.50 with a standard deviation of 1.932 with paired t-test results, p value value $0.000 < 0.05$ there was an effect of lavender aromatherapy on reducing labor pain during the active phase I in childbirth women.

Intensity Of Labor Pain During The Active Phase After A Combination Of Warm Compresses And Lavender Aromatherapy

Based on the results of the analysis, it was found that after giving a combination of warm compresses and lavender aromatherapy, of the 27 respondents, most experienced moderate pain as many as 24 people (88.9%), who experienced severe pain as many as 3 people (11.1%) while those who did not experience pain, mild pain and very severe pain did not exist.

The data above shows that most mothers give birth after being given a combination of warm compresses and lavender aromatherapy experience moderate pain. The use of a combination of warm compresses and lavender aromatherapy during labor stimulates the release of neuromodulators, namely

endorphins and encafeine, which function as pain relievers that can produce a feeling of calm so that they can affect labor pain levels (Ma'rifah Umi et al, 2022).

According to researchers, the reduction to moderate pain after being given a combination of warm compresses and lavender aromatherapy because of the provision of warm compress therapy with hot bulbs wrapped in cloth in maternity mothers with the mother's position as comfortable as possible can reduce muscle tension and anxiety so that it can make the body feel relaxed because of the warmth of water that helps blood vessels dilate so that blood flow becomes smooth, while lavender aromatherapy is given to mothers Childbirth through a diffuser can create a feeling of calm and pleasure so that it affects in overcoming anxiety and pain so that the mother is more comfortable in labor.

The results of this study are supported by research conducted by (Ekawati & Norhapifah Hestri, 2020), it is known that the average intensity of pain in maternity mothers after being given warm compress hydrotherapy is moderate pain, there are differences in measurements before and after giving warm compress hydrotherapy interventions. Giving warm compresses can reduce pain where warmth can open the dilation of blood vessels and there will be a decrease in muscle tension so as to cause comfort, then the pain felt will decrease or disappear (Fitri Hastutining D.et.al, 2022).

Research by (Silangit & Kes, 2021), it is known that the average intensity of pain in maternity mothers after lavender aromatherapy is in moderate pain, it can be seen that there is a difference between measurements before and after intervention in the form of lavender aroamtherapy. Lavender aromatherapy is an essential oil that is well known for having a calming effect, having a relaxing and anti-neurodepressant effect. Because this oil can provide a feeling of calm, it can be used as stress management (Juliani, W. Sanjaya et al., 2020). The main ingredient of lavender aromatherapy is linalool acetate, which can relax and relax the nervous system and tense muscles. In addition, a few drops of lavender oil can help overcome insomnia, improve mood, reduce anxiety, increase alertness, and of course provide a relaxing effect (Juliani, W. Sanjaya et al., 2020).

The Effect of Giving a Combination of Warm Compresses and Lavender Aromatherapy on Reducing the Intensity of Labor Pain During the Active Phase Before and After at RSUD Akhmad Berahim 2023

Based on the results of the analysis, it was found that from 27 respondents, as many as 24 people experienced labor pain after the intervention giving a combination of warm compresses and lavender aromatherapy decreased compared to before the intervention. There were 6 respondents who did not experience a decrease in the intensity of labor pain after the intervention of giving a combination of warm compresses and lavender aromatherapy, this is because researchers categorize pain intensity but there is still a change in the number of NRS, it's just that the figure is still in the same pain category. None of the respondents experienced labor pain after the intervention, giving a combination of warm compresses and lavender aromatherapy increased compared to before the intervention. Obtained from the results of the Wilcoxon test P-Value value of $0.000 < 0.05$ so that H_a is accepted, which means there is an effect of the combination of warm compresses and lavender aromatherapy on reducing the intensity of labor pain during the active phase I at RSUD Akhmad Berahim

From the data above, it is known that most maternity mothers before being given a combination of warm compresses and lavender aromatherapy experience severe pain and after being given a combination of warm compresses and lavender aromatherapy experience moderate pain. There was a decrease in pain intensity before and after the combination of warm compresses and lavender aromatherapy.

According to researchers, this is because the pain felt by maternity mothers can be expertized by the warm sensation obtained from warm compresses, while lavender aromatherapy has a relaxing effect so that maternity mothers are able to control the sensation of pain during uterine contractions.

Warm compresses have the principle of delivering heat by conduction where due to heat transfer from hot bulbs into the back causes blood circulation to become smooth and muscle tension decreases so that pain from uterine contractions and smooth muscle contractions will be reduced (Ekawati & Norhapifah Hestri, 2020). While aromatherapy contains molecules that when released into the air as water vapor are inhaled through the nose and lungs then enter the bloodstream, along with that the steam will be passed to the limbic system which is responsible for the system of integration and expression of feelings, memories, emotions and physical stimuli. Lavender aromatherapy is very effective and beneficial when inhaled or used on the outside, because the sense of smell is closely related to human emotions. When lavender aromatherapy is

inhaled, the body will respond psychologically (Intanwati et al., 2022).

The results of research by (Kholisoh et al., 2022) namely the intensity of labor pain at Dinda Hospital in Tangerang City in 2022 found that the average labor pain before being given a warm compress was 8.3 (severe pain) and the average labor pain after being given a warm compress was 6.7 (moderate pain). Giving warm compresses will make respondents feel more comfortable. This is because warm compresses can increase blood flow to a part and reduce edema which will provide an analgesic effect by slowing down the rate of nerve delivery so that pain impulses reach the brain less and pain perception will decrease (Kholisoh et al., 2022).

The same results were also obtained by (Sagita & Martina, 2019), namely the intensity of labor pain at PMB Tri Yunida Kotabumi in 2019, the average labor pain before lavender aromatherapy was 7.03 (severe pain) and the average labor pain after lavender aromatherapy was 5.00 (moderate pain). Lavender aromatherapy can increase alpha waves in the brain, these waves help to create a relaxed and calm state for the mother so that the pain felt by the mother can be reduced (Sagita & Martina, 2019). Molecules from aromatherapy can stimulate the limbic system, which is the center of emotion where all emotional expression is generated and affects endocrine and autonomic nerves, which have a direct relationship with feelings and memories, and can reduce anxiety that affects pain because there is a direct relationship between pain and anxiety (Patimah & Sundari, 2020).

Lavender molecules and particles when inhaled will enter through the nose, then be received by nerve receptors as a good signal and then interpreted as a pleasant smell, then the message affects the limbic system as a person's emotional center. So that the nerves and blood vessels relax and finally pain is reduced according to Susilarini in (Sari, P. N., & Riona Sanjaya, 2020).

The findings of this study show that the combination of warm compresses and lavender aromatherapy is one way of an easy and practical non-pharmacological method in reducing labor pain. Warm compresses function to overcome or reduce pain, where heat can relieve ischemia by reducing uterine contractions and launching blood vessels so that they can relieve pain according to (Fitri Hastutining D.et.al, 2022). While lavender aromatherapy contains one of the derivatives of monostunned, namely linalool, linalool is the main active ingredient that plays a role in the anti-anxiety (relaxation) effect directly which will stimulate the

thalamus to secrete enkephalins, which act as pain relievers according to the Goddess in (Yuandira, et al, 2021).

CONCLUSION

Labor pain before the intervention of giving a combination of warm compresses and lavender aromatherapy was obtained from 27 respondents experiencing moderate pain as many as 3 people (11.1%), who experienced severe pain as many as 24 people (88.9%), while those who did not experience pain, mild pain and very severe pain did not exist.

Labor pain after the intervention of giving a combination of warm compresses and lavender aromatherapy was obtained from 27 respondents, most of whom experienced moderate pain as many as 24 people (88.9%), who experienced severe pain as many as 3 people (11.1%) while those who did not experience pain, mild pain and very severe pain did not exist.

Wilcoxon test results P-Value $0.000 < 0.05$ so that H_a is accepted which means there is an effect of a combination of warm compresses and lavender aromatherapy on reducing the intensity of labor pain during the active phase I at RSUD Akhmad Berahim.

SUGGESTION

It is expected that midwives can get to know various kinds of non-pharmacological therapies to overcome labor pain, one of which is warm compress therapy and lavender aromatherapy. The use of lavender aromatherapy and hangan compresses during active labor when I can help reduce pain during labor as an additional substitute for pharmacological therapy and also the use of warm compresses and lavender aromatherapy is very easy, cheap, and without side effects. For hospitals, this research can be used as material for making policies related to the management of labor pain therapy

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THE EFFECT OF BABY MASSAGE ON SMOOTH BOWEL MOVEMENTS IN CONSTIPATED TODDLERS AGED 12-24 MONTHS

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ABSTRAK: PENGARUH PIJAT BAYI TERHADAP KELANCARAN BAB PADA BALITA KONSTIPASI USIA 12-24

Latar Belakang: Konstipasi adalah suatu gejala sulit buang air besar yang ditandai dengan konsistensi feces yang keras, ukuran besar, dan penurunan frekuensi buang air besar. Konstipasi sering ditemukan pada anak dengan prevalensi kejadian sebanyak 0,3%-8%. Pijat merupakan suatu gerakan manipulasi jaringan lunak di area seluruh tubuh untuk memberikan kenyamanan kesehatan, seperti relaksasi, peningkatan kualitas tidur, menurunkan kecemasan, atau manfaat pada bagian fisik tertentu. Pijat pada abdomen dipikirkan dapat mendorong feces dengan peningkatan tekanan intraabdominal. Tujuan Penelitian: Untuk Mengetahui pengaruh pemberian pijat bayi terhadap kelancaran BAB pada Balita konstipasi usia 12-24 bulan di PMB Feby Yulistia Bandar Lampung. Metode Penelitian: Penelitian ini menggunakan metode *Quasi-Eksperimental* dengan design penelitian *one group pretest-posttest design*. Responden pada penelitian ini adalah balita berusia 12 – 24 bulan sebanyak 30 bayi di PMB Feby Yulistia, S.Tr.Keb., S.KM Bandar Lampung. Teknik pengambilan sampel menggunakan *non probability sampling* yaitu sebanyak 30 responden menggunakan kuesioner *Bristol Chart*. Analisis bivariat menggunakan uji *Wilcoxon*. Hasil: Berdasarkan penelitian yang telah dilakukan menggunakan uji *Wilcoxon* didapatkan nilai rata-rata kelancaran BAB pada balita konstipasi sebelum diberikan pijat sebesar 1.90 dengan standar deviasi 0.305. Sedangkan nilai rata-rata kelancaran BAB pada balita konstipasi sesudah diberikan pijat sebesar 2.80 dengan standar deviasi 0.484. Analisis Bivariat mendapatkan bahwa nilai perbedaan rata-rata kelancaran BAB pada balita konstipasi sebelum dan sesudah diberikan pijat sebesar 0.9 dengan Uji *Wilcoxon* mendapatkan $p = 0,000$ yang berarti terdapat pengaruh bermakna dari terapi pijat bayi terhadap kelancaran BAB pada balita konstipasi usia 12-24 bulan di PMB Feby Yulistia Bandar Lampung. Kesimpulan: Ada pengaruh pijat bayi terhadap kelancaran BAB pada balita konstipasi usia 12-24 bulan di PMB Feby Yulistia tahun 2023 dengan nilai p -value sebesar 0,000 (<0.05). Saran: Dapat diberikan pijat bayi untuk kelancaran BAB pada balita konstipasi Usia 12-24 bulan.

Kata Kunci : Balita, Konstipasi, Pijat bayi

ABSTRACT

Background: Constipation is a symptom of difficult bowel movements characterized by hard stool consistency, large size, and decreased frequency of bowel movements. Constipation is often found in children with a prevalence of 0.3%-8%. Massage is a movement of soft tissue manipulation in areas throughout the body to provide health comfort, such as relaxation, improved sleep quality, decreased anxiety, or benefits to certain physical parts. Abdominal massage is thought to encourage stool with increased intraabdominal pressure. Research purposes: To find out the effect of giving baby massage on the smooth bowel movements in constipated toddlers aged 12-24 months at PMB Feby Yulistia Bandar Lampung. Research methods: This research uses the method *Quasi-Experimental* with research design *one group pretest-posttest design*. Respondents in this study were toddlers aged 12-24 months as many as 30 babies at PMB Feby Yulistia, S.Tr.Keb., S.KM Bandar Lampung. Sampling technique using *non probability sampling* ie as many as 30 respondents using a questionnaire *Bristol Chart*. Bivariate analysis using test *Wilcoxon*. Results: Based on the research that has been done using the test *Wilcoxon* obtained the average smoothness of defecation in constipated toddlers before being given a massage of 1.90 with a standard deviation of 0.305. Meanwhile, the average smoothness of bowel movements in toddlers with constipation after being given a massage is 2.80 with a standard deviation of 0.484. Bivariate analysis found that the average difference in the fluency of bowel movements in constipated toddlers before and after being given a massage was 0.9 with the Test *Wilcoxon* obtained $p = 0.000$, which means that there is a significant effect of infant massage therapy on bowel movements in constipated toddlers aged 12-24 months at PMB Feby Yulistia Bandar Lampung. Conclusion: There is an effect of baby massage on the smooth bowel movements of constipated toddlers aged 12-

24 months at PMB Feby Yulistia in 2023 with a p-value of 0.000 (<0.05). Suggestion: Baby massage can be given to smooth bowel movements in constipated toddlers aged 12-24 months.

Keywords : Constipation, baby massage, Toddlers

INTRODUCTION

One indicator of infant and toddler health is the pattern of defecation. Defecation or defecation (defecation) is a process of evacuation of feces from the rectum, the contents of which are materials that are no longer used by the body and must be removed from the body. In normal children, the consistency of stool and frequency of defecation can vary. Breastfed babies may experience defecation after each breastfeeding or only once in 7-10 days. Formula-fed infants and older children may experience bowel movements every 2-3 days (Heryani, 2019).

Constipation is the inability to evacuate stool perfectly which is reflected in 3 aspects, namely: reduced frequency of visits than usual, harder stools than before and palpation of the abdomen palpated fecal masses (schibala). Constipation is a slowness or difficulty in defecation that occurs in 2 weeks or more and is enough to make the patient suffer. Constipation is a serious problem for newborns. If left untreated, it can cause intestinal blockage that requires surgery (Heryani, 2019).

Constipation is a digestive disorder characterized by difficulty or decreased frequency of bowel movements, frequency less than 3 times a week. Constipation in children usually begins with pain when defecating, so the child begins to hold back defecation to avoid the pain. When holding back bowel movements continues, the desire to defecate will begin to disappear, which will result in a buildup of feces so that it can cause feces to harden (Heryani, 2019). The accumulation of feces for a long time in the rectum will result in reduced peristalsis activity that pushes feces out, causing more stool retention. This will result in reduced rectal sensory ability (Heryani, 2019).

Treatment of constipation is carried out with pharmacological and non-pharmacological therapies. Massage therapy is part of non-pharmacological therapy. Massage therapy has been known to the public since ancient times, before the existence of drugs. Several studies that have been conducted previously show that there are many positive influences of massage, namely improving the immune system, relaxing the child's body, overcoming sleep difficulties, improving the growth and development process, preventing digestive disorders, launching bowel movements, improving the work of the respiratory, digestive and circulatory

systems (Suarsyaf, et al, 2015). In cases of constipation, the administration of massage therapy can accelerate the transit time of the colon so as to increase the frequency of bowel movements (Lamas, et al, 2010).

The prevalence of constipation in children is estimated at 0.3%-8%. This is in accordance with a retrospective study research by Leoning Baucke in 2015 obtained 2.9% prevalence of constipation in children to 1 year old and increased in the second year, which is around 10.1%. Prevalence data in Indonesia recorded 73.2% of children experiencing digestive problems, namely constipation and diarrhea. Research conducted by Setiawan 2016 states that 48% of babies experience chronic constipation. (Setiawan, 2016).

The impact of constipation itself includes abdominal pain, down or loss of appetite, fussiness, nausea and vomiting, weight loss, fecal stains on children's underwear, straining to pass feces that can cause small tears in the lining of the anal mucosa (anal fissure) and bleeding, and constipation increases the risk of urinary tract infections (UTIs) (Heryani, 2019).

Based on research conducted by Kristina Lamas, Lars Lindholm, Hans Steenlund, Birgitta Engstrom, and Catrine Jacobsson in 2009 entitled Effect of abdominal massage in management of constipation-A randomized controlled trial explains that massage therapy can reduce gastrointestinal symptoms, especially symptoms associated with constipation. In a study conducted by Hani suarsyaf and Dyah Wulan in 2015 entitled The Effect of Massage Therapy on Constipation explained that abdominal massage therapy can reduce constipation symptoms compared to pharmacological therapy. Baby massage can speed up the work of the colon, so the frequency of bowel movements increases.

Based on the above phenomenon, researchers are very interested in carrying out research to pursue this baby massage with the title "The Effect of Baby Massage on the Smoothness of Defecation in Constipation Toddlers aged 12-24 months at PMB Feby Yulistia Bandar Lampung".

RESEARCH METHODS

This type of research uses quantitative research with a quasi-experimental research design with a One Group pre-post test design approach. The

respondents in this study were toddlers aged 12-24 months as many as 30 babies at PMB Feby Yulistia, S.Tr.Keb., S.KM Bandar Lampung. The sampling technique uses non-probability sampling, which is as many as 30 respondents using the Bristol Chart questionnaire. The variable in this study was about the effect of infant massage on smooth bowel movements in constipated toddlers aged 12-24 months. The intervention given is a full body massage performed for 15-30 minutes. Data analysis is done with the help of a computer program (SPSS). Univariate analysis is performed to determine the frequency distribution. Bivariate analysis using the Wilcoxon test.

RESEARCH RESULTS

Table 1
Frequency Distribution of Respondents Smooth Defecation in Constipation Toddlers Age 12-24 Months Before Giving Baby Massage at PMB Feby Yulistia

Characteristic	Total (N)	Percentage (%)
Age 12-14 months	14	46,7
14-17 months	8	26,7
18-20 months	4	13,3
21-24 months	4	13,3
Gender:		
Male	13	43,3
Female	17	56,7
Types of Food		
Instant Food	16	53,3
Make Your Own Food	14	46,7
Total Fluid Intake per day		
<1150 cc	19	63,3
>1300 cc	11	36,7

Based on table 1 above, it explains that from 30 respondents, the majority of respondents aged 12-14 months there are 14 people (46.7%), based on gender, the majority of respondents are female, there are 17 people (56.7%), based on the type of food, the majority of respondents eat instant food, there are 16 people (53.3%), and based on the amount of fluid intake per day, the majority of respondents <1150cc, there are 19 people (63.3%).

Bivariate Analysis

Table 4
Differences in fecal types aged 12-24 months before and after baby massage at PMB Feby Yulistia

Category	Mean	SD	Selisih	p-value
Smooth defecation before massage	1,90	0,305	0,9	0,000
Smooth bowel movements after massage	2,80	0,484		

Based on table 4 above, it shows that there is a change in the type of feces with an average value of 0.9. The results of the Wilcoxon test obtained a p-value of 0.000 (<0.05) meaning that there is a significant difference between before and after baby massage, so it can be concluded that there is an

effect of infant massage on smooth bowel movements in constipated toddlers aged 12-24 months.

Univariate Analysis

Table 2
Distribution of Smooth Defecation in Constipation Toddlers Aged 12-24 Months Before Giving Baby Massage at PMB Feby Yulistia

Category	N	Mean	SD	Min-Max
Pretest	30	1,90	0,305	1 – 2

Based on Table 2 shows that before giving baby massage, the average type of feces smooth defecation in toddlers is constipated with a value of 1.90 (SD + 0.305) and a min-max value of 1-2.

Table 3
Distribution of Smooth Defecation in Constipation Toddlers Aged 12-24 Months After Giving Baby Massage at PMB Feby Yulistia

Category	N	Mean	SD	Min-Max
(Posttest)	30	2,80	0,484	1 – 3

Based on Table 3 shows that after giving baby massage, the average type of feces smooth defecation in toddlers is constipated with a value of 2.80 (SD + 0.484) and a min-max value of 1-3.

DISCUSSION

Univariate Analysis

Based on the results of research that has been conducted shows that before giving baby massage, the average type of feces smooth defecation in toddlers Constipation with a value of 1.90 (SD + 0.305) and a min-max value of 1-2. Meanwhile, after giving baby massage, the average type of feces smooth defecation in toddlers is constipated with a value of 2.80 (SD + 0.484) and a min-max value of 1-3. The results showed that baby massage was able to facilitate bowel movements in constipated toddlers, where toddlers showed changes in the type of feces, babies were not fussy, babies did not have difficulty defecating.

According to the theory of Rukiyah and Yulianti (2010) states that the causes of constipation are the natural tendency of longer bowel movements, poor nutrition, some drugs that cause constipation, bad bowel habits, lack of fluid intake, lack of physical activity, the presence of conditions that cause pain, forced toilet training, sometimes constipation occurs due to sexual abuse.

Strengthened by research conducted by Parasita, Niluh Ayu, et al (2021) Based on the results of the study, 12 respondents (100%) respondents experienced constipation with fecal types 1 and 2 before baby massage.

In the opinion of researchers, constipation in toddlers can cause low body resistance, decreased or decreased appetite, fussiness, nausea and vomiting, weight loss, and can cause small tears in the mucosa and bleeding when toddlers strain. Therefore, parents are expected to always pay attention to whether the child has the characteristics of constipation or is experiencing constipation.

The results of this research are in line with the theory of Muzal and Endyarni (2016) which states that massage on the body is believed to stimulate local blood circulation. Blood vessels in the area of the body being massaged will experience dilation and blood flow in the area massaged increases. Based on this theory, it is assumed that by stimulating blood circulation, it can launch blood circulation to the digestive organs.

Baby massage as touch therapy has many positive benefits that can support the baby and his development and can be a complementary therapy in babies with constipation. Baby massage has benefits to launch the baby's digestive system and help to relax so that the baby feels fussy and not fussy. (Bennett, Underdown, and Barlow 2013).

Massage can stimulate the nervous system and hormones. Massage is a tactile stimulation on the surface of the skin and stimulates the surrounding innervation. Nerve cells will work to

provide information to the brain, so that the brain can instruct the enzyme ODC (Ornithin Decarboxylase) to increase its production. These enzymes work to be a guide for cell and tissue growth. The growth of cells and tissues is useful for repairing digestive conditions damaged by the invasion of microorganisms. (Surano, 2011).

This is in line with research conducted by Parasita, Niluh Ayu, et al (2021) the results showed that most after the massage of babies experienced changes in fecal type to type 3, which was 10 respondents (83.4%).

Baby massage therapy has been shown to have an effect on babies who are constipated. According to Underdown in from Warwick Medical School, the Institute of Education and the University of Warwick Coventry states that massage on infants and toddlers can improve their physical health and mental endurance. (Xu et al. 2014).

Based on the research that has been done, researchers argue that there are changes before and after massage in constipation toddlers because baby massage has benefits to launch the baby's digestive system and help to relax so that the baby feels fussy and not fussy.

Bivariate Analysis

Based on the results of research that has been done shows that there is a change in the type of feces with an average value of 0.9. The results of the Wilcoxon test obtained a p-value of 0.000 (<0.05) meaning that there is a significant difference between before and after baby massage, so it can be concluded that there is an effect of infant massage on smooth bowel movements in constipated toddlers aged 12-24 months. The results showed that baby massage was able to facilitate bowel movements in constipated toddlers, where toddlers showed changes in the type of feces, babies were not fussy, babies did not have difficulty defecating.

According to Hani suarsyaf and Dyah Wulan in 2015 with the title The Effect of Massage Therapy on Constipation explained that abdominal massage therapy can reduce constipation symptoms compared to pharmacological therapy. Baby massage can speed up the work of the colon, so the frequency of bowel movements increases. After baby massage, the study found a change in the type of stool to type 3 as many as 25 respondents (73.3%).

According to Ferius (2008) massage therapy has been carried out since ancient times before the existence of drugs. Several studies on massage have been conducted and it has been found that massage therapy has a good impact associated with conditions and diseases in children. Among the

benefits of massage therapy is blood circulation, healing, and growth.

Based on the research that has been done, researchers think babies who are given massage can stimulate the nervous system and hormones. Massage is a tactile stimulation on the surface of the skin and stimulates the surrounding innervation. Nerve cells will work to provide information to the brain, so that the brain can instruct the enzyme ODC (Ornithin Decarboxylase) to increase its production. These enzymes work to be a guide for cell and tissue growth. The growth of cells and tissues is useful for repairing digestive conditions damaged by the invasion of microorganisms. Launch the baby's digestive system and help to relax so that the baby feels comfortable and not fussy.

CONCLUSION

There is an effect of baby massage on smooth defecation in constipated toddlers aged 12-24 months at PMB Feby Yulistia Bandar Lampung in 2023 (p-value $0.00 < 0.05$)

SUGGESTION

It is expected to be able to add information and education to disseminate the experience gained, especially infant massage therapy on the smooth defecation in toddlers aged 12-24 months so that it can be information for mothers who have toddlers.

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THE EFFECT OF GIVING HOT DARK CHOCOLATE ON DYSMENORRHOEA IN ADOLESCENT

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ABSTRAK : PENGARUH PEMBERIAN *HOT DARK CHOCOLATE* TERHADAP DISMENORE PADA REMAJA PUTRI

Latar Belakang: Dismenore perlu diwaspadai karena dapat mengganggu aktivitas dan konsentrasi belajar dikelas, biasanya terjadi di daerah perut bagian bawah, pinggang hingga menjalar ke kaki. Di Indonesia angka kejadian dismenoreia sebesar 107.673 jiwa (64, 25%), yang terdiri dari 59.671 jiwa (54, 89%) mengalami dismenore primer dan 9.496 jiwa (9,36%) mengalami dismenore sekunder. Penanganan dismenoreia dapat dilakukan dengan cara non farmakologi salah satu nya dengan mengkonsumsi *hot dark chocolate*.

Tujuan: Untuk mengetahui Pengaruh Pemberian *Hot Dark Chocolate* terhadap Dismenore pada Remaja Putri Kelas IX Di SMPN 1 Muara Gembong Bekasi Tahun 2024.

Metodologi: Design yang digunakan dalam penelitian ini adalah *Quasy – Eksperimental* dengan *two group pretest – posttest*. Jumlah sampel 30 responden yang terdiri dari 15 responden pada kelompok intervensi dan 15 kelompok kontrol dengan teknik *Purposive Sampling*. Instrument yang digunakan adalah *Numeric Rating Scale* dan lembar observasi. Data dianalisis menggunakan uji *Paired T-test* dan *Independent T-test*.

Hasil Penelitian: Rata-rata nyeri haid sebelum diberikan *hot dark chocolate* adalah 7,67 dengan standar deviasi 1,447. Rata-rata nyeri haid setelah diberikan *hot dark chocolate* adalah 4,67 dengan standar deviasi 1,838.

Simpulan : Ada pengaruh pemberian *hot dark chocolate* terhadap dismenore pada remaja putri kelas IX di SMPN 1 Muara Gembong Bekasi tahun 2024.

Saran: Diharapkan remaja putri dapat mengonsumsi *hot dark chocolate* sebagai salah satu tindakan non farmakologi untuk meringankan dismenore dan membantu remaja putri untuk mengurangi konsumsi obat-obatan.

Kata kunci : Dismenore, *Hot Dark Chocolate*, Remaja Putri

ABSTRACT

Background: Dysmenorrhea needs to be watched out for because it can interfere with learning activities and concentration in class, usually occurring in the lower abdomen, waist and spreading to the legs. In Indonesia, the incidence of dysmenorrhea is 107,673 people (64.25%), consisting of 59,671 people (54.89%) experiencing primary dysmenorrhea and 9,496 people (9.36%) experiencing secondary dysmenorrhea. Dysmenorrhoea can be treated using non-pharmacological methods, one of which is by consuming *hot dark chocolate*.

Purpose: To determine the effect of giving *hot dark chocolate* on dysmenorrhea in young women in class IX at SMPN 1 Muara Gembong Bekasi in 2024.

Method: The design used in this research is *Quasy - Experimental* with *two group pretest - posttest*. The total sample was 30 respondents consisting of 15 respondents in the intervention group and 15 in the control group using the *Purposive Sampling* technique. The instruments used were the *Numeric Rating Scale* and observation sheets. Data were analyzed using the *Paired T-test* and *Independent T-test*.

Results: The average menstrual pain before being given *hot dark chocolate* was 7.67 with a standard deviation of 1.447. The average menstrual pain after being given *hot dark chocolate* was 4.67 with a standard deviation of 1.838.

Conclusion: There is an effect of giving *hot dark chocolate* on dysmenorrhea in class IX teenage girls at SMPN 1 Muara Gembong Bekasi in 2024.

Suggestion: It is hoped that young women can consume *hot dark chocolate* as a non-pharmacological measure to relieve dysmenorrhea and help young women reduce their consumption of drugs.

Keywords: Dysmenorrhea, *Hot Dark Chocolate*, Young Women

INTRODUCTION

Adolescents are characterized by the onset of menstruation. Menstruation occurs due to the release of the endometrial wall. The menstrual period of every teenager does not always run smoothly. One of the menstrual disorders is dysmenorrhea or menstrual pain. Dysmenorrhea consists of cramps, pain, and other discomforts associated with menstruation. In some women this pain can interfere with daily activities (Ikawati & Syamsuryanita, 2022)

WHO (World Health Organization) data in 2020, the incidence of dysmenorrhea is very high with 1,769,425 (90%) women suffering from dysmenorrhea, with 10-16% suffering from severe dysmenorrhea. On average, more than 50% of women suffer from dysmenorrhea. In Indonesia, the incidence of dysmenorrhea was 107,673 people (64.25%), consisting of 59,671 people (54.89%) experiencing primary dysmenorrhea and 9,496 people (9.36%) experiencing secondary dysmenorrhea. It is known that the prevalence of dysmenorrhea in West Java is 54.9% and in Bekasi City it reaches 63.2%. (Nurfitri et al., 2022)

Adolescent girls who experience dysmenorrhea when participating in learning activities that can interfere with their learning activities, can reduce concentration, disturbed sense of comfort, disturbed sleep patterns, disturbed appetite, disturbed interpersonal relationships. The impact of dysmenorrhea includes concentration in class (59%), sports (51%), class attendance (50%), social interaction (36%), homework (35%), ability tests (36%) and grades (29%). Therefore, dysmenorrhea is significantly associated with absenteeism, schoolwork, participation in sports, and socializing with friends. (Nurfitri et al., 2022)

Dysmenorrhea can be managed by pharmacological and non-pharmacological means. Drug therapy includes the administration of analgesics or Nonsteroidal anti-inflammatory Drugs (NSAIDs) that can relieve pain. Taking painkillers has some side effects, such as nausea, vomiting, constipation, restlessness and drowsiness. To reduce the use of chemical drugs, non-drug treatments are used, such as eating foods that release endorphins and serotonin, including *dark chocolate*. Chocolate not only stimulates the production of endorphins and serotonin, but also contains flavonoids that have antioxidant effects. (Hartinah et al., 2023)

There are several types of chocolate, such as white chocolate, milk chocolate and dark chocolate. Of the three types of chocolate, dark chocolate has the most benefits. Dark chocolate has no fat and contains only a small amount of sugar. In addition,

dark chocolate also has the highest cocoa content among other types of chocolate. Cocoa contains 13.12% antioxidants, while white chocolate only contains 6.74% antioxidants, which can protect cells in the body. (Oblitas & Ruiz, 2021) (Oblitas & Ruiz, 2021)

Dark chocolate is not only served in the form of chocolates in various forms and flavors, but is also often served in other appetizing food preparations such as cakes, ice cream, drinks, and more. Chocolate has various benefits for the body, such as releasing mood-boosting neurotransmitters and being high in antioxidants. It also contains vitamins and minerals, and stimulates the brain to release endorphins. Chocolate contains copper, which is used in the body to synthesize collagen and the neurotransmitter endorphin. Endorphin is a substance released by the body that inhibits pain impulses. The endorphin hormone will become a natural analgesic and natural tranquilizer so that it can reduce the intensity of pain such as menstrual pain (S. N. Asih et al., 2020)

The results of preliminary studies conducted by researchers on Monday, November 27, 2023 at SMPN 1 Muara Gembong obtained data on the number of ninth grade students as many as 63 people. The results of data collection were carried out to measure menstrual pain and treatment efforts made. It was obtained that 66.6% (42 adolescent girls) experienced dysmenorrhea during menstruation, with mild pain levels as much as 35.71% (15 students), moderate pain as much as 59.52% (25 students), and severe pain as much as 4.7% (2 students). The treatment carried out by some of these students was 52.38% (22 students) reducing menstrual pain with adequate rest, as many as 14.28% (6 students) stated by taking analgesic drugs and applying eucalyptus oil on the abdomen, and as many as 33.33% (14 students) with warm water compresses on the abdomen and often entering the UKS so they could not participate in learning activities. All respondents revealed that they experienced dysmenorrhea on the first and second day of menstruation with an average of moderate pain scale (4-6) as many as 70% of respondents and controlled severe pain scale (7-9) as many as 30% of respondents. While a survey of 10 respondents found the results that dysmenorrhea can interfere with daily activities such as not being able to concentrate while studying and the mood becomes chaotic. From these data, it shows that there are still many female students who experience dysmenorrhea which can interfere with school learning activities.

Based on the above background, the

researcher is interested in further research on the title " The Effect of Giving *Hot Dark Chocolate* on Dysmenorrhea in Class IX Adolescents SMPN 1 Muara Gembong Bekasi Year 2024".

RESEARCH METHODS

This research is a type of quantitative research using *quasy-experiment* (pseudo-experiment) , which is an experiment that has treatment, measurement of impact, experimental units, but does not use random assignment to create comparisons in order to conclude changes caused by treatment.

This research design uses *two group pre and post test with control group with Paired T-test* analysis, which was conducted to determine the effect of giving *hot dark chocolate* on dysmenorrhea in class IX adolescent girls at SMPN 1 Muara Gembong Bekasi in 2024. This *two group pre and post test* research design is a study that provides an initial test (*pretest*) before treatment, after treatment is given, then gives a final test (*posttest*). In this writing, the author obtained primary data collection collected directly from respondents using a questionnaire.

The population of adolescent girls in class IX at SMPN 1 Muara Gembong, namely: class 9.1 ; 16 people, class 9.2 ; 16 people, class 9.3 ; 15 people, 9.4 ; 16 people, 9.5 ; 15 people, a total of 78 people. Researchers took 30 adolescent girls in class IX SMP Negeri 1 Muara Gembong in 2023 who experienced dysmenorrhea, divided into 15 control group respondents and 15 experimental group respondents.

The sampling technique used in this study was *purposive sampling*. Non-random sampling where the researcher determines the identity that matches the research objectives so that it is expected to respond to the case. Samples that met the inclusion and exclusion criteria according to the research objectives were included in this study. The sample was 30 people, 15 interventions and 15 controls. By using *Purposive Sampling* technique, the sample size was obtained as many as 30 female students.

The research instruments used are sample identity forms (name, age of onset of menstruation, and age), *informed consent* sheets, NRS (*Numeric Rating Scale*) scales and observation sheets used to measure adolescent girls' dysmenorrhea pain scale. Univariate analysis was conducted to determine the average value of dysmenorrhea pain in the intervention group and control group on pretest and post test. Bivariate analysis was conducted to determine the effect of giving *hot dark chocolate*

using the *Paired T-test*.

RESULTS AND DISCUSSION

Univariate Analysis

Based on table 1 that most respondents have age, which is 14 years old. Most experienced their first menstruation (menarche) at the age of 13 years, a total of 14 respondents, and the majority of respondents experienced a length of menstruation of 7 days, a total of 11 respondents.

Table 1
Frequency Distribution of Characteristics of Class IX Adolescents with Dysmenorrhea in 2024 (n = 30)

Variables	Frequency (f)	Percentage (%)
Intervention Group		
Age		
14 years	5	33,3
15 years	8	53,3
16 years old	2	13,3
Age of Menarche		
12 years	6	40,0
13 years	6	40,0
14 years	3	20,0
Duration of Period		
5 days	5	33,3
6 days	3	20,0
7 days	6	40,0
8 days	1	6,7
Control Group		
Age		
14 years	9	60,0
15 years	4	26,7
16 years old	2	13,3
Age of Menarche		
12 years	5	33,3
13 years	8	53,3
14 years	2	13,3
Duration of Period		
4 days	1	6,7
5 days	5	33,3
6 days	4	26,7
7 days	5	33,3

Based on table 2 shows that the average dysmenorrhea pain before giving *hot dark chocolate*

is 7.67 with a standard deviation of 1.447 and the average dysmenorrhea pain after giving *hot dark chocolate* is 4.67 with a standard deviation of 1.838. Before giving *hot dark chocolate*, the minimum pain was 5 and the maximum was 10, after giving *hot dark*

chocolate, the minimum pain was 2 and the maximum was 8. These results show that there is a difference in the average value of reducing dysmenorrhea pain in adolescent girls in the group given intervention with *hot dark chocolate*.

Table 2
The average value of dysmenorrhea pain before and after giving *hot dark chocolate* to the intervention group in class IX adolescent girls at SMPN 1 Muara Gembong Bekasi 2024

Intervention Group	N	Min	Max	Mean	Std. Deviation
Pre test	15	5	10	7,67	1,447
Post test	15	2	8	4,67	1,838

Table 3 shows that the average dysmenorrhea pain of the control group before was 7.60 with a standard deviation of 1.681 and the average level of dysmenorrhea after was 7.00 with a standard deviation of 1.772. The minimum pain

before was 4 and the maximum was 10, the minimum pain after was 3 and the maximum was 10. These results show that there is a difference in the average value of the decrease in dysmenorrhea pain of adolescent girls in the control group.

Table 3
The average value of dysmenorrhea pain before and after the control group in class IX adolescent girls at SMPN 1 Muara Gembong Bekasi 2024

Control Group	N	Min	Max	Mean	Std. Deviation
Pre test	15	4	10	7,60	1,681
Post test	15	3	10	7,00	1,772

Bivariate Analysis

Table 4
Effect of reducing dysmenorrhea pain scale in adolescent girls in the intervention group and control group

Variable	Mean	Differen Mean	Std. Dev	Sig
Intervention Group				
Pre test	7.667	0,667	1.44749	0.000
Post Test	4.667		1.83874	
Control Group				
Pre test	7.600	2,33	1.68184	0.033
Post test	7.000		1.77281	

Based on the table 4 that in the intervention group there is difference in the average value of th dysmenorrhoea pain scale with a sig value of 0.000 <0.05, which means that there is an effect of the administration of hot dark chocolate in reducing the dysmenorrhoea pain scale in adolescent girls of class IX at SMPN 1 Muara Gembong Bekasi Year 2024. At control group there is a difference in the average value of the pain scale of dysmenorrhoea

with a sig value of 0.033 <0.05. dysmenorrhoea with a sig value of 0.033 <0.05, which means that there is an effect of relaxation techniques in reducing dysmenorrhoea pain scale in adolescent girls IX. influence of relaxation techniques in reducing the dysmenorrhoea pain scale on adolescent girls in class I X at SMPN 1 Muara Gembong Bekasi Year 2024.

Table 5
The Effect of *Hot Dark Chocolate* on Dysmenorrhea in Adolescents

Variable	Mean	t	Selisih mean	Sig
Post test	4.667			
Intervention Control	7.000	-3.538	2,333	0.001

Based on table 5, it can be seen that SMPN 1 Muara Gembong Bekasi calculated the average value (*mean*) of the posttest in the group given *hot dark chocolate* of 4.67 and the control group of 7.00, so that there is a difference in the average value between the intervention group and the control group with a Sig (2 tailed) value of 0.00, meaning that there is a significant difference in the average value of the dysmenorrhea pain scale in the intervention group and the control group with a difference in the average value of the dimenorrhea pain scale of -2.33, meaning that the intervention group has a lower / smaller pain scale after being given *hot dark chocolate*, it can be concluded that giving *hot dark chocolate* is more significant in reducing the dysmenorrhea pain scale.

DISCUSSION

The results showed at SMPN 1 Muara Gembong Bekasi that the intensity of dysmenorrhea pain in adolescent girls before the intervention had an average pain scale of 7.67 and the control group had an average pain scale of 7.60, while the dysmenorrhea pain scale after the intervention was 4.67 in the intervention group and 7.00 in the control group, which means that there is a decrease in the pain scale of dysmenorrhea in the intervention group.

This pain reduction mechanism can be explained by the gate control theory in (Potter, 2010) Pain intensity is lowered by blocking pain implants by endorphin whose release is triggered by the administration of *dark chocolate*, as well as the inhibition of pain implants by serotonin pain cues cannot be forwarded to the cornu dorsalis. (Arfailasufandi & Andiarna, 2018)

This study proves that there is a significant difference between the menstrual pain scale (dysmenorrhea) before giving *hot dark chocolate* and after giving *hot dark chocolate* which has been described in data analysis. This was tested on the results of the treatment of 30 respondents in class IX SMPN 1 Muara Gembong Bekasi at the beginning before the intervention. Furthermore, after treatment, the intensity of menstrual pain (dysmenorrhea) can be reduced.

The decrease in the menstrual pain scale after giving *hot dark chocolate* has also been proven by the results of the analysis by asih with the title the

effect of *dark chocolate* on reducing menstrual pain in adolescents in 2020. The average menstrual pain before being given *dark chocolate* therapy was 5.53 with a standard deviation of 0.507. The average menstrual pain after being given *dark chocolate* therapy is 3.5 with a standard deviation of 0.572. (S. N. Y. I. A. A. Asih, 2020)

Based on these facts and theories, the *hot dark chocolate* intervention has a positive effect on reducing and even eliminating menstrual pain (dysmenorrhea). The dose of hot dark chocolate according to (Fatkurrohman et al., 2023) *hot dark chocolate* was given to 1 group of 85 grams and 1 group was not given *hot dark chocolate*, it was concluded that giving *hot dark chocolate* had an effect on dysmenorrhea. The menstrual cycle in respondents for 1 month and irregular menstrual cycles are one of the risk factors that exacerbate the level of dysmenorrhea pain. The cause of the delay in menstruation is stress, the trigger for excessive stress experienced by female students because they think too much about final assignments and exams, making them stressed and eventually the menstrual cycle is late

Based on the assumptions of the researchers, the frequency of pain obtained varies in both the control and intervention groups, this depends on a person's pain threshold, on the post- test pain scale, the results of the effect of giving *hot dark chocolate* are obtained, this occurs because the endorphin hormone released by magnesium will affect the mood of adolescents, so that adolescents will be suggested to be calmer, this will divert feelings of pain in adolescents, besides that magnesium can relax the smooth muscles in the uterus.

The Effect of *Hot Dark Chocolate* on Dysmenorrhea in Adolescent Girls at SMPN 1 Muara Gembong Bekasi Year 2024

From the results of research conducted by researchers with theoretical concepts and related research results, the results of the *pre-test* and *post-test* scale reduction of 4.67 and the control group of 7.00, so it can be seen that the difference between the two groups is 2.33 and with a p-value of 0.001 <0.05. There is a significant effect of dysmenorrhea scale value after being given the intervention.

This is also supported by the theory Pech, J.

(2010). in (Sry Rezki Aulia, Masruroh, 2019) which explains that chocolate has various benefits for the body, such as releasing neurotransmitters that improve mood and is high in antioxidants. Chocolate also contains vitamins and minerals, and stimulates the brain to secrete endorphins. Chocolate contains magnesium which is used in the body to synthesize collagen and endorphins. Endorphins are substances released by the body that inhibit pain impulses. And serotonin will also keep the pain gate closed, serotonin deficiency will make sensitivity to pain increase, to increase serotonin levels can be stimulated in the body. pain will decrease even without intervention, because on the third day the increase in progesterone levels will decrease and the body will be able to adapt to pain so that it becomes accustomed to feelings of pain. (Rizky et al., 2022)

This research is in line with (Ikawati & Syamsuryanita, 2022) which suggests that there is an effect of giving dark chocolate on reducing the intensity of primary dysmenorrhea in adolescent girls. Other similar studies have also been conducted by ((Mulyatina, 2021) obtained the results of statistical tests showing that the average menstrual pain before being given dark chocolate was 4.07 with a standard deviation (SD) value of 0.640. Meanwhile, the average value of the menstrual pain scale after being given dark chocolate is 3.00 with a standard deviation (SD) of 0.743. The statistical test results show a P value of 0.014, which means that there is an effect of the menstrual pain scale before and after being given dark chocolate to adolescent girls in Alue Padee Village, Kuala Batee District, Southwest Aceh Regency.

Based on the results of data analysis that has been carried out, researchers assume that dark chocolate is a drink that provides a relaxing effect, the group that is not given *hot dark chocolate* does not experience a significant decrease in pain compared to the group given *hot dark chocolate*. So that giving *hot dark chocolate* can be one of the non-pharmacological therapies to reduce dysmenorrhea in adolescent girls, because *dark chocolate* can stimulate the brain to secrete endorphin hormones which function to inhibit pain impulses in the body besides that chocolate is also easy to get anywhere. So that dark chocolate can be applied as an alternative in dealing with dysmenorrhea. The results showed at SMPN 1 Muara Gembong Bekasi that the intensity of dysmenorrhea pain in adolescent girls before the intervention on average experienced a varied pain scale.

CONCLUSIONS

There is an effect of giving *hot dark chocolate* on dysmenorrhea in class IX adolescent girls at SMPN 1 Muara Gembong Bekasi in 2024 with a *p value* of $0.001 < 0.05$.

SUGGESTION

It is expected that young women can consume hot dark chocolate as one of the non-pharmacological measures to relieve dysmenorrhea and help young women to reduce taking drugs.

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THE EFFECT OF THE MEDICATION AND FOOD MONITORING PROGRAM (MFMP) ON ANEMIA IN PREGNANT WOMEN

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ABSTRAK PENGARUH PROGRAM PEMANTAUAN PENGOBATAN DAN MAKANAN (MFMP) TENTANG ANEMIA PADA IBU HAMIL

Latar Belakang: Anemia dianggap sebagai faktor risiko dan dapat mengakibatkan komplikasi yang mengancam kehidupan ibu dan janin. Program Pemantau Minum Obat Dan Makanan merupakan program yang bertanggung jawab dalam mengawasi ibu hamil dalam mengonsumsi obat serta makanan yang diperbolehkan.

Tujuan: Mengetahui pengaruh Program Pemantau Minum Obat Dan Makanan terhadap anemia pada ibu hamil di Puskesmas Pinang Jaya Tahun 2023.

Metode: Desain yang digunakan dalam penelitian ini adalah pre-eksperimental. Populasi pada penelitian ini adalah semua ibu hamil di Puskesmas Pinang Jaya Tahun 2023. Variabel independen adalah Program Pemantau Minum Obat Dan Makanan dan variabel dependen adalah kadar Hb. Pengumpulan data menggunakan lembar observasi. Analisis data menggunakan uji T Independen.

Hasil: skor pengetahuan sebelum (tidak PMOM) yaitu 10.175, dan standar deviasi .5475. Sedangkan rerata pengetahuan sesudah (tidak PMOM) yaitu 10.204, dan standar deviasi .5507 dari 56 responden. Sedangkan rerata skor pengetahuan sebelum (PMOM) yaitu 10.114, dan standar deviasi .7006. Sedangkan rerata pengetahuan sesudah (PMOM) yaitu 10.514, dan standar deviasi .6047 dari 56 responden.

Kesimpulan: Ada pengaruh PMOM terhadap anemia pada ibu hamil.

Saran: Bagi Puskesmas Pinang Jaya diharapkan dapat memberikan informasi yang berguna bagi pihak puskesmas dalam membuat kebijakan yang berkaitan dengan pencegahan anemia pada ibu hamil.

Kata kunci : PMOM, Anemia, Ibu Hamil

ABSTRACT

Background: Anemia is considered a risk factor and can lead to complications that threaten the life of the mother and fetus. The Medication and Food Monitoring Program (MFMP) is a program that is responsible for supervising pregnant women in consuming permitted drugs and food.

Objective: To determine the effect of the Medication and Food Monitoring Program on anemia in pregnant women at the Pinang Jaya Health Center in 2023.

Methods: The design used in this study was pre-experimental. The population in this study were all pregnant women at the Pinang Jaya Health Center in 2023. The independent variable was the Medication and Food Monitoring Program and the dependent variable was Hb levels. Data collection used an observation sheet. Data analysis used the Independent T test.

Results: Knowledge score (not MFMP) is 10.175, and standard deviation is 0.5475. While the average knowledge after (not MFMP) is 10.204, and the standard deviation is 0.5507 from 56 respondents. Meanwhile, the mean score of prior knowledge (MFMP) was 10.114, and the standard deviation was 0.7006. Meanwhile, the average post knowledge (MFMP) was 10.514, and the standard deviation was 0.6047 from 56 respondents.

Conclusion: There is an effect of MFMP on anemia in pregnant women.

Suggestion: It is hoped that the Pinang Jaya Community Health Center can provide useful information for the community health center in making policies related to the prevention of anemia in pregnant women.

Keywords: MFMP, Anemia, Pregnant Women

INTRODUCTION

The Maternal Mortality Rate (MMR) is an indicator of the success of maternal health efforts.

MMR is the ratio of maternal deaths during pregnancy, childbirth, and childbirth caused by pregnancy or their management but not due to other

causes such as accidents or falls in every 100,000 live births. Apart from being used to assess the success of maternal health programmes, MMR is also able to assess the health status of the community because of its sensitivity to health services, both in terms of accessibility and quality (Health Office of Bandar Lampung City, 2021). The MMR is a problem that is still a priority in the health sector, especially for mothers and children and that is a measure of the success of the government's intervention efforts in maternal health. According to World Health Organization (WHO) data, in 2017, as many as 295,000 women died during or after pregnancy and childbirth. Most of these deaths (94%) occur in areas with low resources (WHO, UNICEF & UNFPA, 2019). Indonesia's MMR ranks high compared to ASEAN countries, namely 305 per 100,000 live births. Based on the Sustainable Development Goals (SDGs), the MMR target is 70 per 100,000 live births in 2030 (SDGs, 2017; WHO, 2022).

The Ministry of Health of the Republic of Indonesia stated in 2020 that the causes of maternal death include bleeding (28.29%), hypertension in pregnancy (23.86%), and maternal death due to disorders of the circulatory system (4.94%) (The Ministry of Health of the Republic of Indonesia, 2021). According to research by Londok, Lengkong, and Suparman (2013), the most common bleeding in pregnancy is antepartum bleeding (placenta previa and placental abruption) and postpartum bleeding (uterine atony, retained placenta, and lower genital tract lacerations). Antepartum and postpartum bleeding is often found in anaemic women and is caused by anaemic women who cannot tolerate blood loss (Rukiyah & Yulianti, 2019). The risk of postpartum haemorrhage increases in pregnant women who experience severe anaemia (Manuaba, 2013).

WHO defines anaemia in pregnancy as a haemoglobin level < 11.0 g/dL. Anaemia is one of the most common complications of pregnancy. Anaemia is considered a risk factor and can result in complications that threaten the lives of the mother and fetus (Li *et al.*, 2018). Anaemia is estimated to contribute to more than 115,000 maternal deaths and 591,000 perinatal deaths globally per year (McLean *et al.*, 2009). Based on WHO data, 40% of pregnant women worldwide experience anaemia. 4 out of 10 ASEAN countries are in the severe category with a prevalence of 40%, including Cambodia (51.5%), Laos (47%), Myanmar (47.8%) and Indonesia (44.2%) (WHO, 2021). The percentage of anaemia in pregnant women in Indonesia has continued to increase from 2015 to 2019, from 42.1% to 44.2% (WHO, 2021).

Based on the Health Data Research (2018), the prevalence of anaemia in pregnant women was categorised according to age; the number of anaemic pregnant women aged 15–24 years was 84.6%, aged 25–34 years was 33.7%, aged 35–44 years was 33.6%, and 45–54 years of age was 24% (Central Bureau of Statistics, 2020). Based on the health profile of the city of Bandar Lampung, in 2021 it was recorded that 92.8% of pregnant women received 90 Fe tablets (Health Office of Bandar Lampung City, 2021). Even though the government has implemented a programme to control anaemia in pregnant women by giving 90 Fe tablets during pregnancy, the incidence of anaemia in pregnant women is still high, namely 44.2% (Central Bureau of Statistics, 2020; WHO, 2021).

The incidence of anaemia can be caused by several factors, including age, parity, frequency of antenatal care (ANC) visits, economic status, education level, and adherence to consumption of Fe tablets (Tampubolon, Lasamahu, & Panuntun, 2021; Yanti, Sulistianingsih, & Keisnawati, 2015). Research by Dewi and Mardiana (2021) at the Nusawungu II Cilacap Community Health Centre stated that 72.6% of pregnant women have low economic status, that affects the diet of pregnant women, which consequently puts them at risk of anaemia because the nutritional needs of pregnant women cannot be met properly.

The results of Nova & Irawati's research (2021) stated that there was a relationship between consumption of Fe tablets and the incidence of anaemia in pregnant women (*p*-value of 0.001), there were 41 respondents who consumed Fe tablets and were not anaemic, there were 5 respondents (61%), while respondents who consumed Fe tablets (14 respondents, 34%) had Fe tablets and experienced anaemia, and 2 respondents (5%) did not consume and experienced anaemia. The researchers also mentioned that knowledge among pregnant women regarding the benefits of Fe tablets was also one of the factors that influenced adherence to Fe tablet consumption. Research by Nurmasari & Sumarmi (2019) stated that there is a relationship between ANC visits and the incidence of anaemia in pregnant women. Pregnant women who do not regularly take ANC and do not adhere to taking Fe tablets experience anaemia, while pregnant women who do not regularly take ANC but are adherent to consuming Fe tablets experience anaemia. In pregnant women who regularly perform ANC and adhere to consuming Fe tablets, 73.33% do not experience anaemia, while in pregnant women who regularly perform ANC but do not adhere to consuming Fe tablets, 20% experience anaemia. During the ANC visit, pregnant women will get an

early anaemia examination, get proper nutritional counselling, and get complete iron and folic acid supplements, as well as adequate health education, so that the risk factors for anaemia can be suppressed (Melku, Addis, Alem, & Enawgaw, 2014).

Research by Tampubolon *et al.* (2021) concerning the factors for the occurrence of anaemia in pregnant women in Amahai District, Central Maluku Regency, showed that social and cultural factors are a factor in the occurrence of anaemia in pregnant women, with a percentage of 68%. The research results of Tampubolon *et al.* (2021) stated that most pregnant women said they were afraid of consuming foods that were too bitter, fishy, or salty, such as fish and eggs. Ekwere *et al.* (2015), explained that the practice of food restrictions during pregnancy was carried out by 97.5% of the 121 research respondents. Respondents experienced malnutrition during pregnancy, which was influenced by custom (50.8%) and religious beliefs (28%) regarding food restrictions during pregnancy. Foods restricted during pregnancy include foods rich in carbohydrates (27.3%) and protein (14.9%).

One of the key factors that influence the success of preventing anaemia is patient compliance with consuming drugs and food (Pambudi, 2013). Medication and Food Monitoring Program is a person who is responsible for supervising pregnant women in consuming drugs and food that is allowed. In this case, special attention is needed for health workers to motivate and supervise patients while they are undergoing treatment (Manuhara, 2012).

One study compared the effectiveness of intravenous and oral iron therapy for iron deficiency anaemia in pregnancy. An unblinded randomised clinical trial was conducted on 21 patients with 14–36 weeks' gestation with iron deficiency anaemia. After block randomization, the first group received 3x300 mg ferrous sulphate therapy for 30 days, and the second group received no treatment.

Based on data Lampung Provincial Health Office (2019), the prevalence of anaemia reached 23.9% of the 6,230 mothers. The pre-survey was carried out at the Pinang Jaya Community Health Centre in Bandar Lampung City, where the highest anaemia pregnant women were found. Based on the results of laboratory checks and characteristics during physical examination, 28 pregnant women experienced anaemia, and 6 mothers admitted that they did not adhere to taking Fe tablets.

Therefore, based on the background above, the researcher is interested in conducting research

with the title Effectiveness of the Medication and Food Supervisory Programme (P-MOM) on Preventing Anaemia in Pregnant Women at the Pinang Jaya Health Centre in 2023. It is known that the Effect of the P-Mom Programme (Medication Monitoring and Food) Against Anaemia in Pregnant Women at the PinangJaya Health Centre in 2023.

The purpose of this study is to determine the effect of the Medication and Food Monitoring Program (MFMP) on anemia in pregnant women at Pinang Jaya Community Health Center in 2023.

RESEARCH METHODS

This type of research is pre-experimental with an intact-group comparison research design. This research was conducted at the Pinang Jaya Community Health Centre in Bandar Lampung. This research was conducted in February–July 2023. The population in this study was all pregnant women who experienced anaemia as recorded in the MTBS data for May 2023 at the Pinang Jaya Community Health Centre in Bandar Lampung, with as many as 56 respondents. There were 56 samples of pregnant women who experienced mild anaemia in April–May 2023 (28 experiments and 28 controls). The sampling technique used purposive sampling. The statistical test used independent sample T-test.

RESEARCH RESULTS

Univariate analysis

The majority of MFMP respondents with second trimester were 15 respondents (26.7%), third trimester were 13 respondents (23.3%), with ages 25–35 there were 24 respondents (42.9%), ages >35 were 4 respondents (7.1%), primipara 17 respondents (30.4%), and multipara 10 respondents (17.8%). At MFMP, the knowledge mean score before intervention was 10.114 (SE 0.1035; SD 0.7006). While the knowledge mean score after intervention was 10.514 (SE 0.1324, SD 0.6047) from 56 respondents. At non-MFMP, the knowledge mean score before intervention was 10.175 (SE 0.1035, SD 0.5475). While the knowledge mean score after intervention was 10.204 (SE 0.1041, SD 0.5507). At not MFMP, a gestational age of second trimester as many as 17 respondents (30.3%), third trimester as many as 11 respondents (19.7%), ages <25 as many as 3 respondents (5.4%), aged 25-35 as many as 18 respondents (32.1%), aged >35 as many as 7 respondents (12.5%), primipara 15 respondents (26.8%), and multipara 9 respondents (16.1%).

Table 1

Variable	Frequency (f)		Percentage (%)	
	Intervention	Control	Intervention	Control
Gestational age				
First trimester	0	0	0	0
Second trimester	15	17	26,7	30,3
Third trimester	13	11	23,3	19,7
Age (year)				
<25	0	3	0	5,4
25-35	24	18	42,9	32,1
>35	4	7	7,1	12,5
Parity				
Nullipara	1	4	1,8	7,1
Primipara	17	15	30,4	26,8
Multipara	10	9	17,8	16,1

Bivariate analysis

Table 2

Variable	N	Mean	Standard Deviation	p-value
Pre (No-MFMP)	28	10,175	0,5475	0,001
Post (No-MFMP)	28	10,204	0,5507	
Pre (MFMP)	28	10,114	0,7006	
Post (MFMP)	28	10,514	0,6047	

There were differences in Hb levels before and after being given MFMP between the non-MFMP group and the MFMP group. The mean score of prior knowledge (not MFMP) was 10.175 (SD 0.5475). While the average knowledge after (not MFMP) was 10.204 (SD 0.5507). Meanwhile, the average score of prior knowledge (MFMP) was 10.114 (SD 0.7006). Meanwhile, the average post knowledge (MFMP) was 10.514 (SD 0.6047). It can be concluded that there was an influence of the MFMP (Monitoring Medication and Food Program) against anaemia in pregnant women at the Pinang Jaya Community Health Centre (p-value 0.001).

DISCUSSION

There were differences in Hb levels before and after being given MFMP between the non-MFMP group and the MFMP group. The mean score of prior knowledge (not MFMP) was 10.175 (SD 0.5475). While the average knowledge after (not MFMP) was 10.204 (SD 0.5507). Meanwhile, the average score of prior knowledge (MFMP) was 10.114 (SD 0.7006). Meanwhile, the average post knowledge (MFMP) was 10.514 (SD 0.6047).

This is in line with research by Rifatolistia Tampubolon, Bagus Panuntun, and Jeanita Fernanda Lasamah (2021), showed that anaemia is

influenced by various factors, namely the age of pregnant women ranging from 20-35 years (81%), high school education (71%), housewife work (84%), adequate knowledge of pregnant women (81%), adhere of pregnant women consumption of Fe tablets was non-adherent (74%), socio-cultural categories with myths or dietary restrictions (68%), treatment and prevention of anaemia (90%), history of pregnancy in the second trimester (77%), third trimester (23%), low Hb level (100%), primigravida parity status (48%), complications of pregnancy (13%), antenatal care not regular (32%), midwives for antenatal care (84%), place of pregnancy checks outside health facilities (68%), do not get information (10%). According to Astutik & Ertiana (2018), anaemia is a condition in which red blood cells (erythrocytes) in the blood circulation, or haemoglobin (Hb), decrease so that they are unable to fulfil their function as carriers of oxygen to all tissues. Haemoglobin is one of the components in red blood cells (erythrocytes), which functions as a binder of oxygen and delivers it to all the body's tissue cells. Oxygen is needed by body tissues to be able to do their job properly (Suryani *et al.*, 2021).

The main cause of anaemia is iron deficiency, which especially occurs in women of childbearing age and pregnant women who experience an

increased need for iron. Other causes of anaemia are a lack of iron intake and large amounts of blood loss (Yona & Nurulhuda, 2022). The most common cause of anaemia is malnutrition, especially iron deficiency; on the other hand, deficiency of folate and vitamins B12 and A is also an important cause (WHO, 2022). Anaemia in pregnancy is a condition in pregnant women with haemoglobin levels <11 g/dL in the first and third trimesters, while in the second trimester, haemoglobin levels <10.5 g/dL. Anaemia in pregnancy requires serious attention from those involved in the health services (Astutik & Ertiana, 2018).

Bivariate discussion

There were differences in Hb levels before and after being given MFMP between the non-MFMP group and the MFMP group. The mean score of prior knowledge (not MFMP) was 10.175 (SD 0.5475). While the average knowledge after (not MFMP) was 10.204 (SD 0.5507). Meanwhile, the average score of prior knowledge (MFMP) was 10.114 (SD 0.7006). Meanwhile, the average post knowledge (MFMP) was 10.514 (SD 0.6047). It can be concluded that there was an influence of the MFMP (Monitoring Medication and Food Program) against anaemia in pregnant women at the Pinang Jaya Community Health Centre (p-value 0.001).

Haemoglobin is an iron-rich protein that has an affinity for oxygen by forming oxyhaemoglobin in red blood cells. Haemoglobin is the pigment that gives blood its red colour. With this function, oxygen is carried from the lungs to the body's tissues (Evelyn, 2014). Haemoglobin is a protein compound with Fe, which is called conjugated protein. As the essence of Fe and the framework of protoporphyrin and globin cause red blood colour because of Fe. Arterial blood contains oxygen, and venous blood contains carbon dioxide (Wibowo *et al.*, 2013). Haemoglobin is a spherical molecule consisting of four subunits. Heme is an iron-containing porphyrin derivative. These polypeptides are collectively referred to as the globin portion of the haemoglobin molecule (Shinta, 2015).

Haemoglobin functions as the oxygen reserve, which is needed for cell metabolism (Sulistyawati, 2011). Factors that affect haemoglobin levels in pregnant women are basic, direct and indirect. Direct factors consist of consuming iron, infectious diseases, and bleeding. Indirect factors consist of parity, distance between 40 pregnancies, age, and diet. The basic factors consist of socio-economics, knowledge, attitudes, education, and culture (Istiarti, 2012). Iron tablet supplementation is a useful way to treat anaemia. In Indonesia, iron

supplementation has long been given routinely to pregnant women at Community Health Center; using tablets containing 60 mg/day can increase Hb levels by 1% per month. So far, the results have not been encouraging, as evidenced by the high prevalence of anaemia in pregnant women both at the national and Central Java (Saifuddin, 2012).

In pregnant women who lack Fe, iron anaemia can occur, but iron deficiency can also cause fatigue, so giving Fe tablets is one of the services given at pregnancy visits, where each tablet contains 300 mg of ferrous sulphate (FeSO_4) (60 mg of iron). (DeLoughery, 2014). Fe tablets are the most abundant microminerals found in the body, with as much as 3-5 grammes in the adult human body (Megasari, 2012).

The need for iron in pregnant women with a single fetus is around 1000 mg during pregnancy, or it increases by around 200–300%. Many pregnant women get Fe tablets, but there are still pregnant women who suffer from anaemia even though they have been given Fe tablets. This is due to several factors, including mothers who do not understand how to take Fe tablets. Fe tablets should be consumed after eating and drinking. Fe tablets are not recommended together with taking supplements containing calcium or high-calcium milk, coffee, or tea because iron absorption will be disrupted because they can bind Fe, thereby reducing the amount of absorption (Amperaningsih, 2011).

CONCLUSION

There were differences in Hb levels before and after being given MFMP between the non-MFMP group and the MFMP group. The mean score of prior knowledge (not MFMP) was 10.175 (SD 0.5475). While the average knowledge after (not MFMP) was 10.204 (SD 0.5507). Meanwhile, the average score of prior knowledge (MFMP) was 10.114 (SD 0.7006). Meanwhile, the average post knowledge (MFMP) was 10.514 (SD 0.6047). It can be concluded that there was an influence of the MFMP (Monitoring Medication and Food Program) against anaemia in pregnant women at the Pinang Jaya Community Health Centre (p-value 0.001).

SUGGESTION

Pregnant women to be diligent in taking iron tablets with their own awareness and knowing what foods they should not eat or drink together with taking iron tablets. For the Pinang Jaya Community Health Centre, the results of this study are expected to provide useful information in making policies related to the prevention of anaemia in pregnant women. Future researchers should be able to develop this

research further with different variables and develop innovative methods and media with a larger number of samples so that the results are more accurate.

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THE INFLUENCE OF MORINGA LEAVES CONSUMPTION ON INFANTS WITH LOW BIRTH WEIGHT BELOW THE GREEN LINE

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ABSTRAK PENGARUH KONSUMSI DAUN KELOR TERHADAP BAYI DENGAN BERAT BADAN LAHIR RENDAH DI BAWAH GARIS HIJAU

Latar Belakang: Berat badan bayi harus diperhatikan secara cermat oleh ibu untuk mengoptimalkan pertumbuhannya. Berdasarkan data Puskesmas Bandar Jaya, pada tahun 2019 terdapat 59 kasus balita dengan berat badan kurang, pada tahun 2020 sebanyak 63 kasus, dan pada tahun 2021 meningkat menjadi 87 kasus. Asupan gizi yang dapat meningkatkan gizi balita dengan berat badan kurang antara lain dengan mengonsumsi daun kelor. Daun kelor mengandung protein, vitamin, dan mineral yang berpotensi menjadi bahan terapi dan suplemen bagi anak gizi buruk.

Tujuan: Untuk mengetahui pengaruh pemberian sediaan daun kelor terhadap bayi dengan berat badan dibawah garis hijau di wilayah kerja Puskesmas Bandar Jaya Kabupaten Lampung Tengah.

Metode: Penelitian ini merupakan penelitian kuantitatif dengan menggunakan desain quasi eksperimen dengan pendekatan non-equivalent control group. Populasinya terdiri dari seluruh bayi dengan berat badan di bawah garis hijau yang berjumlah 34 orang, dengan jumlah sampel sebanyak 34 responden dengan menggunakan teknik total sampling. Pengumpulan data dilakukan dengan menggunakan kuesioner. Analisis univariat dan bivariat dilakukan dengan menggunakan uji Wilcoxon.

Hasil: Diketahui berat badan bayi sebelum intervensi pada kelompok intervensi adalah 6229,4 gram dan setelah intervensi adalah 6658,8 gram. Sedangkan berat badan bayi sebelum intervensi pada kelompok kontrol adalah 6105,8 gram, dan setelah intervensi adalah 6355,8 gram, dengan selisih berat badan 179,2 gram. Terdapat pengaruh pemberian sediaan daun kelor terhadap bayi dengan berat badan dibawah garis hijau di wilayah pelayanan Puskesmas Bandar Jaya Kabupaten Lampung Tengah (p-value 0,000).

Kesimpulan: Terdapat pengaruh pemberian sediaan daun kelor terhadap bayi dengan berat badan dibawah garis hijau.

Kata Kunci: Berat Badan Bayi, Bawah Garis Hijau, Daun Kelor

ABSTRACT

Background: Infant weight should be carefully considered by mothers to optimize growth. Based on the data from Bandar Jaya Health Center, in 2019, there were 59 cases of underweight toddlers, in 2020, there were 63 cases, and in 2021, it increased to 87 cases. Nutritional intake that can enhance the nutrition of underweight toddlers includes consuming moringa leaves. Moringa leaves contain protein, vitamins, and minerals that have potential therapeutic and supplementary food for malnourished children.

Objective: To determine the influence of moringa leaves preparation on infants with weight below the green line in the working area of bandar jaya health center, central lampung regency.

Method: This is a quantitative study using a quasi-experimental design with a non-equivalent control group approach. The population consisted of all infants with weight below the green line, totaling 34 individuals, with a sample size of 34 respondents using a total sampling technique. Data collection was done using questionnaires. Univariate and bivariate analysis were performed using the Wilcoxon test.

Results: It was found that the weight of infants before intervention in the intervention group was 6229.4 grams and after intervention was 6658.8 grams. Meanwhile, the weight of infants before intervention in the control group was 6105.8 grams, and after intervention was 6355.8 grams, with a weight difference of 179.2 grams. There is an influence of moringa leaves preparation on infants with weight below the green line in the service area of Bandar Jaya Health Center, Central Lampung Regency (p-value 0.000).

Conclusion: There is an influence of moringa leaves preparation on infants with weight below the green line.

Keywords: Infant Weight, Below The Green Line, Moringa Leaves.

INTRODUCTION

The growth and development of children experience rapid improvement during the early stages of life, specifically from ages 0 to 5, often referred to as the "Golden Age" phase (Yunita & Surayana, 2021). This phase is crucial as the unique attributes gained during this period cannot be replicated, making it a determining period for the child's future life. The growth and development process a child goes through can be used to assess their quality (Fikawati, 2015).

Achieving good nutritional status requires the body to receive proper nutritional intake. One significant factor that supports infant growth and development is the consumption of appropriate nutritional intake. Inadequate nutritional intake or deficiency can have long-term effects on the growth and development of infants and toddlers, making it difficult to rectify later. On the contrary, if the body receives adequate nutritional intake, it will contribute to optimal physical growth, brain development, work capability, and overall health (Ria Julita Sari, 2022).

The consequences of insufficient nutritional needs for children include having an inadequate immune system, making them susceptible to diseases from their surroundings. Additionally, it can lead to stunted height and weight growth, impacting the child's cognitive abilities as an adult (Rahmidini, 2020). One common issue in child growth and development is underweight. Underweight is categorized by nutritional status based on Weight for Age (WFA) with a Z-score of <-2 SD (Supariasa, 2016).

One of the government's efforts to enhance human resources and alleviate poverty is by improving the nutrition of children, especially infants and toddlers. Poor nutritional status among infants is a recurring issue within society. Thus, the percentage of malnutrition cases needs to be continually reduced to not exceed 5% (Nurul Aryastuti, 2022).

The percentage of severely underweight infants is 1.2%, while infants with low weight make up 5.2% of the cases. The province with the highest percentage of severely underweight and low weight cases is East Nusa Tenggara, at 2.3%. On the other hand, the lowest percentage is in Bali, at 0.3%. In the province of Lampung, the percentage for severely underweight infants is 0.5%, and for low weight infants, it's 2.7%. When considering malnutrition and undernutrition cases among toddlers, West Papua has the highest prevalence, while Bengkulu has the lowest. In Lampung Province, the percentages are 0.5% for severe malnutrition and 2.7% for undernutrition (Ministry of Health, 2022).

Based on the data on Prevalence of Underweight and Severely Underweight (Underweight) in Toddlers by Regency/City in Lampung Province for the year 2021, the highest occurrence is in Pesisir Barat Regency with a rate of 20%, followed by Central Lampung Regency at 17.3%. The lowest rate is in East Lampung Regency at 10.3% (Lampung Provincial Health Office, 2022).

Based on the data from Central Lampung Regency, in the year 2021, a total of 18,976 toddlers were weighed, out of which 1,307 toddlers experienced undernutrition. The highest incidence occurred in the working area of Wates Health Center with 160 cases, while the lowest occurred in Bumi Nabung and Segala Mider Health Center with 0 cases. Bandar Jaya Health Center had 87 cases (Central Lampung Regency Health Office, 2022). According to the data from Bandar Jaya Health Center, in 2019, there were 59 cases of undernourished toddlers, and in 2020, the cases increased to 63. In 2021, it further increased to 87 cases (Data from RM Bandar Jaya Health Center, 2022). These data highlight the existing issues related to infant and toddler nutrition.

Undernutrition can lead to a decrease in a child's immune system, making them susceptible to infections. If undernutrition is not addressed promptly, it will affect the quality of the next generation. Moreover, long-term effects can include a decrease in Intelligence Quotient (IQ) scores by 10 to 13 points (S. Saribuan, 2019). This can result in reduced cognitive development, sensory integration issues, attention deficits, decreased self-confidence, and a decline in academic performance. A direct cause of undernutrition is insufficient food intake. Research conducted by Rahayu & Nurindahsari (2018) on the impact of giving moringa leaves (kelor) to infants shows that there is an effect of moringa leaves on infant nutritional status. This suggests a potential solution for addressing undernutrition through the supplementation of moringa leaves.

The provision of extra biscuit meals to the control group over a span of 30 days resulted in a weight increase of 0.25 kilograms in undernourished infants. Conversely, providing a combined dish with moringa leaves (kelor) to the treatment group led to a weight increase of 0.71 kilograms in undernourished infants (Nababan et al., 2021). In the treatment class, regular consumption of moringa leaf dishes for 30 days resulted in a weight gain of 0.45 kg (Muliawati, 2020). Similarly, in the control class, there was a weight gain from month 1 to month 2, amounting to 0.26 kilograms. This study reveals that bread containing 5% Moringa Oleifera Leaf Powder (MOLP) can significantly contribute to addressing

malnutrition, especially protein deficiency in toddlers. Research by Gustiya showed that Moringa Nanoparticles from oleifera leaves have been proven to increase albumin levels significantly compared to the control group in stunted toddlers (Nababan et al., 2021).

Results from a pre-survey with mothers of infants aged 7-12 months at Bandar Jaya Health Center indicated that mothers are not yet aware of the benefits of moringa leaves, moringa leaf flour, or moringa leaf dishes as nutritious complementary foods for infant development and growth alongside breastfeeding (MP-ASI). Out of the 3 infants with weight below the green line, none of them used moringa leaves as an additional means to increase their weight; they only consumed the biscuits distributed by Public Health Center. The intervention conducted for undernourished infants in the working area of Bandar Jaya Health Center was Supplementary Feeding (PMT). However, this intervention seems to have been less effective in reducing the incidence of undernutrition among infants and toddlers. Hence, there is a need for innovation in providing supplementary feeding for infants and toddlers.

RESEARCH METHODS

The research follows a quantitative methodology, specifically a quasi-experimental design or a semi-experimental design with a non-equivalent control group. The subjects of the study are all infants with weight below the green line. The

research objects are infant weight and moringa leaf preparations. The sample for the experiment is simple, consisting of an experimental group and a control group, each with 17 respondents, resulting in a total sample size of 34 respondents. The sampling technique is purposive sampling, with inclusion criteria involving mothers willing to have their infants undergo the intervention. The research takes place in the working area of Bandar Jaya Health Center.

Moringa leaf preparations are administered to infants aged 7-12 months in a dosage of 2 grams once a day for a consecutive 30 days. In this study, moringa leaf preparations are in the form of moringa leaf powder mixed with complementary feeding (MPASI). Measurement is done using a digital scale, and data collection is performed through observation sheets. Data analysis includes both univariate and bivariate analysis (Wilcoxon test).

RESEARCH RESULTS

Univariate Analysis

It is observed that the mean weight of infants before intervention in the intervention group is 6229.4 grams, with a standard deviation of 449.6 grams. The minimum weight recorded is 5700 grams, and the maximum weight is 7100 grams. After the intervention, the mean weight of infants in the intervention group is 6658.8 grams, with a standard deviation of 433.0 grams. The minimum weight observed is 6150 grams, and the maximum weight is 7400 grams.

Table 1

Infant Weight Before and After Moringa Leaf Supplementation Intervention in the Working Area of Bandar Jaya Health Center, Central Lampung Regency

Infant Weight	Mean	SD	Min	Max	N
Before	6229,4	449,6	5700	7100	17
After	6658.8	433.0	6150	7400	17

Table 2

Infant Weight in the Control Group in the Working Area of Bandar Jaya Health Center, Central Lampung Regency

Infant Weight	Mean	SD	Min	Max	N
Before	6105,8	368,2	5700	6800	17
After	6355.8	344.0	5900	7050	17

It is noted that the mean weight of infants before intervention in the control group is 6105.8 grams, with a standard deviation of 368.2 grams. The minimum weight observed is 5700 grams, and the maximum weight is 6800 grams. After the intervention, the mean weight of infants in the control

group is 6355.8 grams, with a standard deviation of 344.0 grams. The minimum weight recorded is 5900 grams, and the maximum weight is 7050 grams.

The normality test using Shapiro-Wilk for both intervention and control groups indicate that the

significant value < 0.05 , implying that the data is not normally distributed.

Table 3
Normality Test

Infant Weight	Moringa Leaf	Shapiro Wilk	Status
Intervention	Before	0.036	Not Normal
	After	0.042	Not Normal
Control	Before	0.008	Not Normal
	After	0.018	Not Normal

Bivariate Analysis

Based on the results of the Wilcoxon test, the p -value = 0.000 (p -value $< \alpha = 0.05$), indicating that there is an influence of Moringa leaf supplementation on infants with weight below the green line in the

working area of Bandar Jaya Health Center, Central Lampung Regency. The weight increase is approximately 429.4 grams, and mothers chose to provide Supplementary Feeding + Moringa leaf compared to biscuit feeding.

Table 4
Effect of Moringa Leaf Supplementation on Infants with Weight below the Green Line in the Working Area of Bandar Jaya Health Center, Central Lampung Regency

Infant Weight	Moringa Leaf	Mean	Median	Min-Max	P-Value
Intervention	Before	6229,4	6100.0	5700 - 7100	0.000
	After	6658.8	6450.0	6150 - 7400	
Control	Before	6105,8	6000.0	5700 - 6800	0.000
	After	6355.8	6250.0	5900 - 7050	

DISCUSSION

Based on the results of the Wilcoxon test, the p -value was calculated as 0.000 (p -value $< \alpha = 0.05$), indicating that there is a significant effect of providing processed moringa leaf on infants with weight below the green line in the Working Area of Bandar Jaya Health Center, Central Lampung Regency. The observed p -value suggests that mothers opted to provide Supplementary Feeding + moringa leaf (PMT + moringa leaf) rather than biscuits, resulting in an average weight difference of 429.4 grams.

Achieving proper nutritional status is crucial for overall health. Adequate nutrient intake is a key factor that supports the growth and development of infants. Inadequate nutrition can have long-term consequences on the growth and development of infants and toddlers, and rectifying these issues later can be challenging. Conversely, a well-nourished body can lead to optimal physical growth, brain development, work capacity, and overall health (Ria Julita Sari, 2022).

Nababan's study (2021) aligns with the present research, showing a p -value < 0.05 , which indicates that processed moringa leaf can enhance

infant weight. Similarly, Muliawati's study (2020) demonstrated a p -value < 0.05 , indicating that moringa leaf extract can contribute to increasing the weight of toddlers. The research conducted by Musa (2022) also found significant results, with paired t -test analysis showing a Sig. value of (2-tailed) $0.000 < 0.05$, indicating the influence of moringa nuggets on weight changes in toddlers.

One of the government's efforts to enhance human resources and alleviate poverty is to improve child nutrition, especially among infants and toddlers. Addressing poor nutritional status in infants is a persistent concern, and efforts are made to ensure that the percentage of undernourished children remains below 5% (Nurul Aryastuti, 2022).

The direct cause of undernutrition is inadequate food intake. Drawing from research conducted by Rahayu & Nurindahsari (2018) on the improvement of infant nutritional status through moringa leaf supplementation, it is evident that providing moringa leaves has an impact on infant nutritional status.

Moringa leaf extract holds a myriad of benefits, including its potential to enhance the growth of toddlers. The relatively high content of vitamins

and proteins in moringa leaves makes it a potential alternative as supplementary food. Toddlers require adequate nutrients as they are in a phase of growth and development. Prolonged deficiency in nutrient consumption can lead to Chronic Energy Deficiency (CED). Micro-nutrients present in moringa leaves have been proven to enhance toddler growth. Consumption of moringa leaf extract can aid in the improvement of malnutrition in toddlers, either by incorporating it into meals or consuming it directly (Maryani, I., & Suryadarma, 2019).

Based on the research findings, it is known that the intervention group exhibited weight increases ranging from 250 to 650 grams, while in the control group, one individual did not experience weight gain after supplementary feeding, and weight increases ranged from 150 to 350 grams. From these results, it can be inferred that the intervention group experienced greater weight gain compared to the control group. Moringa leaves serve as a potential primary source of various nutrients and therapeutic elements, including antibiotics, as well as a boost to the immune system. The leaves contain protein, vitamins, and minerals, offering potential as therapy and supplementary food for malnourished children with the addition of moringa to their daily meals. Moringa leaf consumption is an alternative for addressing cases of weight below the green line. Along with vitamin C, the nutritional content increases when moringa leaves are consumed in dried and powdered form. The differences in weight gain among infants can be attributed to varying food intake in terms of composition and frequency. These findings suggest that healthcare workers should provide informal education or counseling to mothers with infants below the green line to optimize their children's growth.

CONCLUSION

There is an influence of moringa leaf supplementation on infants with weight below the green line in the Working Area of Bandar Jaya Health Center, Central Lampung Regency (p-value 0.000).

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THE RELATION OF DELIVERY TYPE WITH THE INCIDENT OF HYPERBILIRUBINEMIA ON NEWBORN INFANT

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ABSTRAK : HUBUNGAN JENIS PERSALINAN DENGAN KEJADIAN HIPERBILIRUBINEMIA PADA BAYI BARU LAHIR DI RSIA BUNDA ARIF PURWOKERTO

Latar Belakang: Salah satu faktor maternal yang menyebabkan hiperbilirubinemia yaitu jenis persalinan. Persalinan merupakan proses pengeluaran janin yang dapat hidup di luar kandungan melalui jalan lahir atau perut. Jenis persalinan terdiri dari persalinan patologis dan persalinan normal. Beberapa hari kehidupan di usia 0-28 hari yang mengalami perubahan besar dari dalam rahim ke luar rahim disebut bayi baru lahir. Peningkatan kadar bilirubin pada bayi baru lahir >5 mg/dl akan menyebabkan hiperbilirubinemia.

Tujuan: Mengetahui hubungan jenis persalinan dengan kejadian hiperbilirubinemia pada bayi baru lahir di RSIA Bunda Arif Purwokerto.

Metode: Penelitian ini merupakan penelitian survei analitik dengan pendekatan retrospektif. Teknik pengambilan sampel purposive sampling dengan jumlah sampel 89 bayi baru lahir dengan hiperbilirubinemia. Instrumen penelitian menggunakan lembar checklist. Analisis data menggunakan uji korelasi lambda dan uji chi square.

Hasil: Hasil penelitian menunjukkan jenis persalinan pada bayi baru lahir di RSIA Bunda Arif Purwokerto sebanyak 52,8% mengalami persalinan patologis. Kejadian hiperbilirubinemia pada bayi baru lahir di RSIA Bunda Arif Purwokerto sebanyak 36% mengalami hiperbilirubinemia dalam kategori derajat V. Ada hubungan persalinan patologis terhadap kejadian hiperbilirubinemia pada bayi baru lahir di RSIA Bunda Arif Purwokerto dengan kekuatan sedang nilai p-value sebesar 0.0001 ($p\text{-value} < \alpha$) dan lambda (λ) 0.576.

Kesimpulan: Jenis persalinan memiliki hubungan yang sedang dengan kejadian hiperbilirubinemia pada bayi baru lahir.

Kata Kunci: Jenis Persalinan, Hiperbilirubinemia, Bayi Baru Lahir

ABSTRACT

Background: One of the maternal factors that cause hyperbilirubinemia is the type of delivery. Labor is the process of expelling a fetus that can live outside the womb through the birth canal or stomach. The type of delivery consisted of pathological delivery and normal delivery. A few days of life at the age of 0-28 days that undergo major changes from inside the womb to outside the womb are called newborns. Increased bilirubin levels in newborns > 5 mg/dl will cause hyperbilirubinemia.

Objective: To determine the relationship between type of delivery and the incidence of hyperbilirubinemia in newborns at RSIA Bunda Arif Purwokerto.

Methods: This study is an analytic survey study with a retrospective approach. The sampling technique was purposive sampling with a total of 89 newborns with hyperbilirubinemia. The research instrument used a checklist sheet. Data analysis using lambda correlation test and chi square test.

Results: The results showed that 52.8% of newborns at RSIA Bunda Arif Purwokerto experienced pathological delivery. The incidence of hyperbilirubinemia in newborns at RSIA Bunda Arif Purwokerto was 36% experiencing hyperbilirubinemia in the grade V category. There is a relationship between pathological delivery and the incidence of hyperbilirubinemia in newborns at RSIA Bunda Arif Purwokerto with a moderate strength p-value of 0.0001 ($p\text{-value} < \alpha$) and lambda (λ) 0.576.

Conclusion: Type of delivery has a moderate relationship with the incidence of hyperbilirubinemia in newborns.

Keywords: Type of Delivery, Hyperbilirubinemia, Newborn

INTRODUCTION

One of the metrics used to evaluate the effectiveness of a nation's health services is the infant mortality rate (IMR) (Kemenkes RI, 2021). The number of newborn babies who die before they are exactly one year old in 1000 live births (KH) is known as the infant mortality rate (IMR) (UNICEF, 2022). Based on UNICEF data (2022), it is known that the IMR in the world in 2021 will reach 27.3 per 1000 KH with an average IMR of 22.5 per 1000 KH, where the highest IMR is in Afghanistan at 110.6 per 1000 KH and Indonesia is one of the countries with an IMR above the average is 22.7 per 1000 KH.

Based on data from the Indonesian Ministry of Health (2021), it is known that the IMR in 2020 was 20,266 cases, an increase compared to 2019, namely 20,244 cases. The highest IMR in 2020 occurred in Central Java Province with 3,031 cases and the lowest in North Sulawesi Province with 40 cases. The causes of high IMR are LBW (35.2%), asphyxia (27.3%), congenital abnormalities (11.3%) and infection (3.4%). Based on data from the Banyumas District Health Service (2021), it is known that the 2020 IMR was 7.06 per 1000 KH (187 cases) which has not reached the Rencana Pembangunan Jangka Menengah Daerah (RPJMD) target of 7 per 1000 KH.

One of the causes of IMR is infection, which can also cause complications in neonates such as meningitis, seizures, hypothermia, hyperbilirubinemia, respiratory problems and drinking (Halisanti & Wildan, 2021). Hyperbilirubinemia is the only infectious complication that can attack newborns throughout the world and causes the IMR to increase to 23.1% (Lawn et al., 2019). Hyperbilirubinemia in newborns can be a physiological symptom or it can be pathological. The pathological effects on each baby are different, this can be caused by high serum bilirubin levels of >5mg/dL in the blood (Johan & Noorbaya, 2019). Waluyo's research (2016) showed that the incidence of hyperbilirubinemia in babies at Banyumas District Hospital reached 31%.

Jaundice can be physiological or pathological. Physiological jaundice occurs at ≥ 24 hours of life and disappears ≤ 14 days of life with bilirubin levels on the second to fourth day of 5 – 6 mg/dL and decreases to < 2 mg/dL on the fifth to seventh day, while pathological jaundice occurs on the first day of life. (< 24 hours) or more than 14 days of life with bilirubin levels reaching 5 – 10 mg/dL (Auliasari et al., 2019). The incidence of hyperbilirubinemia in BBL can be caused by 3 risk factors including maternal factors, perinatal factors and neonatal factors (Marcdante et al., 2014).

The perinatal factor that influences hyperbilirubinemia is the type of delivery (Rasyd, 2019). Research conducted by Rini (2016) found that there was a relationship between the type of delivery ($p=0.001$) and the incidence of neonatal jaundice. Research by Madiastuti & Chalada (2016) shows that the incidence of hyperbilirubinemia in normal labor is 46.3% and in abnormal/pathological labor it reaches 68.4%. Childbirth is a normal process that occurs in women physiologically, childbirth can become pathological which can have negative impacts on the mother and child. The type of pathological delivery is delivery by vacuum/forceps and caesarean section (SC) (Saifuddin, 2014).

Babies born with surgery are more likely to experience subsequent respiratory problems. Hepatic hypoperfusion and blockage of the bilirubin conjugation pathway may arise from this. Additionally, babies born via this method do not receive the beneficial bacteria found in the mother's birth canal, which affects how the immune system develops, making them more susceptible to infections. (Berman et al., 2016). Babies born with surgery are more likely to experience subsequent respiratory problems. Hepatic hypoperfusion and blockage of the bilirubin conjugation pathway may arise from this. Additionally, babies born via this method do not receive the beneficial bacteria found in the mother's birth canal, which affects how the immune system develops, making them more susceptible to infections (Madiastuti & Chalada, 2016).

Prematurity, fetal distress, premature rupture of membranes (KPD), and other events that increase bilirubin levels are some of the reasons why SC delivery is performed and how it can affect immunity, abnormalities, and the development of body organs in babies (Pratiwi & Kusumaningtiar, 2021). Babies born using this method may not cry immediately, and this delay in crying causes hemodynamic irregularities that can lead to respiratory depression, whole-body hypoxia, and respiratory/metabolic acidosis, all of which can affect bilirubin metabolism (Faiqah, 2014). Research by Roselina et al., (2016) revealed that 43% of neonates who were delivered by vacuum experienced hyperbilirubinemia (11 out of 32 deliveries)

RESEARCH METHODS

This type of research is quantitative research. The method used in this research is an analytical survey method with a retrospective approach. The location of this research was carried out at RSIA Bunda Arif Purwokerto according to the timeline by conducting an initial survey, literature search,

hyperbilirubinemia in the grade I category, 21 respondents (23.6%). From the results of the analysis, it was found that the lambda correlation value (λ) was 0.576, which means that the level of correlation between the type of delivery and the incidence of hyperbilirubinemia was moderate, while the chi square test results obtained a p-value of 0.0001 (p-value < α) which means there is a significant relationship between the type of delivery and the incidence of hyperbilirubinemia in newborns

DISCUSSION

The research results showed that the majority of respondents had a pathological type of delivery (VE, forceps, SC) as many as 47 respondents (52.8%) (table 4.1). These results indicate that surgical delivery is the mother's choice for giving birth. The most frequently performed delivery is SC delivery. This can happen because the data used is 2021 data, which at that time was still during the Covid-19 pandemic. Research by Risnawati et al., (2021) shows that the majority of birth types during the Covid-19 pandemic were SC deliveries (64%).

The choice of delivery method must also consider the availability of resources, facilities at the hospital (including the availability of a negative pressure operating room), the layout of the hospital treatment room, the availability of personal protective equipment, performance capabilities, human resources, and the risk of exposure to medical personnel and other patients. (POGI, 2020).

The type of birth in the results of this study is the desire of the birthing mother and family. This is in accordance with the literature review conducted by Christanto (2020) which states that until now there has been no strong clinical evidence that recommends one method of delivery so that delivery is carried out based on obstetric indications taking into account the wishes of the mother and family, except for mothers with respiratory problems who require immediate delivery in the form of SC, or vaginal surgery.

The type of delivery in this study is related to the respondent's gestational age. Gestational age is one of the important things that must be considered in the decision to terminate a pregnancy, because it is related to the fetus's ability to survive outside the uterus (Soewarto, 2016). The results of this study are in line with research conducted by Yaeni (2013) which found that 95% of the gestational ages at the time of the CS procedure were term pregnancies, whereas for some respondents, delivery was carried out at preterm gestational age, which is related to the indication for emergency Sectio Caesarea. to save the lives of the mother and fetus.

The research results showed that the majority of respondents had hyperbilirubinemia in the grade V category, 32 respondents (36%) (table 4.2). Hyperbilirubinemia is one of the infectious complications in babies born throughout the world which can cause IMR to reach 23.1% (Lawn et al., 2019). Hyperbilirubinemia in newborns can be a physiological symptom or it can be pathological. The pathological effects on each baby are different, this can be caused by high serum bilirubin levels of >5mg/dL in the blood (Johan & Noorbaya, 2019). Waluyo's research (2016) showed that the incidence of hyperbilirubinemia in babies at Banyumas District Hospital reached 31%.

Bilirubin in newborns increases due to damage to red blood cells. Bilirubin will increase normally after 24 hours and reach its peak in 3-5 days, this will gradually decrease to near normal values within a few weeks (Maternity et al., 2018). According to Maryunani & Sari (2013), hyperbilirubinemia in newborn babies mostly occurs because the liver function is not yet perfect in removing bilirubin from the bloodstream.

Bilirubin levels are a waste product of metabolism that occurs in the liver. If conjugated bilirubin levels are reabsorbed, they will deposit in the body and become a condition of hyperbilirubinemia (Moncrieff, 2018). Bilirubin levels that continue to increase and remain in the body for too long can cause kernicterus or brain damage caused by the adhesion of bilirubin to the surrounding brain, especially in the corpus striatum, thalamus, subthalamic nucleus, hippocampus, red nucleus, and nucleus at the base of the ventricle (Dewi, 2016). If it is not treated immediately, it will have an impact on the baby's condition, namely experiencing speech problems and hearing problems (Mulyati, 2019).

The most severe impact of hyperbilirubinemia in babies if it is not treated quickly is bilirubin encephalopathy which can lead to kernicterus and brain damage. Hyperbilirubinemia can also cause sequelae in the form of cerebral palsy, paralysis and dental dysplasia which greatly affect the baby's quality of life. Apart from that, it can also cause seizures, deafness, speech disorders, mental retardation, and can even have an impact on infant death (Heriyanti et al., 2020). The relationship between type of delivery and the incidence of hyperbilirubinemia in newborns at RSIA Bunda Arif Purwokerto. The results of the study showed that respondents with pathological labor mostly had hyperbilirubinemia in the grade V category, 31 respondents (34.9%) and respondents with normal labor mostly had hyperbilirubinemia in the grade I category, 21 responses.

CONCLUSION

Based on the results of the research that has been carried out, the following conclusions can be drawn:

1. Types of labor for newborns at RSIA Bunda Arif Purwokerto: 52.8% experienced pathological labor and 47.2% experienced normal labor.
2. The incidence of hyperbilirubinemia in newborns at RSIA Bunda Arif Purwokerto was 24.7% experiencing hyperbilirubinemia in grade I category, 16.9% in grade II category, 9% in grade III category, 13.4% in grade IV category and 36% in grade V category.
3. There is a relationship between the type of delivery and the incidence of hyperbilirubinemia in newborns at RSIA Bunda Arif Purwokerto with a p-value of 0.0001 ($p\text{-value} < \alpha$).
4. There is a moderate level of correlation between the type of delivery and the incidence of hyperbilirubinemia with a lambda (λ) value of 0.576.

SUGGESTION

Types of labor for newborns at RSIA Bunda Arif Purwokerto: 52.8% experienced pathological labor and 47.2% experienced normal labor. The incidence of hyperbilirubinemia in newborns at RSIA Bunda Arif Purwokerto was 24.7% experiencing hyperbilirubinemia in grade I category, 16.9% in grade II category, 9% in grade III category, 13.4% in grade IV category and 36% in grade V category. There is a relationship between the type of delivery and the incidence of hyperbilirubinemia in newborns at RSIA Bunda Arif Purwokerto with a p-value of 0.0001 ($p\text{-value} < \alpha$). There is a moderate level of correlation between the type of delivery and the incidence of hyperbilirubinemia with a lambda (λ) value of 0.576.

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