

## ANALYSIS OF FACTORS ASSOCIATED WITH THE INCIDENCE OF OBESITY IN ADOLESCENTS

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### ABSTRAK : ANALISIS FAKTOR YANG BERHUBUNGAN DENGAN KEJADIAN OBESITAS PADA REMAJA

Latar Belakang: Obesitas merupakan penumpukan lemak yang berlebihan akibat ketidakseimbangan energi yang masuk dan energi yang dikeluarkan pada waktu yang lama. Prevalensi obesitas pada remaja di Indonesia mengalami peningkatan pertahunnya, dari 23,6% ditahun 2013 meningkat menjadi 31% ditahun 2018. Beberapa faktor yang mempengaruhi obesitas pada remaja di Indonesia diantaranya yaitu genetik, lingkungan, psikososial dan faktor perilaku seperti aktivitas fisik dan pola makan.

Tujuan: Untuk mengetahui faktor-faktor yang berhubungan dengan kejadian obesitas pada remaja di SMPN 1 Muaragembong Bekasi Tahun 2024.

Metodologi: Jenis penelitian ini menggunakan penelitian kuantitatif dengan pendekatan *cross sectional*. Sampel dalam penelitian ini adalah seluruh siswa yang mengalami obesitas sebanyak 64 responden dengan teknik pengambilan sampel *Total Sampling*. Pengumpulan data menggunakan pengukuran antropometri dan wawancara dengan kuesioner FFQ *Semi Quantitatif*, IPAQ, PSQI, PSS-10 dan SONTUS. Data dianalisis secara *univariat* dan *bivariat* dengan menggunakan uji statistic *Chi Square*.

Hasil Penelitian: Hasil penelitian menunjukan bahwa terdapat hubungan antara konsumsi *fast food* ( $p=0,030$ ), aktivitas fisik ( $p=0,010$ ), tingkat stress ( $p=0,006$ ) dan penggunaan media social ( $p=0,012$ ) dengan obesitas pada remaja serta tidak terdapat hubungan antara pola tidur ( $p=0,081$ ) dengan obesitas pada remaja di SMPN 1 Muaragembong tahun 2024.

Kesimpulan: Faktor yang berhubungan dengan obesitas pada remaja adalah konsumsi *fast food*, aktivitas fisik, tingkat stress, dan penggunaan media social. Sedangkan faktor yang tidak berhubungan dengan obesitas pada remaja adalah pola tidur.

Saran: Diharapkan dapat diadakannya program kesehatan pada penderita obesitas melalui UKS atau bimbingan konseling seperti: diet sehat remaja, melakukan senam pagi, melakukan kegiatan rutin jalan santai bersama seluruh siswa dan guru agar menumbuhkan kesadaran untuk hidup sehat.

Kata kunci : Aktivitas Fisik, *Fast Food*, Media social, Obesitas, Pola Tidur, Tingkat Stres

### ABSTRACT

Background: Obesity is an excessive accumulation of fat due to an imbalance of energy intake and energy expenditure over a long period of time. The prevalence of obesity in adolescents in Indonesia has increased every year, from 23.6% in 2013 to 31% in 2018. Several factors influence obesity in adolescents in Indonesia including genetic, environmental, psychosocial and behavioral factors such as physical activity and diet.

Purpose: To determine the factors associated with the incidence of obesity in adolescents at SMPN 1 Muaragembong Bekasi in 2024.

Method: This type of research uses quantitative research with a *cross sectional* approach. The sample in this study were all students who were obese as many as 64 respondents with the *Total Sampling sampling* technique. Data collection using anthropometric measurements and interviews with FFQ *Semi Quantitative* questionnaires, IPAQ, PSQI, PSS-10 and SONTUS. Data were analyzed *univariately* and *bivariately* using the *Chi Square* statistical test.

Results: The results showed that there was a relationship between *fast food* consumption ( $p=0.030$ ), physical activity ( $p=0.010$ ), stress level ( $p=0.006$ ) and social media use ( $p=0.012$ ) with obesity in adolescents and there was no relationship between sleep patterns ( $p=0.081$ ) with obesity in adolescents at SMPN 1 Muaragembong in 2024.

Conclusion: Factors associated with obesity in adolescents are *fast food* consumption, physical activity, stress levels, and social media use. While factors that are not associated with obesity in adolescents are sleep patterns.

Suggestion: It is hoped that a health program can be held for obese people through UKS or counseling guidance such as: a healthy diet for adolescents, doing morning exercises, conducting routine leisurely walks with all students and teachers in order to foster awareness of healthy living.

Keywords: Physical Activity, *Fast Food*, Social Media, Obesity, Sleep Patterns, Stress Levels.

## INTRODUCTION

Adolescence is a period of growth and the process of human maturity, during this period there are continuous changes. Changes in physique due to growth will affect health and nutritional status. The imbalance between intake needs or sufficiency will cause nutritional problems, both in the form of malnutrition and overnutrition or obesity. It is defined as an excessive accumulation of fat due to an imbalance of energy intake and energy expenditure over a long period of time.(F. Azzahra & Anggraini, 2022).

World Health Organization (WHO) data in 2016 showed that the problem of overnutrition in 5-19 year olds quadrupled from 4% to 18% with 340 million people, consisting of 19% of men and 18% of women. Based on the Central for Disease Control and Prevention (CDC), from 2017 to early 2018, 19.7% of children and adolescents aged 12-19 years were overnourished. (Simpatik et al., 2023).

The prevalence of obesity in adolescents in Indonesia has increased, from 23.6% in 2013 to 31% in 2018. The prevalence of obesity in adolescents aged 13-15 years was 4.8% and 4.0% in adolescents aged 16-18 years(Yosa NurSidiq Fadhilah et al., 2021). The results of the West Java Province Riskesdas in 2018 showed that the prevalence of obesity in adolescents aged 13-15 years was 4.89% and in adolescents aged 16-18 years was 4.51%. Meanwhile, in Bekasi Regency, the prevalence of obesity in adolescents aged 13-15 years was 11.6%, while in adolescents aged 16-18 years it was 4.11%. (Pratiwi & Ridwan, 2021).

The high prevalence of obesity in adolescents can have an impact on development, especially aspects of psychosocial development (Februhartanty et al., 2019). Based on Masdar et. al (2016), the lack of self-confidence experienced by adolescents with obesity about their body image makes them often alienated in relationships, feel inferior, tend to withdraw and experience depression. Obesity in adolescence has a high risk of becoming obese in adulthood and has the potential to experience various diseases such as hypertension, type II diabetes mellitus, heart disease, stroke, metabolic syndrome and can trigger the emergence of cardiovascular disease (Alfiah, 2020).

Efforts that can be made to reduce obesity rates in Indonesia include detecting cases of obesity as early as possible so that it will be easier to intervene appropriately. In addition, obesity prevention measures can also be enlivened through education or health promotion about the importance of physical activity, proper eating patterns, good sleep patterns, avoiding excessive mental burdens and can provide education about the use of social media (Pertiwi & Niara, 2022).

*Fast food* is a food that contains high calories, high fat and low fiber, therefore it can cause overnutrition. The results showed that adolescents who consume *fast food* affect the occurrence of obesity(Hanafi & Hafid, 2019).

Physical activity is also associated with obesity in adolescents. Light physical activity causes low energy output so that there is an imbalance between more energy input compared to energy out. This can cause the remaining energy to be stored as fat and then become obese(Widyantari et al., 2018).

Sleep pattern is one that is associated with the incidence of obesity. This is because the lack of sleep duration (2-4 hours / day) can result in a loss of 18% leptin and increase 28% ghrelin, causing an increase in appetite of approximately 23-24%. (Amrynia & Prameswari, 2022).

Stress levels can also be a factor in obesity because hormonal changes in someone experiencing stress trigger increased secretion of cortisol which can cause an increase in body fat accumulation and can signal hunger to the brain(Fiantis, 2021). Meanwhile, adolescents with excessive use of social media can be a cause of obesity due to long social media time, light activities can result in poor eating patterns that will affect the risk of obesity in adolescents (A. Azzahra, 2022).

Based on research conducted by Hanafi & Hafid tahun 2019 showed that there was a relationship between physical activity ( $p=0.027$ ) and fast food consumption ( $p=0.002$ ) with the incidence of obesity in adolescents in Gorontalo Regency. In research conducted by Rachmania Eka Damayanti et al., (2019). showed that there is a significant relationship between sleep duration and the incidence of overweight and obesity in educational personnel in the Campus C environment of Airlangga University

In the research conducted Mayataqillah et al., tahun 2023 showed that there was a relationship between stress levels and the incidence of obesity in adolescents at SMA Negeri 1 East Bintan with a value of  $p = 0.027$ . Whereas in research conducted by A. Azzahra, (2022). shows that the intensity of social media use has a relationship with nutritional status in adolescents at SMAN 14 East Jakarta with a value of ( $p < 0.05$ ).

Based on the results of a preliminary study conducted at SMPN 1 Muaragembong, data on the number of students were 528 people. The results of data collection were 64 students who were obese. Some of them are caused by having a family history of obesity. Based on observations made, students still often buy snacks in the canteen. The majority of snacks available in the canteen are ready-to-eat foods such as fried foods, instant noodles, and light snacks such as chips and others. In addition, there are also many students who lack physical activity in their spare time such as just sitting around while playing gadgets.

Based on this background, the researcher aims to conduct a study to find out "What are the factors associated with the incidence of obesity in adolescents at SMPN 1 Muaragembong Bekasi in 2024."

## RESEARCH METHODS

This study uses a quantitative method with a *cross sectional* study design. In this study design, researchers collect data at the same time to determine the independent variables and dependent variables in the population. This study was conducted to determine the factors associated with the incidence of obesity in adolescents at SMPN 1 Muaragembong Bekasi in 2024.

The population in this study were all students of SMPN 1 Muaragembong Bekasi who were in the obese category, totaling 64 students. The sampling technique used in this study was the *total sampling* technique, namely all populations used as research samples. The sample in this study was taken from a population of 64 students.

The instruments used in this study were informed consent sheet, weight and height scales, *Semi Quantitative Food Frequency Questionnaires* (SQ-FFQ), *International Physical Activity Questionnaires* (IPAQ), *Pittsburgh Sleep Quality Index* (PSQI) questionnaire, *Perceived Stress Scale* (PSS-10) questionnaire, and *Social Networking Time Use Scale* (SONTUS) questionnaire.

Data analysis used univariate and bivariate analysis. Bivariate analysis was performed using the

*Chi square* test with a confidence level of 95% ( $\alpha = 0.05$ ) and *Odds Ratio* (OR).

## RESEARCH RESULTS

### Univariate Analysis

**Table 1**  
**Respondent Characteristics**

Characteristics	Frequency (f)	Percentage (%)
Gender		
Male	17	26,6
Female	47	73,4
Age		
13	26	40,6
14	23	35,9
15	15	23,4

Table 1 shows that of the 64 respondents, 47 were female (73.4%) and 17 were male (26.6%). In the age group, respondents aged 13 years were 26 respondents (40.6%), 14 years were 23 respondents (35.9%) and 15 years were 15 respondents (23.4%).

**Table 2**  
**Incidence of Obesity**

Incidence of Obesity	Frequency (f)	Percentage (%)
Obesity I	45	70,3
Obesity II	19	29,7

Table 2 shows that out of 64 respondents, 45 respondents (70.3%) were obese. While students who experienced obesity II were 19 respondents (29.7%).

**Table 3**  
**Fast Food Consumption**

Fast Food Consumption	Frequency (f)	Percentage (%)
Often	43	67,2
Rare	21	32,8

Table 3 shows that out of 64 respondents, students who often consume fast food are 43 respondents (67.2%). While students who rarely consume fast food are 21 respondents (32.8%).

**Table 4**  
**Physical Activity**

Physical Activity	Frequency (f)	Percentage (%)
Lightweight	31	48,4
Weight	33	51,6

Table 4 shows that out of 64 respondents, 33 respondents (51.6%) had heavy physical activity. While students who do light physical activity are 31 respondents (48.4%).

**Table 5**  
**Sleep pattern**

Sleep Pattern	Frequency (f)	Percentage (%)
Good	22	34,4
Bad	42	65,6

Table 5 shows that out of 64 respondents, 22 respondents (34.4%) had good sleeping patterns. While students with poor sleep patterns were 42 respondents (65.5%).

**Table 6**  
**Stress Level**

Stress Level	Frequency (f)	Percentage (%)
Lightweight	21	32,8
Weight	43	67,2

Table 6 shows that out of 64 respondents, 43 respondents (67.2%) had severe stress levels. While students who have mild stress levels are 21 respondents (32.8%).

**Table 7**  
**Social Media Usage**

Social Media Usage	Frequency (f)	Percentage (%)
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Low	27	42,2
High	37	57,8

Table 7 shows that out of 64 respondents, 37 respondents (57.8%) were students with high social media usage. While students with low use of social media were 27 respondents (42.2%).

### Bivariate Analysis

Based on table 8, it is known that respondents who consume fast food often with obesity I are 26 respondents (60.5%) and obesity II are 17 respondents (39.5%). While respondents who consume fast food rarely with obesity I as many as 19 respondents (90.5%) and obesity II as many as 2 respondents (9.5%).

The results of the analysis test with chi-square obtained a p-value of 0.030 ( $p \leq 0.05$ ) which means that there is a significant relationship between fast food consumption and the incidence of obesity in adolescents at SMPN 1 Muaragembong in 2024. The OR value is 0.161, which means that respondents with frequent fast food consumption have a 0.1 times greater risk of obesity II than respondents who consume fast food rarely.

Based on table 9, it is known that respondents who have light physical activity with obesity I are 27 respondents (87.1%) and obesity II are 4 respondents (12.9%). While respondents who had heavy physical activity with obesity I were 18 respondents (54.5%) and obesity II were 15 respondents (45.5%).

The results of the analysis test with chi-square obtained a p-value of 0.010 ( $p \leq 0.05$ ) which means that there is a significant relationship between physical activity and the incidence of obesity in adolescents at SMPN 1 Muaragembong in 2024. The OR value is 5.625 which means that respondents with mild physical activity have a 5 times greater risk of developing obesity II than respondents who have heavy physical activity.

**Table 8**  
**Relationship between Fast Food Consumption and the Incidence of Obesity in Adolescents at SMPN 1 Muaragembong 2024**

Fast Food Consumption	Incidence of Obesity				Total		P-Value	OR (95%CI)
	Obesity I		Obesity II					
	f	%	f	%	f	%		
Often	26	60,5	17	39,5	43	100	0,030	0,161
Rare	19	90.5	2	9.5	21	100		

**Table 9**  
**Relationship between Physical Activity and the Incidence of Obesity in Adolescents at SMPN 1 Muaragembong Bekasi Year 2024**

Activities Physical	Incidence of Obesity				Total		P-Value	OR (95% CI)
	Obesity I		Obesity II					
	f	%	f	%	f	%		
Lightweight	27	87,1	4	12,9	31	100	0,010	5,625
Weight	18	54,5	15	45,5	33	100		

**Table 10**  
**Relationship between sleep patterns and obesity among adolescents at SMPN 1 Muaragembong Bekasi in 2024**

Sleep Patterns	Incidence of Obesity				Total		P- Value
	Obesity I		Obesity II				
	f	%	f	%	f	%	
Good	19	86,4	3	13,6	22	100	0,081
Bad	26	61,9	16	38,1	42	100	

Based on table 10, it is known that respondents who have good sleep patterns with obesity I are 19 respondents (86.4%) and obesity II are 3 respondents (13.6%). While respondents who had poor sleep patterns with obesity I were 26 respondents (61.9%) and obesity II were 16

respondents (38.1%).

The results of the chi-square analysis test obtained a p-value of 0.081 ( $p > 0.05$ ) which means that there is no significant relationship between sleep patterns and the incidence of obesity in adolescents at SMPN 1 Muaragembong in 2024.

**Table 11**  
**Relationship between stress levels and obesity among adolescents at SMPN 1 Muaragembong Bekasi 2024**

Level Stress	Incidence of Obesity				Total		P-Value	OR (95% CI)
	Obesity I		Obesity II					
	f	%	f	%	f	%		
Lightweight	20	95,2	1	4,8	21	100	0,006	14,400
Weight	25	58.1	18	41.9	43	100		

Based on table 11, it is known that respondents who have mild stress levels with obesity I are 20 respondents (95.2%) and obesity II are 1 respondent (4.8%). While respondents who had severe stress levels with obesity I were 25 respondents (58.1%) and obesity II were 18 respondents (41.9%).

The results of the analysis test with chi-square obtained a pvalue of 0.006 ( $p \leq 0.05$ ) which means that there is a significant relationship between stress levels and the incidence of obesity in adolescents at SMPN 1 Muaragembong in 2024. The OR value is 14.400 which means that respondents with severe stress levels have a 14 times greater risk of experiencing obesity II than respondents who have mild stress levels.

Based on table 12, it is known that respondents who use low social media with obesity I were 24 respondents (88.9%) and obesity II were 3 respondents (11.1%). While respondents who used high social media with obesity I were 21 respondents (56.8%) and obesity II were 19 respondents (43.2%).

The results of the analysis test with chi-square obtained a p-value of 0.012 ( $p \leq 0.05$ ) which means that there is a significant relationship between the use of social media and the incidence of obesity in adolescents at SMPN 1 Muaragembong in 2024. The OR value is 6.095, which means that respondents with high social media use have a 6 times greater risk of experiencing obesity II than respondents with low social media use.

**Table 12**  
**Relationship between Social Media Use and the Incidence of Obesity in Adolescents at SMPN 1**  
**Muaragembong Bekasi in 2024**

Usage Social Media	Incidence of Obesity				Total		P-Value	OR (95%CI)
	Obesity I		Obesity II					
	f	%	f	%	f	%		
Lightweight	20	95,2	1	4,8	21	100	0,006	14,40
Weight	25	58,1	18	41,9	43	100		

## DISCUSSION

### Relationship between Fast Food Consumption and the Incidence of Obesity in Adolescents

Based on the results of the bivariate analysis test between *fast food* consumption and the incidence of obesity in adolescents at SMPN 1 Muaragembong in 2024, the p-value is 0.030 ( $p \leq 0.05$ ) which indicates that there is a relationship between fast food consumption and the incidence of obesity in adolescents with an OR value of 0.161, which means that respondents with frequent fast food consumption have a 0.1 times greater risk of obesity.

In line with research conducted by Marianingrum (2020) which shows that adolescents who often consume *fast food* affect the occurrence of obesity with p-value = 0.030. This study is also supported by the results of research by Sumiyati, et al (2022) which shows that there is a relationship between *fast food* consumption and the incidence of obesity in adolescents.

An unbalanced diet due to the high consumption of fast food encourages an increase in fat deposits, this is due to the content of fast food which contains about 40-50% fat. In addition, *fast food* also contains high calories, sugar, and sodium and low fiber. Thus, adolescents who often consume *fast food* will be at high risk for obesity and overnutrition that will continue into adulthood (Sugiatmi & Handayani, 2018).

According to Siti Qomariah et al., (2021) if you consume *fast food* excessively and rarely exercise, then within a few weeks the body will experience unhealthy weight gain. Fat obtained from eating *fast food* is not used properly by the body if it does not exercise. This fat is then stored and accumulated in the body which can lead to obesity.

According to the researcher's assumption, most adolescents in this study prefer to consume *fast food* or *fast food* rather than traditional food. This is due to various reasons such as better taste, ease of obtaining and obtaining these foods. In addition, the influence of the environment causes adolescents to prefer fast food over traditional food. Many teenagers spend their break time or lunch time buying these

foods. Basically, *fast food* is not too detrimental to health as long as it is not used as a daily menu, and must be balanced with other foods such as foods high in protein, vegetables, fruit and can be balanced with physical activity carried out such as routine exercise

### Relationship between Physical Activity and the incidence of Obesity in Adolescents

Based on the results of the bivariate analysis test between physical activity and the incidence of obesity, the p-value is 0.010 ( $p \leq 0.05$ ) which shows that there is a relationship between physical activity and the incidence of obesity in adolescents at SMPN 1 Muaragembong in 2024 with an OR value of 5.625 which means that respondents with mild physical activity have a 5 times greater risk of obesity.

In line with research conducted by Sembiring, et al., (2022) which shows that there is a significant relationship between physical activity and obesity with a p-value of 0.021. This study is also in line with research conducted by Wiwin (2023) which examines the relationship between physical activity and the incidence of obesity. The results showed that there was a significant relationship between physical activity and the incidence of obesity.

Physical activity is something that is recommended for everyone to maintain and improve body fitness. Light physical activity causes low energy output resulting in an imbalance between more energy input compared to energy output. The rest of the energy will be stored as fat and then become overweight until it continues to become obese (Fiantis, 2021).

According to Sembiring et al., (2022), adolescents spend more time doing activities in a sitting and lying position such as watching television, doing assignments, playing games or just spending time relaxing, even on holidays adolescents can spend 10-12 hours doing various activities in a sitting and lying position in a day.

According to the researcher's assumption, most respondents spend time at school or at home just sitting and sleeping so it appears that the lack of

physical activity that respondents do per day. Then the current technological advances are also one of the influences on the decline in physical activity in a person. Simple examples such as cellphones, traveling by vehicle which causes a decrease in physical activity in a person. In addition, most respondents do not do household chores at home. In addition, the more sophisticated tools owned to help with household chores so that less energy is expended.

### **Relationship of Sleep Patterns with the Incidence of Obesity in Adolescents**

Based on the results of the bivariate analysis test between sleep patterns and the incidence of obesity, the p-value is 0.081 ( $p > 0.05$ ) which indicates that there is no relationship between sleep patterns and the incidence of obesity in adolescents at SMPN 1 Muaragembong in 2024.

The results of this study are in line with the results of research conducted by Alfiah (2020) which shows that there is no relationship between sleep patterns and the incidence of obesity in adolescents with a p-value of 0.401. The results of the analysis obtained most of the respondents had poor sleep patterns (82.5%). From this research it can be seen that adolescents who are obese mostly have poor sleep patterns. Poor sleep patterns in the majority of obese adolescents are caused by several factors, namely sleeping hours  $\leq 7$  hours a day, frequent nighttime awakenings, the habit of staying up late and difficulty starting sleep at night.

This research is also in line with research conducted by Wulandari et al., (2016) which shows that there is no relationship between sleep duration and obesity in adolescents at SMA Negeri 4 Kendari with a p-value ( $0.654 > 0.05$ ). In a study conducted by Wulandari (2016) of 89 respondents with poor sleep duration as many as 51 respondents (57.3%) and sufficient sleep duration as many as 38 respondents (42.7%). Obese adolescents tend to have poor sleep patterns, this is due to adolescence experiencing puberty so they tend to have the habit of sleeping late at night or the emergence of the habit of staying up late for various reasons such as doing schoolwork, playing online games, using social media, even just chatting or smsan with close friends.

Based on the results of further research, it was found that the cause of sleep deprivation in obese adolescents was caused by the sleep disturbances they felt, causing adolescents to wake up frequently in the middle of the night and find it difficult to fall asleep again. Whereas in adolescents who are not obese, the cause of lack of sleep is because they have a habit of staying up late with the

various activities they do. Both groups of respondents have certain reasons why they experience short sleep duration but this does not affect them to eat in the middle of the night even though they feel hungry. This is due to laziness to go to the kitchen or get out of bed so they endure the hunger they feel (Alfiah, 2020).

Although the results of the research conducted did not find a relationship between sleep duration and obesity in adolescents, sleep duration, especially in sleep deprivation, is likely to be a risk factor for obesity in adolescents with the role of various hormones in the body. According to Tasya (2017) there are confounding factors such as diet, diet, genetic factors and so on that are not analyzed which can affect the results of the study. The use of the PSQI questionnaire as an instrument is reliable but cannot be used as an accurate diagnostic tool. To obtain more precise sleep quality results, non-invasive methods such as actigraphy can be used to monitor human rest and activity cycles (Tasya, 2017).

According to the researcher's assumption, obese adolescents tend to have poor sleep patterns, this is due to adolescence experiencing puberty so they tend to have the habit of sleeping late at night or the emergence of the habit of staying up late for various reasons such as doing schoolwork, playing online games, using social media. The results showed that adolescents with obesity mostly had poor sleep patterns, but there were several confounding factors that were not studied, namely genetic factors, diet, psychological factors, and socioeconomics. Thus causing the results of the study to be less accurate.

### **Relationship between Stress Levels and the Incidence of Obesity in Adolescents**

Based on the results of the bivariate analysis test between stress levels and the incidence of obesity in adolescents at SMPN 1 Muaragembong in 2024, the p-value is 0.006 ( $p \leq 0.05$ ) which indicates that there is a relationship between stress levels and the incidence of obesity in adolescents with an OR value of 14.400, which means that respondents with severe stress levels have a 14 times greater risk of obesity.

In line with research conducted by Mayataqillah (2023) shows that there is a significant relationship between stress levels and the incidence of obesity with a p value of 0.027. This research is also supported by the results of research Firmanurochim., dkk (2021) which shows that there is a significant relationship between stress levels and the incidence of obesity in adolescent girls with a p-

value of 0.016.

This is in line with the theory that explains that when a person is under stress, eating behavior will increase and contribute to obesity or overweight.

Psychological stress is often associated with increased food consumption especially in consuming high-fat foods. Stress can increase body weight because it increases blood cortisol levels, activates fat-storing enzymes and signals hunger to the brain. (Firmanurochim et al., 2021).

A survey conducted by the APA (Association of Psychology America) reported that as many as 39% overeat in response to stress. When a person experiences stress, CRF (Corticotropin-releasing factor) is sent from the hypothalamus to the pituitary gland which sends signals to the adrenal glands through Adrenocorticotrophic hormone.

The adrenal glands above the kidneys then secrete the hormone cortisol resulting in an increase in cortisol hormone. High levels of the hormone cortisol will stimulate the body to secrete the hormones insulin, leptin, and the neuropeptide Y (NPY) system which will make the brain arouse hunger so that the desire to eat more than usual arises, and can increase fat accumulation, especially in the abdomen. (Mayataqillah et al., 2023).

According to researchers' assumptions, some of the main problems of stress that occur in adolescents are caused by problems at school such as problems with teachers, problems with friends, academic difficulties and interpersonal problems such as conflicts with parents, siblings, or peers. When stressed, a person can eat more than usual and choose foods that are high in calories, sugar, and fat so that these circumstances will trigger obesity.

### **Relationship of Social Media Use with the Incidence of Obesity in Adolescents**

Based on the results of the bivariate analysis test between the use of social media and the incidence of obesity, the p.value is 0.012 ( $p \leq 0.05$ ) which indicates that there is a relationship between the use of social media and the incidence of obesity in adolescents at SMPN 1 Muaragembong in 2024 with an OR value of 6.095, which means that respondents with high social media use have a 6 times greater risk of obesity

In line with research conducted by Fransiska et al (2019) regarding the intensity of social media use, exercise habits and obesity in adolescents, it shows that individuals with low exercise habits are those with high social media use intensity of 44.4%. The results of this study also show that there is a significant relationship between the intensity of social

media use and exercise habits with a value of  $p = 0.000$ , the higher the intensity of social media use the lower the exercise habits and the greater the risk of obesity.

The results of this study are also in line with research conducted by A. Azzahra, (2022) which shows that there is a relationship between the intensity of social media use and nutritional status in adolescents. This is because social media is an activity that spends high sitting time. Adolescents who have high sitting habits were recorded as obese by 87.3%. Long social media time, light activities can result in poor eating patterns that will affect the risk of obesity in adolescents.

The use of social media can affect individual lifestyles, especially in children and adolescents who tend to have a lot of time to use social media. The influence of this lifestyle leads to decreased physical activity, changes in diet, increased energy intake will contribute to the development of obesity worldwide. High use of social media will be dominated by sedentary activities to access social media, so that the time used to do physical activity will be reduced, the higher the risk of obesity (Audrya Gharrieni et al., 2023)

The existence of android applications is very close to adolescents because it is easy to use anywhere and anytime so that the intensity of accessing social media in adolescents is around 1 hour more in 1 day more time is used to view social media, this will reduce the physical activity of adolescents because in 1 hour they only sit / lie down when accessing social media (Dinengsih & Hakim, 2020)

According to the researcher's assumption, adolescents are increasingly lazy and rarely take the time to do physical activity due to increased use of social media due to high sitting time. In addition, the use of social media affects the amount of social media addiction experienced by adolescents so that it affects sedentary behavior in adolescents. This high sedentary behavior affects adolescents' eating patterns to be irregular, low calorie intake, lack of energy expended and low physical activity, so that it can trigger obesity in adolescents.

### **CONCLUSIONS**

There is a significant relationship between fast food consumption, physical activity, stress level, and social media use) with the incidence of obesity in adolescents at SMPN 1 Muaragembong and there is no significant relationship between sleep patterns and the incidence of obesity in adolescents at SMPN 1 Muaragembong Bekasi in 2024.



## SUGGESTION

It is hoped that a health program can be held for obese patients through UKS or counseling guidance such as: a healthy diet for adolescents, doing morning exercises, conducting routine leisurely walks with all students and teachers in order to foster awareness of healthy living.

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## COMPARISON OF THE EFFECTIVENESS OF MORINGA AND SPINACH LEAF CAPSULES IN INCREASING HEMOGLOBIN LEVELS AMONG ANEMIC PREGNANT WOMEN IN THE THIRD

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### ABSTRAK : PERBANDINGAN EFEKTIFITAS KAPSUL DAUN KELOR DAN BAYAM DALAM MENINGKATKAN KADAR HEMOGLOBIN PADA IBU HAMIL ANEMIA KETIGA

Latar Belakang Data Dinas Kesehatan Kota Bandar Lampung tahun 2022 menunjukkan proporsi anemia pada ibu hamil sebesar 37,25% yaitu ibu hamil dengan kadar Hemoglobin < 8 gr%/dl sebesar 2,41%, Hb 8-11gr%/dl sebesar 36,3% . Anemia terjadi pada ibu hamil akibat kurangnya produksi sel darah merah akibat konsumsi nutrisi, terutama zat besi. Zat besi bisa didapatkan dengan mengonsumsi daun kelor. Sayuran lain yang dipercaya banyak mengandung zat besi adalah bayam, khususnya bayam hijau.

Tujuan penelitian untuk mengetahui perbandingan efektivitas kapsul daun kelor dan bayam dalam meningkatkan kadar Hb pada ibu hamil trimester III penderita anemia di Wilayah Kerja Puskesmas Panjang Kota Bandar Lampung Tahun 2023.

Metode Penelitian ini menggunakan jenis penelitian kuantitatif, dengan desain eksperimen semu. Populasi dalam penelitian ini adalah seluruh ibu hamil usia kehamilan trimester III yang melakukan kunjungan ANC di Puskesmas Panjang Kota Bandar Lampung dan mengalami anemia yang berjumlah 47 orang. Sampel sebanyak 36 responden. Teknik pengumpulan data menggunakan lembar angket dan analisis data yang digunakan adalah uji t independen.

Hasil penelitian menunjukkan rata-rata kadar hemoglobin ibu hamil trimester III sebelum mengonsumsi kapsul daun kelor adalah 10,46 gr/dl, dan pada kelompok daun bayam adalah 10,37 gr/dl. Rata-rata kadar hemoglobin ibu hamil trimester III setelah mengonsumsi kapsul daun kelor adalah 11,87 gr/dl, dan pada kelompok daun bayam adalah 11,24 gr/dl.

Kesimpulan Terdapat perbedaan efektivitas kapsul daun kelor dan bayam dalam meningkatkan kadar Hb pada ibu hamil TM III anemia di Wilayah Kerja Puskesmas Panjang Kota Bandar Lampung Tahun 2023 (p value 0,000).

Saran Diharapkan kepada tenaga kesehatan dapat mengoptimalkan penyuluhan mengenai konsumsi kapsul daun kelor untuk meningkatkan kadar hemoglobin pada ibu hamil trimester III dengan anemia.

Kata Kunci : Kapsul daun kelor, daun bayam, kadar Hb

### ABSTRACT

Background Data from the Bandar Lampung City Health Office in 2022 shows the proportion of anemia in pregnant women is 37.25%, namely pregnant women with Hemoglobin levels < 8 gr%/dl is 2.41%, Hb is 8-11gr%/dl is 36.3%. Anemia occurs in pregnant women due to insufficient production of red blood cells by the consumption of nutrients, especially iron. Iron can be obtained by consuming Moringa leaves. Another vegetable that is believed to contain a lot of iron is spinach, especially green spinach.

The Purpose of the study was to find out the comparison of the effectiveness of moringa and spinach leaf capsules in increasing Hb levels in third trimester pregnant women with anemia in the Working Area of the Panjang Community Health Center, Bandar Lampung City, in 2023.

Methods This study uses a type of quantitative research, with a quasi-experimental design. The population in this study were all pregnant women with their third trimester of gestation who made ANC visits at the Panjang Community Health Center in Bandar Lampung City and experienced anemia with a total of 47 people. A sample of 36 respondents. The data collection technique uses a questionnaire sheet and the data analysis used is the independent t-test.

The results showed that the average hemoglobin level in third trimester pregnant women before consuming moringa leaf capsules was 10.46 gr/dl, and in the spinach leaf group was 10.37 gr/dl. The average hemoglobin

level in third trimester pregnant women after consuming moringa leaf capsules was 11.87 gr/dl, and in the spinach leaf group was 11.24 gr/dl.

**Conclusion** There is a difference in the effectiveness of moringa and spinach leaf capsules in increasing Hb levels in TM III pregnant women with anemia in the Working Area of the Panjang Community Health Center, Bandar Lampung City, 2023 (p value 0.000).

**Suggestion** It is hoped that health workers can optimize counseling regarding the consumption of moringa leaf capsules to increase hemoglobin levels in third trimester pregnant women with anemia.

**Keywords:** Moringa leaf capsules, spinach leaves, Hb levels

## INTRODUCTION

Pregnancy occurs when a sperm fertilizes an ovum leading to implantation. According to the international calendar, the duration of a normal pregnancy from fertilization to birth is typically 40 weeks or 9 months. It can be concluded that pregnancy is the process where the egg and sperm unite either inside or outside the uterus, and it concludes with the release of the baby and placenta through the birth canal. (Eniyati, 2019).

During pregnancy, the body undergoes metabolic changes that can make it difficult to diagnose certain blood disorders and assess their severity. One of the most significant changes is the increased demand for oxygen from the mother's body, placenta, and growing fetus. If there aren't enough red blood cells or hemoglobin (which carries oxygen) in the blood to meet the body's needs during pregnancy, it can lead to anemia. (Cunningham dkk, 2013).

According to a study conducted by Bungsu in 2012, 40% of maternal deaths occur due to bleeding during childbirth while an estimated 20% are caused by low hemoglobin levels (nutritional anemia) during pregnancy. Nutritional anemia is often caused by a deficiency of iron, folic acid, vitamin B12, and vitamin A. Among these, iron deficiency is responsible for 75% of nutritional anemia cases during pregnancy. Pregnant women require twice the amount of iron due to increased blood volume without plasma volume expansion, which is necessary for fetal growth and supporting the mother's needs.

According to the World Health Organization (WHO), the prevalence of anemia in pregnant women has been recorded at 4.5% from 2000 to 2019. However, in Indonesia, the incidence of anemia in pregnant women has increased from 42.1% in 2015 to 44.2% in 2019. (WHO, 2020).

According to the Basic Health Research (Riskesdas) conducted in 2018, almost half (48.9%) of pregnant women in Indonesia suffer from anemia. This high prevalence indicates that anemia is a severe public health issue in Indonesia, as it exceeds

the anemia prevalence limit of 40%. (Kemenkes RI, 2018).

According to data from the Bandar Lampung City Health Office in 2022, 37.25% of pregnant women suffer from anemia. This means that 2.41% of pregnant women have Hemoglobin levels of less than 8 gr/dl, while 36.3% have Hb levels of 8-11gr/dl. Although the prevalence of anemia in pregnant women has decreased over the years, it still poses a significant risk to pregnant women. Anemia can lead to complications in pregnancy, such as failure to gain weight, increased susceptibility to infections, and premature delivery of a low birth weight (LBW) baby, and even result in abortion. (Dinas Kesehatan Kota Bandar Lampung, 2022).

According to a study conducted at the Panjang Primary Health Care in Bandar Lampung City, among 147 pregnant women who visited the center, 2 of them (1.4%) had moderate anemia, 96 of them (65.3%) had mild anemia, while 51 of them (34.6%) were not anemic. The study was based on the examination of their Hb levels. (Panjang Kota Bandar Lampung, 2022).

Anemia is a condition that occurs when the body doesn't get enough oxygen due to a lack of red blood cells. This can lead to a reduction in physical capability. In pregnant women, anemia can increase the risk of complications during pregnancy and childbirth. These complications can include maternal death, premature birth, low birth weight, and perinatal mortality. Anemic women are also more likely to experience antepartum and postpartum hemorrhage, which can be fatal due to their reduced ability to tolerate blood loss. The effects of anemia during pregnancy can range from mild symptoms to serious complications such as miscarriage, premature labor, bleeding during labor, postpartum infections, low breast milk production, and fetal disorders. These disorders can include miscarriage, growth restriction, congenital defects, low birth weight, and perinatal mortality. (Pujiastutik, 2020).

During pregnancy, some women develop anemia due to insufficient production of red blood cells, particularly caused by the lack of nutrients,

especially iron. Iron deficiency anemia is one form of anemia that affects both mothers and children, and is often linked to nutritional issues. There are several factors that can contribute to iron deficiency anemia, including low iron intake due to community consumption patterns, increased body needs caused by ailments, chronic diseases, pregnancy, menstruation, and socioeconomic factors. (Paendong, 2016).

Iron is one of the most important minerals for the body, and it can be found in moringa leaves. Moringa is known for its high levels of antioxidants, particularly in its leaves. Phytochemical tests have revealed that moringa leaves (*Moringa oleifera*) contain various antioxidants, such as tannins, steroids and triterpenoids, flavonoids, saponins, interquinones, and alkaloids. (Kasolo et al., 2010).

Vitamin C is another important component of Moringa that aids in the dissolution of iron in the human body. When combined with iron, vitamin C forms a soluble iron ascorbate complex, which organs can easily absorb. The conversion of non-heme iron from Ferri to Ferro metabolic compounds is more effective when the stomach has a more acidic pH. Vitamin C can increase the acidity, thus leading to an increase in iron absorption by up to 30%. Folic acid, on the other hand, is crucial for the formation of new cells and can affect Fe in the blood, which is expected to increase hemoglobin levels. (Nur, 2017).

Consuming Moringa (*Moringa oleifera*) can be an alternative way to address malnutrition in Indonesia. Moringa is a good source of iron (Fe), a micromineral that plays a vital role in the body by helping to build red blood cells. The iron content in Moringa can support the production of heme, which in turn can improve hemoglobin levels.

Scientific research has proven that Moringa leaves are a rich source of nutrients. They contain seven times more vitamin C than citrus fruits, four times more vitamin A than carrots, four times more calcium than milk, three times more potassium than bananas, three times more iron than spinach, and twice as much protein as yogurt or an egg. Moreover, Moringa leaves are free of harmful substances, making them safe for consumption without any side effects. To date, there have been no reports of any cases of poisoning caused by the consumption of Moringa leaves. (Isnainy, 2020).

According to a study conducted by Susiyanti in 2023, consuming moringa can significantly increase hemoglobin levels in pregnant women with anemia in the Lekok Community health center area of Pasuruan Regency. Dried moringa leaves are rich in vitamin C, containing 773 mg of vitamin C per 100 grams of dry matter. Additionally, Moringa leaf

extract supplements are considered to be more effective in preventing anemia and maintaining normal hemoglobin levels.

Spinach, particularly green spinach, is another vegetable that is believed to contain a lot of iron, besides moringa leaves. Iron content in spinach plays a significant role in the formation of hemoglobin (Anggraeni, 2018). Spinach (*Amaratus* sp) is known as the king of vegetables due to its high nutritional value. Spinach is rich in vitamins A, B, and C, and contains important minerals such as calcium, phosphorus, and iron. Spinach is a high source of iron which promotes body growth and maintains good health. The iron content in 100 grams of green spinach is 8.3 mg.

The results of Istiana's research (2019) showed that there was an effect of spinach vegetable consumption on reducing the incidence of anemia in pregnant women at Fatimah Medika Clinic, Terung Kulon Village, Krian District, Sidoarjo Regency.

There is currently a lack of research comparing the effectiveness of using moringa and spinach leaf extract capsules to increase hemoglobin levels in pregnant women. Therefore, it is essential to conduct further studies to investigate the efficacy of these capsules in increasing Hb levels. To address this issue, we are writing an article titled "Comparison of the Effectiveness of Moringa and Spinach Leaf Capsules in Increasing Hemoglobin Levels Among Anemic Pregnant Women in the Third Trimester in the Panjang Community health center Area, Bandar Lampung City in 2023". This study aims to provide valuable information that can help improve the health and well-being of pregnant women who are at risk of anemia.

## RESEACRH METHODS

This study is quantitative and was conducted between February and June 2023 at the Panjang Community health center Area in Bandar Lampung City. The research design employed a Quasi-Experimental method, specifically the Pretest-Posttest design with a control group. The population under study were pregnant women in their third trimester who were receiving antenatal care at Panjang Community health center, Bandar Lampung City, and were experiencing anemia. The total number of such women was 47, and the sample size was 36 third-trimester pregnant women with anemia. Out of these, 18 were given moringa capsules, while the remaining 18 were given spinach leaves. The bivariate test used in this study is the Independent T test.

## RESEACRH RESULTS

### Characteristics of Respondents

It was discovered from the table above that out of the 36 respondents examined, the majority of third-trimester pregnant women in the Panjang Community health center Area of Bandar Lampung

City in 2023 were between the ages of 20-35 years old, specifically 21 respondents (58.3%). Additionally, 16 respondents (44.4%) had a high school education, and 24 respondents (66.7%) were unemployed, or were housewives.

**Table 1**  
**Characteristics of Third-trimestes Pregnant Women**

Characteristics	Total	Percentage (%)
Age		
< 20 years old	10	27.8
20-35 years old	21	58.3
> 35 years old	5	13.9
Education:		
Elementary school	4	11.1
Junior high school	10	27.8
Senior high school	16	44.4
University	6	16.7
Occupation:		
Housewife/ Unemployed	24	66.7
Private Employee	6	16.7
Civil Sevant	2	5.6
Entrepreneur	4	11.1
Others	0	0.0

### Univariate Analysis

**Table 2**  
**Average Hemoglobin Level in Third Trimester Pregnant Women Before and After Consumption of Moringa Leaf Capsules**

Measurement	Hb Levels (gr/dl)				
	n	Mean	SD	Min-Max	95% CI
Before	18	10,46	0,311	10-10,9	10,3-10,6
After	18	11,87	0,346	11,3-12,5	11,7-12,04

According to the table provided, the average hemoglobin level in third trimester pregnant women before taking moringa capsules is 10.46 gr/dl. After

taking the moringa capsules, the average hemoglobin level in third trimester pregnant women is 11.87 gr/dl.

**Tabel 3**  
**Average Hemoglobin Level in Third Trimester Pregnant Women Before and After Consumption of Spinach Leaf Capsules**

Measurement	Hb Levels (gr/dl)				
	n	Mean	SD	Min-Max	95%CI
Before	18	10,37	0,283	10-10,9	10,2-10,5
After	18	11,24	0,495	10,5-12,2	10,9-11,48

Based on the table provided, the average hemoglobin levels of third-trimester pregnant women before consuming spinach leaves was 10.37 gr/dl.

After consuming spinach leaves, the average hemoglobin levels of third-trimester pregnant women increased to 11.24 gr/dl.

## Normality Test

**Table 4**  
**Normality Test Results**

Variable	Sig	Description
Pre Moringa Leaf Capsules	0,066	Normal
Post Moringa Leaf Capsules	0,721	Normal
Moringa Leaf Capsules Difference	0,121	Normal
Pre Spinach Leaf Capsules	0,098	Normal
Post Spinach Leaf Capsules	0,062	Normal
Spinach Leaf Capsules Difference	0,539	Normal

The table above shows that the normality test Sig value. Shapiro Wilks test > 0.05, so all data is normally distributed.

## Bivariate Analysis

According to Table 5, the results showed that the average increase in Hb levels in the moringa leaf capsules group was 1.41 g/dl, with a standard deviation of 0.242 and a standard error of 0.057. In contrast, the average increase in Hb levels in the spinach leaf group was 0.87 g/dl with a standard deviation of 0.370 and a standard error of 0.087.

These findings indicate that there is a significant difference in the average increase in Hb levels between the moringa leaf capsule group and the spinach leaf group. The statistical test results showed a p-value of 0.000 ( $p\text{-count} < \alpha = 0.05$ ), indicating that at  $\alpha = 5\%$ , there is a significant difference in the effectiveness of moringa leaf capsules and spinach leaves in increasing Hb levels in third-trimester pregnant women with anemia in the Panjang Community health center Area, Bandar Lampung in 2023.

**Table 5**  
**Comparison of the Effectiveness of Moringa Leaf Capsules and Spinach Leaf Capsules in Increasing Hemoglobin Levels in Third Trimester Pregnant Women with Anemia**

Increase in Hb Levels	Hb Level (gr/dl)				
	N	Mean	SD	SE	P Value
Moringa Leaf Capsules	18	1.41	0.242	0,057	0.000
Spinach Leaf Capsules	18	0.87	0.370	0,087	

## DISCUSSION

### Average Hemoglobin Level in Third Trimester Pregnant Women Before Consumption of Moringa and Spinach Leaf Capsules

According to the table presented, the average hemoglobin level in third trimester pregnant women before taking moringa leaf capsules was 10.46 gr/dl, while in the spinach leaf group, it was 10.37 gr/dl.

Hemoglobin is a colored substance found in red blood cells that plays a crucial role in the transportation of oxygen and carbon dioxide in the body (Adriani & Wirjatmadi, 2012). The formation of hemoglobin involves the creation of a pyrrole compound, which then joins together to form a protoporphyrin compound, then binds to iron to form a hem molecule. Finally, it binds to a globin molecule, resulting in the formation of Hb (Sartika, 2021).

Symptoms of anemia include dizziness, foggy, lethargy, weakness, fatigue, enlarged spleen, lack of appetite, decreased body fitness, and impaired wound healing (Irianto K, 2014). Anemia

during pregnancy can lead to complications during childbirth, and increase the risk of maternal and infant mortality (Irianto K, 2014).

Anemia is a common problem in obstetrics, particularly in third-trimester pregnant women, where it is defined as a hemoglobin level of less than 10 g/dl. Despite having adequate iron levels, pregnant women usually have a hemoglobin concentration of around 11-12 g/dl before delivery. However, this is further worsened by blood loss during childbirth and in the postpartum period.

The findings of this study are consistent with Sartika's research (2021), which demonstrates the average Hb levels in first-trimester pregnant women before and after treatment, as well as the impact of moringa leaf extract intervention on increasing Hb levels. The average Hb level before intervention was 11.440 g/dL (SD = 0.7890).

The researcher attributes the low Hb level in participants to the fact that the sample in this study consisted of third-trimester pregnant women, who

experience a physiological process called hemodilution or blood dilution at that stage of pregnancy, resulting in a decrease in Hb levels.

#### **Average Hemoglobin Level in Third Trimester Pregnant Women After Consumption of Moringa and Spinach Leaf Capsules**

According to the table above, pregnant women in their third trimester who consumed moringa leaf capsules had an average hemoglobin level of 11.87 gr/dl, while those in the spinach leaf group had an average level of 11.24 gr/dl.

The increase in hemoglobin levels was due to the high iron content in Moringa leaves. In fact, 100 grams of Moringa leaf powder contains 44.1 mg of iron, which is enough to meet 196% of the recommended daily iron requirement. The iron content in dried moringa leaves or moringa leaf flour is 25 times higher than spinach, making it a natural alternative for pregnant women who suffer from anemia.

The study conducted by Handayani and Priyanti (2021) was a quantitative research using The One Group pre-test post-test design. The sample technique used in this study was total sampling/total population of 32. The data was analyzed using the paired t-test statistical test. With a significance level of 0.05, the results showed that the p value was 0.000 (p value < 0.05). Therefore, it can be concluded that there is a significant effect of moringa leaf extract consumption on the increase of Hb levels in pregnant women at the Semanu Community health center.

According to Arini's research in 2018, there were notable changes in Hb (Hemoglobin) levels following the administration of moringa leaf flour in both the intervention and control groups. Prior to being given moringa leaf flour, the mean value for Hb levels in the intervention group was 11.248 mg/dl, which increased to 12.27 mg/dl following the treatment. On the other hand, the control group's Hb levels increased from 10.92 mg/dl to 11.15 mg/dl, indicating a smaller increase. The Wilcoxon test results showed that the p-value for the intervention group was 0.000, which is less than the level of significance ( $\alpha$ ) set at 0.05. Conversely, the control group's p-value was 0.271, which is greater than the level of significance ( $\alpha$ ) set at 0.05. This suggests that there is a significant difference between the intervention and control groups. Therefore, it can be concluded that moringa leaf flour has an effect on increasing Hb levels in the intervention group. Additionally, the Mann Whitney test results showed a p-value of 0.001, which is less than the level of significance ( $\alpha$ ) set at 0.05, indicating that there is an effect of moringa flour on increasing Hb levels when

comparing the intervention and control groups after the treatment.

Researchers have found that pregnant women who were given moringa leaves experienced an increase in their Hb levels. This increase is due to various factors such as the woman's condition, her consistency in taking blood supplement tablets, and her dietary habits. The consumption of moringa leaves and its consistency also contribute to the increase in Hb levels, which in turn has a positive impact on the mother's immune system. It's important to note that a combination of these factors helps in increasing the Hb levels of pregnant women.

#### **Comparison of the Effectiveness of Moringa Leaf Capsules and Spinach Leaf Capsules in Increasing Hemoglobin Levels in Third Trimester Pregnant Women with Anemia**

The study found that there was a difference in the average increase in Hb levels between the moringa leaf capsule group and the spinach leaf group. The average increase in Hb levels after taking moringa capsules was 1.41 g/dl, with a standard deviation of 0.242 and a standard error of 0.057. On the other hand, the average increase in Hb levels in the spinach leaf group was 0.87 g/dl with a standard deviation of 0.370 and a standard error of 0.087. The statistical test results showed a p-value of 0.000 (p count <  $\alpha$  = 0.05), indicating that there was a significant difference in the effectiveness of moringa leaf capsules and spinach leaves in increasing Hb levels in third-trimester pregnant women with anemia in the Panjang Community health center Area of Bandar Lampung City in 2023.

Research has shown that the high iron content in moringa leaves makes it effective in overcoming anemia. According to Savitri A (2016), and consistent with research conducted by Sylvie et al (2013), moringa leaf powder can increase hemoglobin levels by 1-3 gr / dL. This can be achieved by taking 2x2 capsules of moringa leaf powder per day for 30 days, with each capsule containing 500 mg of moringa leaf powder.

It is important to note that only 5-15% of dietary iron can be absorbed by adults who have sufficient iron levels. However, in cases of iron deficiency, the absorption can increase up to 50%. The amount of iron that the body needs plays a significant role in this process. When there is a shortage of iron or an increased demand for it, the absorption of non-heme iron can increase up to 10 times while heme iron can increase twice as much (Almatsier S, 2010). Moringa leaves are a great source of the elements needed for the formation of hemoglobin. The process of hemoglobin formation



requires a combination of succinate molecules (carbohydrates), glycine (amino acids), iron elements (ferum), globin molecules, and various enzymes and vitamins. These vitamins and minerals include potassium, phosphorus, pantothenic acid, pyridoxine (B6), niacin, folic acid, riboflavin, and vitamin C, which plays a crucial role in facilitating the work of enzymes in carrying out their functions more efficiently.

Consuming moringa leaves can help boost hemoglobin levels. This is because moringa leaves are rich in iron, which is an essential ingredient in hemoglobin formation. The iron content in dried moringa leaves (moringa leaf extract) is about 27.1 grams per 100 grams (Bora, 2017).

During pregnancy, giving moringa and spinach leaves to women can increase their Hb levels. However, moringa leaves are more effective in increasing Hb levels compared to spinach leaves. This is because moringa leaves contain more substances that can increase Hb levels than spinach leaves. Moringa leaves are an excellent source for treating iron deficiency anemia. The iron content in spinach is only 3.9 mg per 100 grams of spinach leaves, which is significantly lower than that of moringa leaves. Therefore, moringa leaves are more influential in increasing Hb levels in pregnant women after consumption.

Iron plays an essential role in the body, including transporting oxygen from the lungs to the body tissues, acting as an electron transporter in cells, and being a part of various enzyme reactions in human body tissues. Hematopoiesis (blood formation) also requires iron, mainly in the synthesis of hemoglobin (Hb). The average amount of iron in the body is 4-5 grams, with approximately 65% found in the form of hemoglobin. About 4% is found in the form of myoglobin, and 1% is found in the form of various heme compounds that can increase intracellular oxidation. Additionally, 0.1% joins the transferrin protein in the blood plasma, and 15-30% is mainly stored in the system.

Iron deficiency can have negative effects on the growth of both body cells and brain cells, as well as lowering body immunity and hemoglobin levels. The body's iron status depends on iron absorption, which can be enhanced by certain factors. Vitamin A and vitamin C are iron enhancers that can improve iron absorption. In addition to iron, Moringa leaves (*Moringa oleifera* L.) also contain these vitamins. Vitamin A can help with iron excretion from the liver, and supplementing with both vitamins can improve their status in the body. Vitamin C, on the other hand, helps absorb non-heme iron by converting it into a more easily absorbed form.

Moringa leaves also contain protein, which has a crucial role in iron transportation in the body. Without sufficient protein intake, iron transportation can be inhibited, resulting in iron deficiency and lower hemoglobin levels. The amount of protein intake is directly proportional to hemoglobin levels in the blood.

## CONCLUSION

The average hemoglobin level of third trimester pregnant women before taking moringa capsules was 10.46 gr/dl, while it was 10.37 gr/dl for those who consumed spinach leaves. After taking moringa capsules, the average hemoglobin level of third trimester pregnant women was found to be 11.87 gr/dl, and it was 11.24 gr/dl for those who consumed spinach leaves. The study conducted in the Panjang Community health center Area, Bandar Lampung City in 2023 shows that there is a significant difference in the effectiveness of moringa leaf capsules and spinach leaves in increasing Hb levels in third trimester pregnant women with anemia (p value 0.000).

## RECOMMENDATION

Health Workers especially at Panjang Community health center, Bandar Lampung According to the findings, the intake of moringa capsules helped to raise hemoglobin levels in pregnant women who were in their third trimester and had anemia. This indicates that medical professionals should emphasize the significance of consuming moringa capsules in order to improve hemoglobin levels in such women. Third-trimester Pregnant Women with Anemia. Pregnant women in their third trimester who suffer from anemia are advised to take Moringa leaf capsules for 15 days, along with iron (Fe) tablets. It is important to take the Fe tablets in the right way to ensure proper absorption, such as taking them with water or fruit juice, and not with tea. Other Researchers, The study results showed a significant difference in the increase of Hb levels between pregnant women who were given moringa capsules and those who were given spinach capsules. This difference can be attributed to the significant difference in iron values in moringa and spinach capsules. Moringa capsules contain 28.2 mg of iron and 1125.71 mg of vitamin C while spinach capsules contain only 3.9 mg of iron and 80 mg of vitamin C. Hence, for future studies, it is suggested to use materials with equivalent iron content to avoid any bias in the study results. Additionally, it is recommended to conduct similar research with a more rigorous selection of samples, such as using samples with the same nutritional status (normal).

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## EFFECTIVENESS OF DATE PALM JUICE WITH HEMOGLOBIN LEVELS IN POSTPARTUM MOTHERS

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### ABSTRAK : EFEKTIVITAS SARI KURMA DENGAN KADAR HEMOGLOBIN PADA IBU PASCA PERSALINAN

Latar Belakang : Anemia pada masa nifas adalah suatu komplikasi yang dapat terjadi pada ibu setelah melahirkan karena kadar haemoglobin kurang dari normal, Akibat dari anemia yang tidak tertangani pada ibu nifas biasa nya dapat terjadi atonia uteri, serta dapat menimbulkan perdarahan post partum yang memudahkan infeksi puerperium, pengeluaran ASI berkurang dan mudah terjadi infeksi mammae serta mengurangi persentasi kerja, Upaya pencegahan dan penanggulangan anemia ibu nifas secara non farmakologi untuk menangani anemia dapat dilakukan dengan mengkonsumsi sari kurma.

Tujuan : Penelitian untuk mengetahui pengaruh pemberian sari kurma terhadap kadar hemoglobin ibu nifas Di RSUD Akhmad Berahim.

Metode : Penelitian jenis penelitian kuantitatif dengan rancangan penelitian *Quasy Eksperimen* dengan pendekatan *pretest-posttest with control group*. Sampel sebanyak 15 responden pada masing – masing kelompok, teknik sampling yang digunakan adalah *purposive sampling*. Analisis data secara univariat dan bivariat (*Uji Paired T-Test*).

Hasil : Penelitian kadar hemoglobin ibu nifas sebelum diberikan sari kurma pada kelompok intervensi dengan *mean* 10,400 gr/dl nilai min 9,5 gr/dl dan nilai max 11,7 gr/dl, setelah setelah diberikan sari kurma dengan *mean* 11,333 gr/dl nilai min 10,5 gr/dl dan nilai max 12,4 gr/dl. Kadar hemoglobin ibu nifas pada kelompok control hari ke 1 dengan *mean* 10,473 gr/dl nilai min 9,3 gr/dl dan max 11,5 gr/d, Hari ke 14 dengan *Mean* 10,947 gr/dl nilai min 10,3 gr/dl dan nilai max 11,7 gr/dl.

Kesimpulan : Hasil uji statistik didapatkan nilai *P value* = 0,000 (<0,05) yang artinya terdapat efektivitas pemberian sari kurma dengan kenaikan kadar hemoglobin pada ibu nifas di RSUD Akhmad Berahim. Saran Diharapkan bidan dapat melaksanakan praktik kebidanan berupa pemberian KIE tentang pentingnya untuk mengkonsumsi makanan yang mengandung zat besi serta konsumsi makanan yang kaya akan gizi dan mengandung vitamin C seperti sari kurma.

Kata kunci: anemia, hemoglobin, ibu nifas, sari kurma

### ABSTRACT

Background: Anemia during the puerperium is a complication that can occur in mothers after childbirth because haemoglobin levels are less than normal, As a result of untreated anemia in puerperal mothers can usually occur uterine atony, and can cause postpartum bleeding which facilitates puerperium infection, reduced milk expenditure and easy mammary infection and reduces the percentage of work, Efforts to prevent and overcome anemia of postpartum mothers in a non-pharmacological manner to deal with anemia can be done by consuming date palm essence.

Objective: Research to determine the effect of giving date palm juice on hemoglobin levels of postpartum mothers at RSUD Akhmad Berahim.

Method: Quantitative research type research with Quasy research design Experiment with pretest-posttest approach with control group. A sample of 15 respondents in each group, the sampling technique used was purposive sampling. Univariate and bivariate data analysis (Paired T-Test).

Results: Research on hemoglobin levels of postpartum mothers before being given date palm juice in the intervention group with a mean of 10,400 gr/dl min value of 9.5 gr/dl and max value of 11.7 gr/dl, after being given date palm juice with a mean of 11,333 gr/dl min value of 10.5 gr/dl and max value of 12.4 gr/dl. Hemoglobin levels of puerperal mothers in the control group day 1 with a mean of 10.473 gr/dl min value of 9.3 gr/dl and max 11.5 gr/d, Day 14 with a mean of 10.947 gr/dl min value of 10.3 gr/dl and max value of 11.7 gr/dl.

Conclusion: The results of statistical tests obtained P value = 0.000 ( $<0.05$ ) which means that there is effectiveness in giving date palm juice with an increase in hemoglobin levels in postpartum mothers at Akhmad Berahim Hospital. Suggestion It is hoped that midwives can carry out midwifery practices in the form of giving IECs about the importance of consuming foods that contain iron and consumption of foods that are rich in nutrients and contain vitamin C such as date palm essence.

Keywords : anemia, hemoglobin, puerperal mother, date palm juice

## INTRODUCTION

The puerperium is a period that begins after the placenta comes out and ends when the uterus recovers as before and lasts about 6 weeks. Most maternal deaths occur during the puerperium, which is 54.55%. The puerperium period that is at risk of maternal death mainly occurs in the immediate postpartum period (50%), in the early postpartum period (20%) and the latepostpartum period (5%) (Febriani & Juwita, 2021). Some deaths can be caused by bleeding after delivery. Common causes of postpartum hemorrhage are the general condition of mothers who are weak due to anemia, multiparity, postoperative measures, excessive uterine distention, maternal fatigue, labor trauma, with contraction disorders (Yasin et al., 2021).

One of the causes of postpartum hemorrhage is anemia, anemia is a condition of decreased hemoglobin, hematocrit and erythrocyte counts below normal values. In people with anemia, more often called lack of blood, red blood cell levels (hemoglobin) below normal values. The cause can be due to lack of nutrients for blood formation, such as iron, folic acid and vitamin B12. But what often happens is anemia due to iron deficiency (Student et al., 2021).

Anemia during the puerperium is a complication that can occur in mothers after childbirth because haemoglobin levels are less than normal, which can cause iron loss and can affect the lactation process and can cause the uterus not to contract (Azwar 2009; Wahyuni, 2019). Anemia in puerperal mothers can occur due to bleeding so that there is a lack of many iron elements. The need for iron increases, in the presence of bleeding, gemeli, multiparity, the older the pregnancy. Abnormal absorption or disturbed gastrointestinal tract, for example vitamin C deficiency so that Fe absorption is disrupted. Intake is lacking, for example, poor menu quality or vomiting continues. The problem is, currently many mothers are still not right in consuming Fe tablets (Kristianti, et al, 2015).

Based on a WHO report in 2020, the prevalence of postpartum anemia in developing countries ranges from 50 – 80% (Herlina, 2022). The prevalence of anemia in postpartum mothers in

Indonesia alone is 54.8% of the number of maternity mothers. (Ministry of Health RI, 2018). The problem of anemia during the puerperium is not widely studied, but estimates can be made based on the prevalence of bleeding during labor, with the opinion that blood discharge during childbirth can reduce hemoglobin levels. According to data on the gender and child profile of North Kalimantan Province, the incidence of bleeding in North Kalimantan is 42%. (Health Office & North, 2020). While the incidence of mild anemia in postpartum mothers was 51.3% and moderate anemia was 29.7% at RSUD Akhmad Berahim.

As a result of untreated anemia in postpartum mothers, bleeding can usually occur, placental retention and uterine atony (Wahyuni, 2019). and can cause postpartum bleeding which facilitates puerperium infection, reduced milk expenditure and easy mammary infection and reduces the percentage of work, both in daily housework and in caring for infants (Wijanarko, 2014).

Efforts to prevent and overcome postpartum anemia pharmacologically that can be done are such as giving Fe tablets for 4 weeks, Some researchers found that iron absorption with Vitamin C has a significant increase (Herlina, 2022). Meanwhile, non-pharmacology to treat anemia can be done by consuming date palm juice (Widowati et al., 2019).

The fruit of the date palm tree is often consumed by the community because it is high in nutrients and has great potential as a cure for various diseases (Saputri et al., 2021). Unlike most other fruits, dates are high in carbohydrates so they can provide enough energy. Some of the sugar content consists of glucose, fructose, and sucrose, although the sugar content in high dates reaches 70%, which is 70 – 73 grams per 100 grams of dry weight, the sugar content has been processed naturally and is not harmful to health (Tresno, 2023). According to (Safitri & Us, 2023) dates contain many nutrients that play a role in the formation of haemoglobin, including iron, iron contained in dates, which is 1.5 mg. Where iron becomes one of the components in the blood to

carry oxygen in the blood (Setiowati & Nuriah, 2018).

Based on research conducted by Tandja (2020) to reduce the number of anemia in postpartum can be done by increasing hemoglobin levels, one of which is by consuming date palm juice which can increase hemoglobin levels. Research by Widowati et al., (2019) showed that the average increase in respondents' hemoglobin levels after consumption of date palm juice for 10 days was 1.0 g / dL.

According to Febriani & Juwita's (2021) research, the combination of dates rich in a combination of glucose, Ca, Fe, Zn, Cu, P and niacin with palmyra which is rich in vitamins A, Na and K is able to improve hemoglobin levels in anemic patients.

In Anggeriani & Yatiliu (2020) research after the intervention was given, it was found that there was an effect of giving red guava juice and dates on increasing Hb levels in postpartum mothers with an increase in Hb levels of 0.9gr%.

Based on a preliminary study conducted at RSUD Akhmad Berahim in August-September there were 37 postpartum mothers, 18.9% postpartum mothers with normal HB 12-13 gr/dl, 51.3% postpartum mothers had mild anemia 11.0-11.9 gr/dl, 29.7% postpartum mothers who had moderate anemia 10.9-8.0 gr/dl and 5.4% postpartum mothers who had severe anemia <8.0gr/dl. For the treatment of reducing HB levels in postpartum mothers at RSUD Akhmad Berahim, it has been carried out thoroughly by distributing Fe tablets to postpartum mothers, while herbal therapy has not been carried out regularly and programmatically.

Based on the explanation above, researchers want to know the effectiveness of giving date palm juice on hemoglobin levels in postpartum mothers which will be carried out at RSUD Akhmad Berahim. This hospital was chosen as a research site because there has been no research conducted at Akhmad Berahim Hospital related to the effectiveness of giving date palm juice

on hemoglobin levels in postpartum mothers. This is seen from the factor of iron and protein content contained in date palm juice given to postpartum mothers.

## RESEARCH METHODS

Type of quantitative research with the Quasy method Experiment with a pretest-posttest approach approach with control group. The population of this study is postpartum mothers at RSUD Akhmad Berahim from October - November 2023, there are 30 postpartum mothers. The sample used 30 respondents with purposive sampling techniques. The research was conducted at RSUD Akhmad Berahim, Samarinda. The instrument uses Inform Consent Sheet, Observation Sheet, Standard Operating Procedure (SOP) Sheet, Date Sari, Fe tablet, digital Hb measuring device. Univariate and bivariate data analysis (Paired T-Test).

## RESEARCH RESULTS

Based on Table 1 above, it can be known the general characteristics of postpartum mothers at RSUD Akhmad Berahim in 2023, by looking at the most age is the age of 20-35 years as many as 24 respondents (80.0%) in the intervention group and control group, the most education is high school as many as 10 respondents (66.7%) in the intervention group and as many as 8 respondents (53.3%) in the control group, the most jobs are self-employed and IRT as many as 6 respondents (40.0%) in the intervention group and in the group control IRT as many as 8 respondents (53.3%), the most BMI is the ideal BMI as many as 14 respondents (93.3%) in the intervention group and control group, History of disease in the anemia intervention group 2 respondents (13.3%) DHF 1 respondent (6.7%) magh 5 respondents (33.3%) typhus 1 respondent (6.7%) other diseases 1 respondent (6.7%), while the history of disease in the control group is anemia as many as 6 respondents (40.0%) and 9 respondents (60.0%) have no history of disease.

**Table 1**  
**General Characteristics of Mrs. Nifas at RSUD Akhmad Berahim**

Characteristics Responden	Intervensi		Control	
	f	P (%)	f	P (%)
Umur				
< 20 years	1	6.7	-	-
20-35 years	12	80.0	12	80.0
> 35 years	2	13.3	3	20.0
Education	f	P (%)	f	P (%)
Junior High School	3	20.0	2	13.3

Senior High School	10	66.7	8	53.3
College	2	13.3	5	33.3
Work	<b>f</b>	<b>P (%)</b>	<b>f</b>	<b>P (%)</b>
Civil Servants	3	20.0	4	26.7
Self employed	6	40.0	3	20.0
Housewife	6	40.0	8	53.3
IMT	<b>f</b>	<b>P (%)</b>	<b>f</b>	<b>P (%)</b>
Ideal	14	93.3	14	93.3
Not ideal	1	6.7	1	6.7
History Of The Disease	<b>f</b>	<b>P (%)</b>	<b>f</b>	<b>P (%)</b>
None	5	33.3	9	60.0
Anemia	2	13.3	6	40.0
Dbd	1	6.7	-	-
Magh	5	33.3	-	-
typhus	1	6.7	-	-
Others	1	6.7	-	-

### Uji Normalitas

**Table 2**  
**Uji Normalitas Shapiro-Wilk**

Hemoglobin		N	P-Value
Intervensi	Pretes	15	0,624
	Postes	15	0,947
Control	Pretes	15	0,305
	Postes	15	0,486

Based on table 2 of the data normality test using shapiro-wilk, it was found that all variables in the intervention group and control group had significantly greater than  $P > (0.05)$  so it was stated that the data were normally distributed.

### Univariate Analysis

Hemoglobin levels of postpartum mothers before date palm juice is given

**Table 3**  
**Hemoglobin levels of postpartum mothers before date palm juice is given**  
**In the intervention group at RSUD Akhmad Berahim**

Hemoglobin	N	Mean	Median	Sd	Se	Min - Max
Pre test	15	10,400	10,400	0,5868	0,1515	9,5 – 11,7 gr/dl

From table 3 above, it can be seen that the hemoglobin levels of postpartum mothers before being given date palm juice in the intervention group at RSUD Akhmad Berahim, with a mean of 10,400 gr/dl, min value of 9.5 gr/dl and max value of 11.7 gr/dl

### Hemoglobin Levels of Postpartum Mothers After Being Given Date Palm Juice

From table 4 above, it can be seen that the hemoglobin levels of postpartum mothers after being given date palm juice in the intervention group at RSUD Akhmad Berahim, with a mean of 11.333 gr/dl, min value of 10.5 gr/dl and max value of 12.4 gr/dl

**Table 4**  
**Hemoglobin levels of postpartum mothers after being given date palm juice**  
**In the intervention group at RSUD Akhmad Berahim**

Hemoglobin	N	Mean	Median	Sd	Se	Min - Max
Post test	15	11,333	11,300	0,5080	0,1312	10,5 – 12,4 gr/dl

Hemoglobin levels of postpartum mothers on days 1 and 14 in the control group

**Table 5**  
**Hemoglobin levels of postpartum mothers on days 1 and 14 in the control group at RSUD Akhmad Berahim**

Hemoglobin	N	Mean	Median	Sd	Se	Min - Max
Day 1	15	10,473	10,600	0,6006	0,1551	9,3 – 11,5 gr/dl
Day 14	15	10,947	10,900	0,5194	0,1341	10,3 – 11,7 gr/dl

Based on table 5 above, it can be seen that the HB levels of postpartum mothers in the control group at RSUD Akhmad Berahim, day 1 with a mean of 10.473 gr/dl min value of 9.3 gr/dl and max 11.5 gr/d. Day 14 with a mean of 10.947 gr/dl, min value of 10.3 gr/dl and max value of 11.7 gr/dl. Analisa Bivariat

#### Analysis of hemoglobin levels on day 1 and day 14 in the intervention and control groups

**Table 6**  
**Results of intervention and control group analysis**

Group	Variabel	N	Mean	P mean	SD	SE	P-Value
Eksperimen	Pretest	15	10.400	0,9333	0,3885	0,1003	0,000
	Posttest	15	11.333				
Control	Pretest	15	10.473	0,3800	0,4161	0,1074	0,003
	Posttest	15	10.853				

Table 6 presents the results of paired t-tests performed in the intervention and control groups. The results obtained in the experimental group were the mean pretest of 10,400 and the posttest of 11,333, so that the difference in mean was 0.9333 (10,400 – 11,333) and P value = 0.000 (<0.05) this shows that there is an influence or effectiveness of giving date juice with an increase in hemoglobin levels in postpartum mothers at Akhmad Berahim Hospital in 2023. In the control group, the results obtained were the mean pretest of 10,473 and posttest 10,853, so that the mean difference was 0.3800 (10,473 – 10,853) and P value = 0.003 (<0.05) which means that there is an effect of giving fe tablets with an increase in hemoglobin levels but

not significant for postpartum mothers at Akhmad Berahim Hospital in 2023. So it can be concluded that H<sub>0</sub> is rejected and H<sub>a</sub> is accepted, which means that there is effectiveness between hemoglobin levels before and after date palm administration.

#### Comparative analysis of hemoglobin levels in the intervention group and the control group

Based on table 7 above, the sig value is obtained. (2-tailed) of 0.001, it can be concluded that there is a difference in average hemoglobin levels between the intervention group given date palm juice and the control group who consume Fe tablets

**Table 7**  
**Uji Independen Sampel Test**

		t	df	Sig. (2-tailed)	Mean	SE
Selisih Kadar Hb	Equal variances assumed	3.771	28	0.001	0.54667	0.14497
	Equal variances not assumed	3.771	27.731	0.001	0.54667	0.14497



Table 8  
Group Statistic

	Group	N	Mean	SD	SE
difference in Hb levels	Intervensi	15	0.9267	0.37696	0.09733
	Control	15	0.3800	0.41610	0.10744

From table 8 above, it can be seen that there are mean values in the intervention group of 0.9267 and 0.3800 in the control group with a standard revision of 0.37696 in the intervention group and 0.41610 in the control group and a standard error value of 0.09733 in the intervention group and 0.10744 in the control group. This value can be interpreted as the average intervention group is higher when compared to the average control group. From this exposure, it can be concluded that there is a significant difference in hemoglobin levels in the intervention group compared to the control group.

## DISCUSSION

### Univariate Analysis

Kadar Hemoglobin Ibu Nifas Sebelum Diberikan Sari Kurma Pada Kelompok Intervensi Di RSUD Akhmad Berahim Tahun 2023

Hemoglobin levels of postpartum mothers before being given date palm juice in the intervention group at RSUD Akhmad Berahim with a mean of 10,400 gr/dl, min value of 9.5 gr/dl and max value of 11.7 gr/dl.

In line with research conducted by Endang Yuliani, 2020 entitled "The Relationship of History of Anemia during Pregnancy with the Incidence of Postpartum Anemia in Postpartum Mothers" postpartum anemia is defined as Hb levels < 11 g / dl 1 week postpartum and Hb < 12 g / dl 8 weeks postpartum.

In line with Prawirohardjo's theory (2016). Anemia during the puerperium is a condition where a mother after giving birth up to about 6 weeks in a pale, weak and underpowered condition, at this time complications and problems can occur in postpartum mothers such as haemorrhagic postpartum, uterine atony, and others.

According to researchers, anemia is a condition where the mother's hemoglobin level is below normal. Low hemoglobin content can indicate anemia, with symptoms in the form of weakness, lack of appetite, lack of energy, decreased concentration, headaches, easily infected with disease, firefly eyes, besides eyelids, lips, and nails look pale. The most common causes of anemia during the puerperium are iron deficiency and postpartum blood loss.

Hemoglobin Levels Of Postpartum Mothers After Being Given Date Palm Juice In The Intervention Group At Akhmad Berahim Hospital In 2023

Hemoglobin levels of postpartum mothers after being given date palm juice in the intervention group at Akhmad Berahim Hospital with a mean of 11.333 gr/dl, min value of 10.5 gr/dl and max value of 12.4 gr/dl.

In line with research conducted by Setiowati (2018) entitled "The Influence of Palm Extract (Phoenix Dactylifera) To Increase of Hemoglobin Level To Trimester III Trimester III Pregnant Woman", the results are known that before and after date palm juice was given, respondents who experienced hemoglobin levels increased almost entirely (93.75%) and a small part (6.25%) of hemoglobin levels did not increase.

In line with Ma'ruf's theory (2016) that dates contain sugar substances (a mixture of glucose, sucrose, and fructose), protein, fat, fiber, vitamins A, B1, B2, B12, C, potassium, calcium, iron, chlorine, copper, magnesium, sulfur, phosphorus, and several enzymes that are complete enough nutrients so as to accelerate increasing hemoglobin levels and easily metabolized by the body.

In this study, hemoglobin levels were obtained after being given an intervention using date palm juice experienced an average increase per hemoglobin respondent with a score difference of 0.2-2 g / dl on 14 days of intervention. This is because the regularity of the mother when consuming date palm juice is the cause of the increase in hemoglobin of puerperal mothers. Date palm juice is rich in content, contains components that can increase iron absorption or play a role in the formation of red blood cells where hemoglobin is located. Iron content in dates as much as 1.5 mg is good to help raise levels 1,5 mg Hb, in addition to iron, other nutrients that can help increase Hb levels, namely Vitamin C as much as 6.1 mg (Safitri & Us, 2023). According to Abu-Ouf & Jan (2015) in the absorption of iron in the body, closely related to the acidic environment that helps iron absorption, which occurs in the first and second parts of the small intestine. Therefore iron absorption is enhanced by co-administration of acidic compounds, such as vitamin C or acrobic acid.

## Hemoglobin Levels Of Postpartum Mothers On Days 1 And 14 In The Control Group At Akhmad Berahim Hospital In 2023

Hemoglobin levels of postpartum mothers in the control group at RSUD Akhmad Berahim in 2023, day 1 with a mean of 10.473 gr/dl with a min value of 9.3 gr/dl and a max value of 11.5 gr/dl. Day 14 with a mean of 10.947 gr/dl with a min value of 10.3 gr/dl and a max value of 11.7 gr/dl.

This is in line with the research of Rizki et al., (2018) entitled "The Relationship of Fe Tablet Supplementation with Hemoglobin Levels in Third Trimester Pregnant Women at the Padang City Cold Water Health Center" the results showed a significant relationship between Fe tablet supplementation and hemoglobin levels in III trimester pregnant women ( $p < 0.05$ ). In line with Yuanti's theory, (2020) iron tablets

Fe) are tablets for supplementation of nutritional anemia management containing ferrosulfate 200 mg or equivalent to 60 mg elemental iron and 0.20 mg folic acid. Iron tablet preforat consists of three components, namely: Ferrous sulfas / ferrous sulfate (dry), iron content 30%, Ferrous fumarate, iron content 33% and provides fewer side effects, Ferrous gluconas, iron content is only slightly at 11.5% and consequently causes fewer gastrointestinal effects.

In the opinion of researchers, the increase in Hb in the control group was due to the flow of puerperal mothers in consuming Fe tablets, and the food consumed by mothers during the puerperium helped absorb iron, so that when done on the 14th day Hb mothers increased.

### Bivariate Analysis

Analysis of hemoglobin levels on day 1 and day 14 in the intervention and control groups

In this study, the hemoglobin levels of postpartum mothers before being given date palm juice in the intervention group at RSUD Akhmad Berahim with a mean of 10,400 gr/dl min value of 9.5 gr/dl and max value of 11.7 gr/dl, and in the control group on day 1 with a mean of 10,473 gr/dl with a min value of 9.3 gr/dl and a max value of 11.5 gr/dl. Increased hemoglobin levels of postpartum mothers after being given date palm juice in the intervention group at RSUD Akhmad Berahim with a mean of 11.333 gr/dl min value of 10.5 gr/dl and max value of 12.4 gr/dl, and in the control group day 14 with a mean of 10.947 gr/dl with a min value of 10.3 gr/dl and max value of 11.7 gr/dl.

Based on the results of data analysis from paired sample t tests in the intervention group with mean difference values of 0.9333 (10,400 – 11,333) and P value = 0.000 ( $<0.05$ ) and in the control group with mean difference values of 0.3800 (10,473 – 10,853) and P value = 0.003 ( $<0.05$ ) this shows that there is effectiveness of giving date palm juice with an increase in hemoglobin levels in postpartum mothers at Akhmad Berahim Hospital in 2023,

In line with the results of Setiowati's research (2018) entitled "The Influence Of Palm Extract (Phoenix Dactylifera) To Increase Of Hemoglobin Level To Trimester III Trimester Woman)" The test used is an alternative test Wilcoxon Test in getting p value (Exact. Sig/2 tailed) 0.002 ( $<0.05$ ) which means that there is a difference in hemoglobin levels before and after date palm juice. Therefore  $H_0$  is rejected and  $H_1$  is accepted which means there is an effect of date palm juice (Phoenix Dactylifera) on the increase in hemoglobin levels of III trimester pregnant women.

Based on another study conducted by Tandja (2020) entitled The effectiveness of date palm juice with an increase in hemoglobin levels in postpartum mothers at the UPT Kareng Bangkirai Health Center in Palangkaraya City. That on the effect of giving date juice with an increase in hemoglobin levels of postpartum mothers with a statistical test T-Test, with a p value of  $<0.05$  (0.000), it can be concluded that there is an effect of giving date juice with an increase in hemoglobin levels of puerperal mothers.

Then the results of the research literature presented by Rahmawati & Silviana (2019).with the title of the effect of date consumption on the increase in hemoglobin levels: A review concluded that from the seven research results that have been conducted, there is one journal that says that there is no effect of increasing hemoglobin levels that consume dates and date juice. While other journals say the influence of consuming dates and date juice can increase hemoglobin levels. The average result of hemoglobin before being given dates is mild anemia, but after being given date juice or dates the average hemoglobin increases.

The iron content in dates as much as 1.5 mg is good for helping to increase Hb levels, in addition to iron, other nutrients that can help increase Hb levels, namely Vitamin C by 6.1 mg (Safitri & Us, 2023). Regular consumption of dates with recommended doses or doses in sufficient time can increase hemoglobin levels, because the main ingredients needed for blood formation or hemoglobin are folic acid, vitamin B12, iron, cobalt,

magnesium, zinc, amino acids, vitamin C, vitamin B complex, and others (Rahmawati & Silviana, 2019).

Comparative analysis of hemoglobin levels in the intervention group and the control group

After a comparison test using an independent t test, the mean value in the intervention group was 0.9267 and 0.3800 in the control group with a standard deviation of 0.37696 in the intervention group and 0.41610 in the control group and a standard error value of 0.09733 in the intervention group and 0.10744 in the control group. This value can be interpreted as the average intervention group is higher when compared to the average control group. And in the t test, a sig value is obtained. (2 tailed) of 0.001. From this exposure, it can be concluded that there is a significant difference in hemoglobin levels in the intervention group compared to the control group.

In line with research conducted by Setiowati (2018) entitled "The Influence of Palm Extract (Phoenix Dactylifera) To Increase of Hemoglobin Level To Trimester III Trimester III Pregnant Woman", the results are known that before and after date palm juice was given, respondents who experienced hemoglobin levels increased almost entirely (93.75%) and a small part (6.25%) of hemoglobin levels did not increase.

In line with Ma'ruf's theory (2016) that dates contain sugar substances (a mixture of glucose, sucrose, and fructose), protein, fat, fiber, vitamins A, B1, B2, B12, C, potassium, calcium, iron, chlorine, copper, magnesium, sulfur, phosphorus, and several enzymes that are complete enough nutrients so as to accelerate increasing hemoglobin levels and easily metabolized by the body.

In this study, hemoglobin levels were obtained after being given an intervention using date palm juice experienced an average increase per hemoglobin respondent with a score difference of 0.2-2 g / dl on 14 days of intervention. This is because the regularity of the mother when consuming date palm juice is the cause of the increase in hemoglobin of puerperal mothers. Date palm juice is rich in content, contains components that can increase iron absorption or play a role in the formation of red blood cells where hemoglobin is located. The iron content in dates as much as 1.5 mg is good for helping to increase Hb levels, in addition to iron, other nutrients that can help increase Hb levels, namely Vitamin C by 6.1 mg (Safitri & Us, 2023).

According to Abu-Ouf & Jan (2015) in the absorption of iron in the body, closely related to the

acidic environment that helps iron absorption, which occurs in the first and second parts of the small intestine. Therefore iron absorption is enhanced by co-administration of acidic compounds, such as vitamin C or ascorbic acid.

## CONCLUSION

The results showed that the majority of fatigue experienced by mothers after childbirth was fatigue in the moderate category, caused by the new labor process and adaptation to the new role as parents. Husband support in the form of moral and material is considered to be quite good, with moral support having an important impact on the emotional condition of the mother. The motivation for breastfeeding in the first 24 hours postpartum is mostly in the moderate category, influenced by postpartum physical fatigue and husband support. There was a considerable correlation between fatigue and husband support and motivation to breastfeed in the first 24 hours, with significance values indicating a relationship between the two variables

## SUGGESTION

This study is expected to provide additional insights especially for postpartum mothers suffering from anemia, by suggesting the use of date palm juice as an alternative to increase hemoglobin levels. For midwives in hospitals, midwifery practices that educate about the importance of consuming foods rich in iron and vitamin C such as date palm juice are expected to be applied. Educational institutions are expected to use the results of this research as a reference to improve the quality of midwifery care. As for the next researcher, it is recommended to control the food intake of respondents and extend the intervention time to further evaluate the effectiveness of date palm juice

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## FACTORS THAT INFLUENCE PREGNANT WOMEN'S COMPLIANCE WITH LOCAL PMT BU GATENG

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### ABSTRAK: FAKTOR YANG BERPENGARUH TERHADAP KEPATUHAN IBU HAMIL PADA PMT LOKAL BU GATENG

Latar Belakang: Status gizi ibu hamil masih menjadi permasalahan yang dapat mempengaruhi terjadinya stunting. Pemerintah mengusulkan solusi seperti memperbanyak penggunaan bahan-bahan lokal. Bu Gateng merupakan tradisi Aceh yang merayakan bulan ketujuh kehamilan.

Tujuan: Menganalisis faktor yang berpengaruh terhadap kepatuhan ibu hamil pada Pemberian Makanan Tambahan lokal Bu Gateng.

Metode: Metode kuantitatif dengan desain cross sectional. Populasi seluruh ibu hamil yang menjalani ANC di Puskesmas Pusangan Sibla Krueng. Sampel penelitian terdiri dari 60 orang. Teknik pengambilan sampelnya adalah sampel acak sederhana. Sumber data primer dan sekunder. Analisis bivariat menggunakan uji chi-square.

Hasil: Hasil analisis bivariat variabel sikap nilai p 0,000 dan dukungan keluarga nilai p 0,000 bermakna faktor sikap dan dukungan keluarga berpengaruh terhadap kepatuhan ibu hamil pada PMT lokal Bu Gateng.

Kesimpulan: Sikap ibu dan dukungan keluarga adalah faktor yang mempengaruhi kepatuhan ibu hamil pada PMT lokal Bu Gateng.

Saran: Memberikan dukungan kepada ibu hamil untuk mengkonsumsi PMT lokal Bu Gateng agar nutrisi janin dan ibu terpenuhi selama masa kehamilan.

Kata Kunci : Bu Gateng, Ibu Hamil, Kepatuhan, PMT Lokal

### ABSTRACT

Background: Nutritional status Mother pregnant Still become possible problems influence the occurrence of stunting. Government propose solution like multiply use ingredients local. Mrs. Gateng is Acehnese tradition of celebrating month seventh pregnancy.

Purpose: Analyze influencing factors to obedience Mother pregnant on giving food addition local Bu Gateng.

Methods: Quantitative method with cross-sectional design. Population all over Mother pregnant women undergoing ANC at the Community Health Center Pusangan Sibla Krueng. Research sample consists of 60 people. Retrieval technique the sample is sample random simple. Primary and secondary data sources. Analysis bivariate using the chi-square test.

Results: Analysis results bivariate variable attitude p value 0.000 and support family p value 0.000 is significant factor attitude and support family influential to obedience Mother pregnant at the local PMT Bu Gateng.

Conclusion: mother and support family is factor affecting obedience Mother pregnant at the local PMT, Mrs. Gateng.

Suggestions: Give support to Mother pregnant For consume Local PMT Mrs. Gateng for nutrition fetus and mother fulfilled during pregnancy.

Kata Kunci : Bu Gateng, Pregnant Women, Compliance , Local PMT

### INTRODUCTION

Nutrition is very important in role in the human life cycle. In a woman's life cycle there is a series to give birth to generations of humans into the world. One of a woman's life cycles is pregnancy (Apriana et al., 2021; Fitriani et al., 2023; Lestari et al., 2022).

Pregnant women have a big responsibility to be able to give birth to a quality generation (Fitriani et al., 2020; Friscila et al., 2022; Sumiati, 2018). Pregnant women are the group most vulnerable to malnutrition during pregnancy, and stunting is still a major nutritional problem in Indonesia (Kemenkes RI,

2018). Stunting is the condition of the child/toddler's height being shorter than that of children/toddlers of the same age. Chronic nutritional problems in early childhood are caused by lack of nutritional intake for a very long period of time due to ignorance of parents and family (Fitriani et al., 2020; Wahyuni, Rosyita, et al., 2023).

The nutritional status of pregnant women is still a problem that can influence the occurrence of stunting. One of them is by increasing the use of local food as nutritional supplementation for pregnant women through nutrition education, namely activities that increase knowledge and educate pregnant women's ability to consume nutritious food according to their needs, which is a combination of activities. (Kementerian Kesehatan RI, 2021).

Intervention in cases stunting that has been implemented by the Indonesian government are divided into two categories that is category specific nutritional interventions and categories sensitive nutrition interventions. Specific nutritional interventions target children in their first 1,000 days of age life (HPK) which has contribute to reducing stunting by up to of 30% (R. P. P. Sari & Montessori, 2021). In 2018, the Indonesian government through the Ministry of Health of the Republic of Indonesia carried out nutritional education activities providing additional food (PMT) to pregnant women and babies / toddlers , with the aim of gaining a common understanding regarding how to carry out related activities. (Kemenkes RI, 2018).

Regulations The Regent of Bireuen Regency in Aceh Province has issued regulation no. 30 of 2020 concerning the role of gampongs (villages) in reducing stunting, which includes PMT Bu Gateng, namely providing additional food in the context of reducing stunting and improving the health of mothers and children (Perbup Bireuen, 2020). Bu Gateng is an Acehese tradition that celebrates the seventh month of pregnancy. Bougaten is a bag of rice, chicken, bananas, vegetables and eggs given to pregnant women. The aim of this activity is to ensure that mothers and babies receive adequate nutrition in the womb and prevent stunting from an early age (Ayi, 2021; Lestari et al., 2022). Some mothers

deliver packages ma'am gateng in the form rice for existing families pregnant women as part of a remedial program or improving family nutrition, which is given to breastfeeding mothers and those with toddlers in the Alue Village area (Idris, 2020). Factors that influence individual compliance include beliefs held, access to health services, individual attitudes, staff support, and health facilities (Gagu, 2018).

Urgency in study This that is Regional Government has set supporting regulations reducing stunting with consume Bu Gateng's local PMT during pregnancy. But in society up to moment This Still There is children who experience stunting. Based on the study above in the local PMT program which is linked to the Bu Gateng program, the researcher is very interested in researching with the aim of analyzed the factors that influence the compliance of pregnant women with the local PMT Bu Gateng in the Peusangan Community Health Center Work Area Good luck Krueng.

Research purposes For Analyze influencing factors to obedience Mother pregnant on Giving Food Addition local Mrs. Gateng. The novelty of this study is to look for a relationship between maternal obedience and family support, with the provision of local PMT Bu Gateng. The mother's adherence in giving extra food to children is very important to ensure that children get adequate nutrition for their growth and development. Family support in providing supplementary food is essential for children's growth and development, especially at critical times such as infancy and toddlerhood.

## RESEARCH METHODS

This type of research is quantitative research that uses an analytical observational design with a cross sectional research design. This research was conducted in the work area of Pusangan Sibla Krueng Community Health Center. The study population was all pregnant women who came to the ANC Peusangan Siblah Krueng Health Center, totaling 70 patients. The research sample was determined using the Slovin formula calculation as follows:

$$n = \frac{N}{1 + Ne^2} = \frac{70}{1 + 70 (0,05^2)} = \frac{70}{1,175} = 59,57 = 60$$

The sample studied was 60 people. Random sampling technique simple random sampling , namely sampling was carried out randomly. This method is used because the population, namely pregnant women, is assumed to be homogeneous.

Data collection will be carried out face-to-face (offline) by implementing strict health protocols.

Data collection methods are based on primary and secondary data. Primary data is a modification of Nivalayanti Gagu's 2018 research entitled "Factors that Influence Compliance with Biscuit Consumption

as a Complementary Food for Pregnant Women in Parepare City, South Sulawesi" (Gagu, 2018) was collected and determined using a survey instrument. Meanwhile secondary data obtained from register book and KIA book. Next, the data was processed and then analyzed using univariate analysis using descriptive, bivariate analysis using the Chi Square test.

## RESEARCH RESULTS

### Analysis Results Univariate

Based on Table 1 above, the distribution results show that the majority of mothers' attitudes are in the positive category at 65% and family support is the highest at 70%. Meanwhile, the level of compliance of mothers who took part in the local PMT Bu Gateng was 71.7% in the compliance category.

**Table 1**  
**Distribution frequency based on factor attitude and support family**

Factor	n	%
Mother's attitude		
Positive	39	65
Negative	21	35
Family support		
Support	42	70
Does not support	18	30
Mother's Compliance Level		
Obedient	43	71.7
Not obey	17	28.3

### Analysis Results Bivariate

Based on Table 2 above, it is known that obedient pregnant women are more likely to be found among respondents who have a positive attitude (63.3%) than respondents who have a negative attitude (8.3%). Based on the results of statistical analysis which shows a value of  $p = 0.000$ , it can be concluded that there is an influence between attitudes towards compliance of pregnant women with the local PMT Bu Gateng

**Table 2**  
**The influence of attitudes on pregnant women's compliance with the local PMT Bu Gateng**

Attitude	Mother's Obedience						P values
	Obedient		Not obey		Amount		
	n	%	n	%	n	%	
Positive	38	63.3	1	1.7	39	65.0	0,000
Negative	5	8.3	16	26.7	21	35.0	

**Table 3**  
**The influence of family support on pregnant women's compliance with the local PMT Bu Gateng**

Family support	Mother's Obedience						P values
	Obedient		Not obey		Amount		
	n	%	n	%	n	%	
Support	36	60	4	6,7	40	66,7	0,000
Does not support	6	10	14	23,3	20	33,3	

Based on Table 3 above, it was found that pregnant women who were compliant received more family support by 60%, while pregnant women who were not compliant received more family support by 23.3%. Based on the results of statistical analysis which shows a value of  $p = 0.000$ , it can be concluded that there is an influence between family support on the compliance of pregnant women with the local PMT Bu Gateng

## DISCUSSIONS

The government is trying to overcome the problem of stunting in children/toddlers by implementing several programs to reduce the risk of

stunting. One of the initiatives is providing nutritious food to pregnant women together with the local PMT Bu Gateng in the province of Bireuen (Perbup Bireuen, 2020).

Local food This have mark nutrition, content nutrition and abilities good processing, so bring mark positive for assumption nutrition in the process of improving nutritional status. Apart from that, the price is relative cheap and easy obtained is one of points most importantly in use ingredients local in a way wise, no use material preservative, and very safe (Sofais et al., 2019).

Nutritional status influenced by two causes that is reason direct and causal No direct. Reason



straight away is intake food and infection. By No direct influenced by support family , factors economy , knowledge and education (Pomalingo et al., 2018).

### Attitude of Pregnant Women

Based on the results of statistical tests in this study, the value of  $p = 0.000$ , which means that there is an influence between attitudes towards compliance of pregnant women with the local PMT Bu Gateng.

Attitude is an internal/subjective evaluation that occurs within a person and cannot be observed directly, but will be visible when attitudes are translated into behavior. Therefore, attitudes can be divided into positive attitudes and negative attitudes (Allo & Sampeangin, 2017; Apriana et al., 2021; Friscila, Wijaksono, et al., 2023). When someone likes something, their attitude is more positive and approachable, but when someone doesn't like something, their attitude becomes more negative or negative (Friscila, Hasanah, et al., 2023; Munthe, 2022; F. A. Sari & Putri, 2020).

Attitude is also a series of consistent reactions or responses where a person is still closed-minded towards a stimulus or object (Fitriani et al., 2022; Wahyuni, Fitriani, et al., 2023). Compliance is a decision made by the patient after considering the perceived risks. Compliance is understood as the level of accuracy of a person's behavior towards medical advice, including explaining to take medication according to prescription instructions and taking it at the right time. Knowledge plays an important role in determining respondents' attitudes and behavior towards consuming biscuits during pregnancy (Nainggolan et al., 2024; Puspitasari et al., 2021; N. A. M. E. Sari et al., 2021).

Some factor considered when choose type product. The product is famous , it tastes good tasty , popular and accepted regularly general , practical , age keep it relatively old, easy used , etc. Other necessary aspects observed is content nutrition product (Chandradewi, 2018).

This research is supported by Vonny (2023) who found a relationship between the attitudes and behavior of KEK pregnant women when undergoing PMT (Vonny, 2023). This research is not in line with research proposed by Gilang Purnamasari (2016). Fifty -three respondents stated that there was no significant relationship between respondents' attitudes and adherence to iron tablets with a value of  $p = 0.219$  (Purnamasari et al., 2016).

Assumption researcher that Mother pregnant who behaves positive regarding the local PMT Mrs. Gateng is realization reception Mother pregnant to government programs. This matter give description

For continuation of the program until stunting problem resolved since pregnancy until age child more from 2 years.

### Family support

Based on the results of statistical tests for the variable "family support" the value of  $p = 0.000$  was determined. From this it can be concluded that there is an influence between family support on pregnant women's compliance with the local PMT Bu Gateng.

Family support can facilitate behavioral education of pregnant women to prevent CED. Family support can take the form of material support, information support and emotional support so that pregnant women are always aware of their pregnancy and motivated to maintain their health during pregnancy. Family support refers to the attitudes, behavior, and acceptance of the family. Family support is an empowering factor in shaping health behavior. Family support is very important for adaptation to pregnancy, which influences the nutritional status of pregnant women during pregnancy. Family support has a positive effect on maternal motivation.

Study This supported by Syafitri in 2023 discovered connection between support family with behavior Mother in prevent SEZ. The chi-square value is 69.056 and the p-value is 0.000 (Syafitri et al., 2023).

Assumption researcher that family can give encouragement For formation behavior Mother in guard health himself especially prevent from nutritional status less can resulting in stunting. Support family refers to attitudes , behavior , and acceptance family. Indicator most importantly role family is support material to action Mother pregnant in prevention of CED.

### CONCLUSION

The influencing factor of pregnant women's compliance with the local PMT Bu Gateng is the mother's attitude and family support. It is recommended that families always provide support to pregnant women to form an appropriate independent attitude in meeting nutritional needs by utilizing local ingredients such as local PMT Bu Gateng.

### SUGGESTIONS

Give support to Mother pregnant For consume Local PMT Mrs. Gateng for nutrition fetus and mother fulfilled during pregnancy.

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## IDENTIFICATION OF IRON CONTENT IN RED GUAVA JUICE AS A TREATMENT OF ANEMIA IN PREGNANT WOMEN

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### ABSTRAK; IDENTIFIKASI KANDUNGAN ZAT BESI PADA JUS JAMBU BIJI MERAH SEBAGAI PENANGANAN ANEMIA PADA IBU HAMIL

Latar belakang: Anemia merupakan kondisi ibu hamil dengan kadar hemoglobin (Hb) dalam darah kurang dari 11 g/dl. Presentase anemia pada ibu hamil di NTB tahun 2022 diestimasikan sebesar 1,481 di Kabupaten Lombok Barat, 1,248 di Kabupaten Lombok Timur, 1,129 di Kota Mataram, 1,034 Tingginya angka anemia disebabkan oleh rendahnya pengetahuan dan kesadaran akan bahaya anemia. Pencegahan dan pengendalian anemia gizi besi melalui pendekatan nonfarmakologis dengan memperbaiki pola makan dan mengonsumsi makanan kaya zat besi dan zat gizi seperti jambu biji merah yang diolah menjadi jus jambu yang mengandung Fe yang membantu meningkatkan penyerapan zat besi dalam tubuh dan membantu meningkatkan kadar Hb.

Tujuan: Tujuan penelitian ini untuk mengidentifikasi kandungan zat besi pada jus jambu biji merah sebagai penanganan anemia ibu hamil.

Metode: Pembuatan dan identifikasi zat besi pada jus jambu dilakukan dengan 2 tahapan. Pembuatan pertama, daun pembuatan jus jambu biji dengan di blender dan di saring. Tahap kedua Identifikasi zat besi dengan pembuatan larutan induk Fe dengan di encerkan larutan satandar Fe 1000mg/L sebanyak 10 ml kedalam labu ukur dengan menggunakan metode KSCN 2M.

Hasil: Berdasarkan hasil penelitian, dalam 100 ml jus jambu merah mengandung Fe yang di tandai dengan terbentuknya larutan warna merah dengan kadar fe 0,25%. Sehingga jus jambu merah bisa dikonsumsi ibu hamil anemia sebagai salah satu penangan anemia.

Kesimpulan: Dalam 100 grm Jus jambu merah yang dibuat dengan cara diblender terdapat kandungan zat besi yang berperan dalam meningkatkan kadar Hb ibu hamil anemia. Oleh karena itu, disarankan bagi ibu hamil untuk tetap mengonsumsi jus jambu merah untuk meningkatkan kadar hemoglobin ibu hamil yang mengalami anemia.

Kata Kunci: Anemia, ibu hamil, Jambu biji merah.

### ABSTRACT

Background: Anemia is a condition of pregnant women with hemoglobin (Hb) levels in the blood less than 11 g / dl. The percentage of anemia in pregnant women in NTB in 2022 is estimated at 1,481 in West Lombok Regency, 1,248 in East Lombok Regency, 1,129 in Mataram City, 1,034 The high rate of anemia is caused by low knowledge and awareness of the dangers of anemia. Prevention and control of iron nutrition anemia through a nonpharmacological approach by improving diet and eating food.

Objective: The purpose of this study was to identify the iron content in red guava juice as a treatment of anemia for pregnant women.

Method: The manufacture and identification of iron in guava juice is carried out in 2 stages. The first manufacture, leaves make guava juice with in a blender and filtered. The second stage is identification of iron by making Fe mother solution by diluting 1000mg/L Fe satandar solution as much as 10 ml into a measuring flask using the KSCN 2M method.

Results: Based on the results of the study, in 100 ml of red guava juice contains Fe which is characterized by the formation of a red color solution with a fe content of 0.25%. So that red guava juice can be consumed by anemic pregnant women as one of the treatments for anemia

Conclusion: In 100 grams of red guava juice made by blending there is iron content which plays a role in increasing Hb levels of anemic pregnant women. Therefore, it is recommended for pregnant women to keep consuming red guava juice to increase hemoglobin levels of pregnant women who have anemia.

Keywords: Anemia, pregnant women, Red guava.

## INTRODUCTION

World Health Organization (WHO, 2019). The Maternal Mortality Rate (MMR) in the world is 303,000 people. The maternal mortality rate (MMR) in ASEAN is 235 per 100,000 live births. Based on the Indonesian Health Demographic (SDKI, 2017), The maternal mortality rate (MMR) in Indonesia is still quite high, namely, 305/100,000 live births. The Maternal Mortality Rate (MMR) is still quite high when compared to neighboring countries. The number of maternal death cases in NTB Province during 2021 was 144 cases, an increase compared to 2020 with 122 maternal (*Profil dinas kesehatan provinsi NTB*, 2022)

According to data from Basic Health Research (Riskesdes, 2018), that there are 48.9% of pregnant women who have anemia. In Indonesia, it is estimated that every day there are 41 cases of anemia, and 20 women die from the condition. This high number is due to the low knowledge and awareness of the dangers of anemia in pregnancy tends to appear in the 1st and III trimester of pregnancy (Astriningrum, 2017). The causes of maternal death in Indonesia are caused by other causes by 34.2%, bleeding by 28.7%, hypertension in pregnancy by 23.9%, and infection by 4.6% (Kementrian RI, 2020)

Anemia is a condition of pregnant women with hemoglobin (Hb) levels in the blood less than 11 g / d. (Manuaba, 2010). Anemia is one of the conditions for malnutrition and poor health associated with maternal and infant morbidity and mortality including the risk of miscarriage, prematurity, low birth weight babies, anemia in pregnant women increases the frequency of complications in pregnancy and childbirth. (Andewa, 2020)

Prevention and control of iron nutrition anemia not only through pharmacological approaches by supplementing Fe tablets, but also through nonpharmacological approaches by improving diet and eating iron-rich foods. Iron is important in hemoglobin synthesis and red blood cell maturation so as to prevent anemia (Bah et al., 2020). according to (Mirwanti et al., 2018). Hemoglobin levels will increase in line with adequate iron intake so that the number of anemia will decrease. Vitamins and minerals sourced from fruits and vegetables which also have antioxidant compounds that are important for the body. Foods that have the potential to prevent and control iron nutrition anemia include red guava, red guava fruit contains iron, vitamin A, calcium, and meta substances (Laili Perdani, 2019)). Red guava is useful as an antianemia, antioxidant, anti-

inflammatory, maintain the cardiovascular system and digestive tract (Yurista, 2015)).

The mineral content in red guava can overcome people with anemia (lack of red blood) because red guava contains minerals that can facilitate the process of forming red blood cell (Gening, 2018). Anemia is mostly caused by iron deficiency factors characterized by low hemoglobin levels. Iron absorption is greatly influenced by the presence of vitamin C in the body. Vitamin C can help reduce ferric iron (Fe<sup>3+</sup>) to ferrous (Fe<sup>2+</sup>) in the small intestine so that it is easily absorbed by the body, the reduction process will be greater if the pH in the stomach is increasingly acidic (Jambu et al., 2023). Vitamin C can increase the pH in the stomach so that it can increase the process of iron absorption up to 30%. (Marlina Hutasuht, 2022)

Penelitian (Mellisa et al., 2021 ) Stated that after being given guava juice as much as 100 grams per day which is processed in the form of juice, and consumed 2 times a day in the morning and evening for 14 consecutive days to increase Hb levels in anemic pregnant women, experienced an increase in Hb levels in pregnant women.

The purpose of this study was to identify the iron content in red guava juice as a treatment of anemia of pregnant women.

## RESEARCH METHODS

Making red guava juice and identifying the iron content of red guava juice is done by blending The first manufacture, by weighing red guava with the type of analytical balance (Ohaus P224). Then in a blender for 5 minutes and measured using a measuring cup then put into a glass glass / bottle and then divided into 2 parts to be submitted to the Food Technology Laboratory of Mataram University. The manufacture of red guava juice was carried out at the Islamic Housing Pondok Asri Block C Number 3, Bajur Village, Labuapi District, West Lombok Regency, West Nusa Tenggara Province, while phytochemical screening was carried out at the Food Technology Laboratory of Mataram University.

The ingredients for making red guava juice are 100 cc cold water, 100 grams of boiled red guava, and a juicer. Red guava fruit is obtained from the Bajur Garden Environment, Bajur Village, Labuapi District, West Lombok Regency. Tools used for making red guava juice are food scales, food filters, glass glasses/bottles, funnels, knives, blenders. Red guava juice is made by: a) Choose a ripe yellow guava fruit, then the guava is washed thoroughly, b) the guava is weighed first, then cut into several parts, c) put it in the juicer blended for less than 2 minutes, d) put water as much as 100 cc then in the blender.

d) After that it is filtered to separate the juice from the seeds then the guava juice is put in a glass glass / bottle and divided into 2 parts.

Materials for iron identification are red guava juice, Aquadest HCl 37%, HNO<sub>3</sub> 0.05M, HCl 4M, KSCN 2M. The initial stage in making a standard Fe curve is to make a 100 mg / L Fe mother solution by diluting a standard Fe 1000 mg / L solution as much as 10 ml into a 100 mL measuring flask, then adding a diluent solution HNO<sub>3</sub> 0.05 M to the tera limit and then the solution is homogenized. Fe mother solution 100 mg/L is pipettes as much as 0.2; 0.5; 1; 1.5; 2; 2.5; 3; 4; 6; and 10 mL and added diluent solution to tera limit to create a series of Fe solutions with a concentration of 0.2; 0.5; 1; 1.5; 2; 2.5; 3; 4; 6; and

10 mg/L. The next step is to determine the maximum wavelength by using 5 mL of standard Fe 10 mg/L solution pipettes into a test tube then added 2 mL of 4M HCl then added back 5 mL of 2M KSCN solution homecleaned and allowed to stand for 15 minutes until the reaction conditions stabilized before measuring the absorbance at wavelengths of 400-600 nm (Asmorowati, 2020)

## RESULTS AND DISCUSSION

Manufacture Iron checking in red guava juice. The first preparation was done on red guava juice by blended (Figure 1) and iron checking on red guava juice seen in tables 1 and 2.



Figure 1. Guava juice manufacturing process

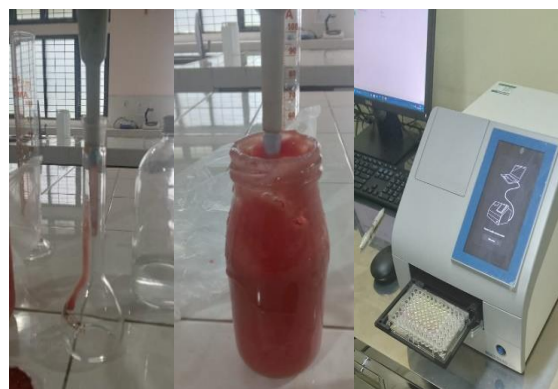


Figure 2. Iron content scraping process

Tabel 1  
Results of Identification of Iron Content in 100 ml of Red Guava Juice

Material	Logam	Reaktor	Observations	Conclusion %
Red Guava Juice	Fe	KSCN	The formation of a solution of red color	+ 0,25

Table 1. Based on the table above shows red guava juice contains iron + 0.25%.

## DISCUSSIONS

Based on the results of checks carried out on red guava fruit which is processed into juice it turns out to contain Fe using the KSCN method with the observation that the color formed is a red solution and a positive result (+) which is 0.25%.

Hemoglobin is a protein rich in iron. Iron is needed for hemoglobin production and also plays a role in the synthesis of hemoglobin in red blood cells and myoglobin in muscle cells. Iron is needed by the mother and fetus as a reserve for blood loss during pregnancy. (Holmes D & Phillip N.B, 2017)

According to (Ruri Yuni Astari et al., 2019) In order for iron absorption to be maximized, it is

recommended to take iron tablets between meals and use fruits that contain vitamin C because it can help the absorption process (Andewa, 2020). Giving Fe tablets with the addition of vitamin C can help increase hemoglobin levels in pregnant women. Iron (Fe) is an essential micronutrient needed by the body in the formation of hemoglobin (Astriningrum, 2017) Iron is important in hemoglobin synthesis and maturation of red blood cells so that it can (Auliana, 2016).

Red guava (*Psidium guajava* L.) Is a fruit that is many and easy to find in the market and grown alone in the yard because the price is cheap, red guava has a superior content than other fruits

(Anggeriani & Yatiliu, 2020). Red guava fruit contains fiber as well as important antioxidant capacity such as polyphenols, carotene and vitamin C (Mellisa et al., 2021). Red guava fruit is high in vitamin C, with a higher vitamin C content than papaya and 2 times more than citrus fruits. Red guava fruit also contains iron, vitamin A, calcium, and secondary metabolites such as anthocyanins, quercetin, carotenoids, polyphenols, flavonoids, lycopene, saponins, catechins, guajaverin, and guavin (Mellisa et al., 2021). Red guava is useful as an antianemia, antioxidant, anti-inflammatory, maintain the cardiovascular system and digestive tract (Utami & Farida, 2022)

In line with research conducted by (Octa et al., 2022) It is known that the iron content in red guava per 100 g based on the Indonesian Food Composition Table in 2017 is 1.1 mg (Kemenkes RI, 2018). Known iron content in red guava in per 100 g is 0.26 mg (Syamsuryanita & Ikawati, 2022), in red guava there are 42.9 mg / 100 g of vitamin C, Tools and Materials used: Tools used are in the form of glass tools and burettes. (Ruri Yuni Astari et al., 2019). While the ingredients used are ascorbic acid, glacial acetic acid, metaphosphoric acid, oxalic acid 0.4% w/v, iron (II) sulfate 2 N, red guava fruit, sodium hydroxide, Na-2,6 dichlorophenol indophenol (DCIP) and copper (II) sulfate 5% w/v. Sample solution preparation Guava fruit samples are cleaned, then weighed as much as 20 grams, cut into small pieces and then blended and diluted with 50 ml of oxalic acid then filtered into a glass funnel using filter paper. Each pipette of 2 ml of solution obtained into the test tube (Tubes I, II, and III, the antioxidant activity of guava fruit of 17.12 ppm is very strong. The results of Yulia's research explained that fruit in the form of juice is quickly absorbed by the digestive system within 20 minutes, while fruit in non-juice form takes about 18 hours (Mei Winarni et al., 2020)

According to research (Syamsuryanita & Ikawati, 2022) Regarding red guava (*psidium guajava*) on hemoglobin levels of pregnant women, in 15 respondents of pregnant women anemia III trimester. (Febriyanti et al., 2022). Stated that after being given herbal seed juice as much as 150 mg which was processed in the form of juice with the addition of cold boiled water 100 ml and 1 spoon of granulated sugar and packaged in plastic cup containers as much as 250 cc and distributed to the treatment group for routine consumption for 14 days experienced an increase in hemoglobin levels with average values before and after 8.4 g / dl to 11.5 g / dl.

Results of research conducted, (Mustika & Octaviani Iqmy, 2021). Guava can overcome anemia

because in the red guava fruit contains macro and micronutrients, one of the micronutrients is vitamin C which can facilitate the process of forming red blood cell hemoglobin. One substance that greatly helps the absorption of iron is vitamin C (ascorbic acid). The acid will reduce ferric ions to ferrous and inhibit the formation of Fe complexes with insoluble food. Vitamin C can increase the absorption of non-heme iron by four times (Anggeriani & Yatiliu, 2020).

According to the researchers' assumptions, the consumption of Fe tablets, a combination of red guava given in the form of juice is very helpful in the absorption process because the absorption is faster than the consumption of Fe singly in addition to the Fe content in red guava juice, the content of vitamin C can also help the absorption of iron which is greatly influenced by the availability of vitamin C in the mother's body (Mayasari et al., 2023). The role of vitamin C can help reduce iron ( $\text{Fe}^{3+}$ ) to ( $\text{Fe}^{2+}$ ) in the small intestine so that it is easily absorbed, the reduction process will be greater if the pH in the stomach is more acidic. Vitamin C can add similarity so that it can help increase iron absorption by up to 30% (Ditamy, 2019; Octa et al., 2022).

This research is in line with (Dewi retno fandy et al., 2023), Regarding the effectiveness of Fe tablets and accompanied by guava juice on hemoglobin levels of pregnant women in 15 anemic pregnant women III trimester at Pratama Rahma Clinic. Stating that after being given red guava juice as much as 100 grams which is processed in the form of juice with the addition of cold boiled water 100 cc and packaged in glass glasses / bottles and, distributed to the treatment group for routine consumption 2 times in the morning and evening, Pregnant women who regularly consume red guava juice experience an increase in hemoglobin levels with the average distribution of changes in hemoglobin levels before and after in the Fe Tablet and Guava Juice groups, namely before the intervention (10.04 mg / dL) and after the intervention to (10.48 mg / dL).

## **CONCLUSIONS**

Based on the results of the study, Identification of Fe in red guava juice samples for the treatment of anemia in pregnant women, it was obtained that red guava juice samples contain Fe, which is 0.25%.

## **SUGGESTION**

It is recommended for the public, especially pregnant women, to prefer to consume 100 mg of red

guava juice which is consumed regularly 2 times in the morning and evening for 14 consecutive days as an alternative choice in increasing hemoglobin levels during pregnancy.

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**MOTHER'S KNOWLEDGE OF THE USE OF MURROTAL AL QUR'AN THERAPY AS AN EFFORT TO IMPROVE THE QUALITY OF CHILDREN'S SLEEP**

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**ABSTRAK : PENGETAHUAN IBU TERHADAP PENGGUNAAN TERAPI MURROTAL AL QUR'AN SEBAGAI UPAYA MENINGKATKAN KUALITAS TIDUR ANAK**

Latar Belakang : Penelitian mengenai gangguan tidur telah banyak dilakukandi Indonesia. Sekitar 44% anak-anak menderita masalah tidur. Namun, sebagian besar atau lebih dari 72% orang tua tidak percaya bahwa masalah tidur bayinya adalah sebuah masalah. Berdasarkan hasil survei gangguan tidur pada anak usia di bawah 3 tahun yang dilakukan di lima kota: Jakarta, Bandung, Medan, Palembang, dan Batam, 51,3% anak menderita gangguan tidur, dimana 42% diantaranya menderita gangguan tidur. Itulah yang saya temukan. Pasien tidur kurang dari 12 jam per hari, terbangun minimal 3 kali sehari, dan terbangun di malam hari lebih dari 1 jam. Untuk mengatasi gangguan tidur pada bayi dapat menggunakan cara farmakologi dan non farmakologi. Secara farmakologi melalui penggunaan obat-obatan, secara non farmakologi kita tidak mengkonsumsi obat-obatan, melainkan terapi musik yang merupakan salah satu terapi musik Al-Quran, pendekatan ini sangat mendalam.

Tujuan : Penelitian ini bertujuan untuk mengetahui pengetahuan ibu terhadap penggunaan Murotar al-Quran dalam upaya meningkatkan kualitas tidur anak.

Metode: Penelitian ini merupakan penelitian non-eksperimental dengan desain penelitian deskriptif. Sampel penelitian ini adalah ibu-ibu yang mempunyai anak dibawah usia 5 tahun antara usia 1 sampai dengan 5 tahun.

Hasil: Hasil penelitian menunjukkan bahwa sebagian ibu mempunyai pengetahuan yang baik terhadap penggunaan Murotar Al Quran untuk meningkatkan kualitas tidur anak. Ibu yang berpengetahuan baik dalam penggunaan Murrotal Al Qu'an sebesar 78,4%.

Kesimpulan dan saran : Terapi Murottal Al-Quran menunjukkan bahwa terapi ini menurunkan hormon stres, mengaktifkan hormon alami *Endorphin*, memperbaiki sistem kimia tubuh dan mempengaruhi aktivitas gelombang otak, serta mengurangi rasa cemas. Diharapkan untuk ibu-ibu yang memiliki anak usia balita dapat menerapkan penggunaan Murottal Al Qur'an sebagai terapi non farmakologi dalam meningkatkan kualitas tidur.

Kata Kunci : Pengetahuan, Terapi Murrotal Al Quran, Kualitas Tidur

**ABSTRACT**

Background research on sleep disorders has been widely carried out in Indonesia. About 44% of children suffer from sleep problems. However, most or more than 72% of parents do not believe that their baby's sleep problems are a problem. Based on the results of a survey on sleep disorders in children under 3 years of age conducted in five cities: Jakarta, Bandung, Medan, Palembang and Batam, 51.3% of children suffered from sleep disorders, of which 42% suffered from sleep disorders. That's what I found. The patient sleeps less than 12 hours per day, wakes up at least 3 times a day, and wakes up more than 1 hour at night. To overcome sleep disorders in babies, you can use pharmacological and non-pharmacological methods. Pharmacologically through the use of drugs, non-pharmacologically we do not consume drugs, but music therapy which is one of the Al-Quran music therapies, this approach is very in-depth.

This study aims to determine mothers' knowledge about the use of Murotar al-Quran in an effort to improve children's sleep quality.

Research Method :This research is non-experimental research with a descriptive research design. The sample for this study was mothers who had children under the age of 5 between the ages of 1 and 5 years.

Result: The results of the study showed that some mothers had good knowledge about using Murotar Al Quran to improve the quality of their children's sleep. Mothers who have good knowledge in using Murrotal Al Qu'an is 78.4%.

Conclusions and Suggestions: Murottal Al-Quran therapy shows that this therapy reduces stress hormones, activates the natural hormone *Endorphin*, improves the body's chemical system and influences brain wave activity,

and reduces feelings of anxiety. It is hoped that mothers who have children under five can apply the use of Murootal Al Qur'an as a non-pharmacological therapy to improve sleep quality.

Keywords : Knowledge, Murrotal Al Quran Therapy, Sleep Quality

## INTRODUCTION

Growth is a change that occurs in every human being, especially related to their physical appearance. (Fatmawati, 2023) The quality of a child can be determined through the growth and development process which is an interaction between genetic and environmental factors. Growth in physical size will be accompanied by an increase in the child's developmental abilities. (Soetjningsih, 2012) Genetic or hereditary factors are factors related to the father's and mother's genes, while environmental factors include the biological, physical, psychological and social environment. (Dewi, R.C., Oktiawati, A., & Saputri, 2015) Growth and development occurs rapidly in the early years, namely from the age of 0 months to the age of 5 years. This stage is also often referred to as the "Golden Age" stage. (Mansur, 2019) Golden Age is a stage where it is very important to pay close attention to children's growth and development so that abnormalities can be detected as early as possible. (Marmi, 2015) The growth process in children is influenced by various factors, including preconception, prenatal, natal and postnatal factors. One of the postnatal factors is hormonal disorders. (Selina et al., 2021) Hormonal disorders can be caused by sleep disorders which can interfere with the synthesis and function of growth hormone. This sleep activity is regulated and controlled by two systems in the brain stem, namely the Reticular Activating System (RAS) and the Bulbar Synchronizing Region (BSR). (Widhiyanti et al., 2017)

Sleep is part of the healing, recovery, and physiological process and alternates with long periods of wakefulness. Half of a child's sleep time is spent in active sleep or REM (Rapid Eye Movement) sleep. (Mubarak et al., 2015) Child experts show that active sleep is important for building children's brain circuits. In fact, a child's brain is more active when he is sleeping than when he is awake. (Blackmer, A. B., & Feinstein, 2016) Children need enough sleep to develop their muscles, arms and legs, and skeletal structure. It is important for children to get a good night's sleep in a comfortable bed. (Potter & Perry, 2005) After 3 months of age, babies begin to follow the sleep rhythm of adults. Babies aged 3-6 months tend to sleep up to 16 hours a day out of 24 hours. (Kate, 2007)

Sleep is a regular and repetitive state without realizing it, resulting in a reduced response to stimuli to obtain calm after tired activities. (Widhiyanti et al., 2017) Sleep quality can be described by looking at the length of time you sleep, sound sleep during sleep and feeling fresh when you wake up and sleep quality. Sleep quality disorders often occur in toddlers (Blackmer, A. B., & Feinstein, 2016). This problem has a negative impact on children's physical and cognitive development, especially as an indicator of their health development and thinking skills in adulthood. Good quality sleep ensures early brain development. (Yulifah et al., 2011) Sleep problems can interfere with the baby's growth, cause vulnerable immune function, and disrupt the regulation of the endocrine system. (Putra, 2011)

To overcome sleep disorders in babies, you can use pharmacological and non-pharmacological methods. Pharmacologically through the use of drugs, non-pharmacologically we do not consume drugs, but we can through baby massage therapy. (Ni Gusti Ayu Pramita Aswitami, 2019) Another way is music therapy, which is one of the very in-depth music therapies mentioned in the Koran. (Etik Dwi Wulandari, 2015) Music therapy is therapy that uses appropriate methods to harmonize melody, rhythm and sound. This therapy is felt by our hearing organs and transmitted to the middle part of the brain called the limbic system, which controls emotions. One form of music therapy is listening to Murottal Surah Al-Qur'an. (Cholil, 2014)

Habitual sleep patterns also play as important a role as total sleep time. Babies and children tend to sleep many times in a 24 hour period. (Noviana et al., 2020) However, as they grow into school age and adulthood, they tend to sleep longer, get less sunlight, and sleep all night. (Robotham, 2011) The level of development of normal sleep patterns is the amount of sleep needed at the age of 3-5 years, around 11-13 hours a day.

There are quite a lot of research results that have been conducted in Indonesia related to sleep disorders. Children who experience sleep problems are around 44%. However, almost or even more than 72% of parents do not consider sleep disturbances in babies as a problem. According to the results of research on sleep disorders under the age of three, which was conducted in five cities, namely Jakarta, Bandung, Medan, Palembang and Batam, data

showed that 51.3% of children experienced sleep disorders, 42% of them slept less than 12 hours a night, waking up at night more than three times a day and long awakenings at night for more than an hour. The prevalence of sleep disorders in children aged 2-4 years in Beijing, China is 23.5%. (Pediatrics, 2006)

One solution that can be done to help sleep quality is by providing Murrotal Al-Quran therapy. (Pratiwi et al., 2015) Al-Qur'an therapy through murottal is part of spiritual therapy which has a positive impact on the body with a fairly simple process, namely "Al-Qur'an verses" are heard for a certain duration according to needs and desires that can influence the function of brain cells so that they produce endorphin hormones that trigger positive feelings. (Aprilini et al., 2019)

Murrotal Al-Quran therapy has a relaxing effect and can reduce anxiety and improve sleep quality in children aged 3 to 5 years due to physical and psychological factors that are common in young children. By providing Murrotal Al-Quran therapy, young children's needs for quality sleep will be met. After Murrotal Al-Quran therapy, the baby will feel relaxed and his anxiety will be reduced, so that the baby's need for quality sleep will be met. (Fatimah, F. S., & Noor, 2015)

Based on the description above and seeing that the prevalence of sleep disorders in children is still high, based on this description. So the researcher aims to determine mothers' knowledge about the use of murrotal Al-Qur'an as an effort to improve sleep quality in children.

## RESEARCH METHODS

This research is a non-experimental research with a descriptive research design, and there is no special data analysis for data processing to determine the mother's knowledge of the use of murrotal Al-Qur'an as an effort to improve the quality of sleep in children. The instrument in this research used a questionnaire, to see the quality of toddlers' sleep. The variable in this research is the mother's level of knowledge regarding the use of murrotal Al-Qur'an as an effort to improve sleep quality in toddlers. The population in this study were mothers who had toddlers aged 1 to 5 years in Jempong Baru Village, Mataram City.

## RESEARCH RESULTS

Table 1

**Distribution of mothers' knowledge regarding the use of murrotal Al-Qur'an as an effort to improve sleep quality in children**

Mother knowledge	(N)	(%)
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Good	87	78,4 %
Enough	15	13,5 %
Not Enough	9	8,1%

Based on the table above, most mothers have good knowledge, 78.4%, 13.5% have sufficient knowledge and 8.1% have insufficient knowledge.

## DISCUSSIONS

The results of the research are that the majority of mothers have good knowledge of the use of murrotal Al-Qur'an as an effort to improve the quality of sleep in children. This is supported because today's mothers really understand how to use gadgets. Through gadgets, namely cell phones, using murrotal Al Qur'an is very easy to apply in everyday life, one of which is to listen to the holy verses of the Al Qur'an.

Murrotal is a type of music that can have a positive impact on listeners. (Al Atsary, 2017) Murrotal Al-Quran therapy is also a healing and relaxation therapy. This has been proven by various studies, and Murrotal is a genre of music that has a positive effect on listening, calming the mind and reducing stress in reflexive nervous tension. (Aprilini et al., 2019)

Murrotal Al-Qur'an therapy will carry sound waves and encourage the brain to produce chemicals called neuropeptides when it is listened to. These molecules will affect the receptors in the body so that the body feels comfortable and relaxed. This will cause the pulse and heart rate to decrease. (AlKaheel, 2012) Sleep has an impact on psychological development, emotion, cognition, consolidation of experience and intelligence. Therefore, children need sleep according to their age to attract the attention of the family so that the child can achieve optimal growth and development in the future.

The results of other similar research were carried out by Citra (Citra et al., 2020), namely regarding the effect of Al-Quran murrotal therapy on the sleep quality of toddlers in Meteseh Village, Semarang City. The research results showed that there was a significant influence on the sleep quality of toddlers after murrotal therapy was carried out. Al-Quran, with research results p value of 0.000. Other research shows that there is an influence of murrotal Al-Quran on the sleep quality of toddlers 1-2 years old. (Ani Laila, 2022) So that the implementation of murrotal Al-Quran therapy which is carried out has a real impact on toddlers in meeting their sleep needs. (Saputra L, 2013)

Sleep quality refers to the specific quality or physiological state achieved during sleep, which has

a restorative effect on the body processes that occur during wakefulness. If your sleep quality is poor, it means there is a problem with your physiology or body function. For example, when you wake up, your brain cells will return to normal. (Saputra L, 2013)

There are three elements to know that a child is getting enough sleep, including the duration of sleep, continuity, which means sleeping continuously without waking up due to sleep disturbances, and finally, sleep quality, namely sleeping soundly and when you wake up, the body is fresher. (Suseno et al., 2020) Researchers at Carnegie Mellon University and the University of Pennsylvania have found that the amount and quality of a child's sleep can be influenced by their circumstances. Children who get enough sleep are characterized by falling asleep easily at night, not having difficulty waking up, and not needing more sleep than is necessary for their development. (Citra et al., 2020)

Various studies regarding the benefits of Murottal Al-Quran therapy show that this therapy reduces stress hormones, activates the natural hormone Endorphin, improves the body's chemical system and influences brain wave activity, and reduces feelings of anxiety. immunity. (Suwanto, Basri, A. H., & Umalekhoa, 2016)

This endorphin hormone reacts as morphine, which can provide a feeling of calm, comfort and relaxation. (Haruyama S, 2011) This strength increases as the patient's physiological response decreases before surgery, as evidenced by a decrease in pulse rate, blood pressure and breathing. (Pratiwi L., 2015)

Experts say sleep has a positive effect on your little one's development. This activity is a way for the child's brain to grow and develop further, so that he or she is intelligent, sensible and has a clear mind. Growth hormone repairs and renews all cells in the body, from skin cells, blood cells to brain nerve cells. This cell renewal process takes place when your little one is asleep from the time he wakes up.

## CONCLUSION

Berdasarkan hasil penelitian bahwa pengetahuan ibu dalam penggunaan murottal Al-qur'an sebagai upaya meningkatkan kualitas tidur pada anak sebagian besar adalah kategori baik 78,4%, kategori cukup 13,5% dan kategori kurang 8,1%.

## SUGGESTION

It is hoped that mothers who have children under five can apply the use of Murottal Al Qur'an as a non-pharmacological therapy to improve sleep quality.

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## THE EFFECTIVENESS OF COUNTERPRESSURE TECHNIQUES IN REDUCING LABOR PAIN LEVELS OF FIRST STAGE ACTIVE PHASE

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### ABSTRAK : EFEKTIVITAS TEKNIK COUNTERPRESSURE DALAM MENURUNKAN TINGKAT NYERI PERSALINAN FASE AKTIF TAHAP I

Latar Belakang : Menurut WHO (2019) mengatakan sebanyak 90% persalinan senantiasa disertai nyeri hebat, prevalensi nyeri saat melahirkan cukup tinggi, yaitu sekitar 86,8% dan sekitar 35,9%. Nyeri persalinan yang tidak diatasi dengan manajemen nyeri yang benar akan menimbulkan masalah lainnya. Salah satunya timbulnya kecemasan, kelelahan serta stress perasaan khawatir Berdasarkan RIESKESDAS tahun 2018 persalinan dengan nyeri antara 85-90% dan hanya 10-15% persalinan yang berlangsung tanpa rasa nyeri, Upaya untuk mengurangi rasa nyeri dapat menggunakan cara farmakologis dan non farmakologis. Salah satu dari berbagai metode untuk menangani rasa sakit selama persalinan yaitu Counterpressure.

Tujuan : Mengetahui Pengaruh Teknik Counterpressure Untuk Mengurangi Nyeri Ibu Inpartu Kala I Fase Aktif Persalinan Normal Sebelum Dan Sesudah Dilakukan Counterpressure

Metode : Metode penelitian menggunakan Quasy Eksperiment (eksperimen semu), sampel menggunakan Total sampling sebanyak 40 responden ibu bersalin. Instrument yang digunakan adalah observasi yang sudah di uji normalitas dan analisis bivariat menggunakan Uji Paired T-Test.

Hasil: Diketahui ibu bersalin di RSUD Kartini Kategori umur 20-30 tahun sebanyak 33 (82,5%), Ibu Rumah Tangga sebanyak 19 responden (47,5%), dan berpendidikan SMA sebanyak 24 responden (60,0%). Hasil analisis bivariat menunjukkan terdapat pengaruh sebelum diberikan Counterpressure skala nyeri adalah 3.10 dengan St.Deviasi 0.118 dengan skala nyeri tertinggi 9 dan terendah 5, setelah dilakukan terapi Counterpressure diperoleh hasil rata-rata 1.95 dengan St. Deviasi 0.087 skala nyeri tertinggi 6 dan terendah 2.

Kesimpulan : Terdapat penurunan intensitas nyeri persalinan kala 1 fase aktif sebelum dan sesudah dilakukan Counterpressure dengan selisih mean 1.15

Saran : Ibu bersalin di harapkan bisa melakukan Counterpressure dan dapat menciptakan rasa nyaman sehingga dapat mengurangi rasa nyeri pada saat proses persalinan.

Kata Kunci : Teknik Counterpressure, Nyeri Persalinan, Ibu bersalin

### ABSTRACT

Background: Pain can interfere with comfort during contractions, WHO data (2019) says 90% of births are accompanied by severe pain, Riekesdas data in 2018 gives births with pain between 85- 90%. Labor pain is not treated with proper pain management, causing anxiety and worry, causing the number of births via Caesarean section in Indonesia to increase by 10% in the 2007 Indonesian Demographic and Health Survey (SDKI) to 23% in the 2017 IDHS. Non-pharmacological is a safe alternative to help relieve pain delivery, with massage or compression techniques.

Objective: To determine the effectiveness of the Counterpressure technique in reducing labor pain levels during the first active phase at Kartini General Hospital in 2023

Methodology: The research method uses Quasy Experiment (quasi-experiment), the sample uses a total sampling of 40 maternal respondents. The instruments used are observations that have been tested for normality and bivariate analysis using the Paired T-Test.

Results: It is known that there were 33 (82.5%) women giving birth at Kartini General Hospital, 19 respondents (47.5%) were housewives and 24 respondents had a high school education (60.0%). The results of the bivariate analysis showed that there was an effect before being given Counterpressure, the pain scale was 3.10 with a St. Deviation of 0.118 with the highest pain scale being 9 and the lowest being 5, after being given Counterpressure therapy the average result was 1.95 with St. Deviation 0.087, the highest pain scale is 6 and the lowest is 2.

Conclusion: There is a decrease in the intensity of labor pain during the 1st active phase before and after

Counterpressure with a mean difference of 1.15

Suggestion: Mothers in labor are expected to be able to do Counterpressure and create a sense of comfort so as to reduce pain during the birthing process.

Keywords: Counterpressure technique, labor pain, delivery women.

## INTRODUCTION

Counterpressure massage is a non-pharmacological technique that effectively reduces the pain of childbirth during the active phase (Daiyah, 2020). Counterpressure massage includes techniques used to relieve pain and can provide pleasant sensations as well as combat discomfort during contractions or between contractions during labor (Juniartati & Widyawati, 2018).

According to Bodeker *et al* (2019), as many as 90% of childbirth is always accompanied by severe pain and by using non-pharmacological methods massage provides emotional support and pain relief, because in the first stage, the laboring mother will experience cervical dilatation and uterine contractions, so that the mother feels moderate to very severe pain with the intensity of the pain scale 7-10. Due to the existence of non-pharmacological interventions such as massage to reduce labor pain with the Counterpressure Technique, making the mother feel a decrease in severe pain, providing a relaxing sensation that fights discomfort during labor, and can reduce tension in the sacrum and pelvic muscles. According to the World Health Organization (2018), the prevalence of pain during childbirth is quite high, which is around 86.8% and around 35.9% (WHO, 2018)

Labor pain that is not addressed with proper pain management will cause other problems. One of them is the emergence of anxiety, fatigue and stress and worryness. As a result of this stress factor, there can be tension in smooth muscles and vasoconstriction of blood vessels. Then uterine contractions will decrease resulting in prolonged labor, affecting fetal well-being Efforts to reduce pain can use pharmacological and non-pharmacological means. One of the various methods to manage pain during labor is Counterpressure. Many women believe that this method helps them cope with pain in a more natural way and does not require the use of pain medication.

Counterpressure massage is performed by applying pressure to the sacrum of a maternal mother at the time of contact using the base or palm of one of the palms (Andarmoyo, 2013). The principle of the counter pressure massage technique will give a block to the pain area so that it can reduce the pain of childbirth. Properly performed massage can reduce

pain as well as relieve muscle tension and individuals can perceive massage as a stimulus to relax, then appear a relaxation response that can reduce the rate of birth belt pain (Susanti *et al.*, 2019).

In various countries, health professionals add Counterpressure to the labor care plan, research conducted by Paseno *et al* (2019) which was obtained from a total sample of 20 respondents (10 respondents for Counterpressure massage and 10 respondents for Effleurage massage). Shows that Counterpressure massage is more effective than Effleurage massage to reduce the pain scale of labor during the active phase I. While Gall's research, Australia found that during labor, mothers who experience pain are very unbearable and then do the non-pharmacological method of Counterpressure massage, which is done in the sacrum can help reduce the scale of labor pain felt by mothers in the first phase of active labor, provide a sense of relaxation and are able to reduce tension due to the release of endorphine hormones that can reduce labor pain according to Akköz Çevik & Karaduman (2020), in Turkey non-pharmacological methods by massage are very effective for relieving pain and anxiety in mothers in the first phase of active labor.

From the survey that I have done in the delivery room of the Kartini General Hospital Jakarta, this research has never been done so this research is expected to be one way to apply complementary midwifery care. Seeing the psychological and physiological impact of using the Counterpressure technique on the perception of pain, the main problem is that laboring women want a comfortable delivery and require appropriate treatment. In addition to Counterpressure there is another method, namely Endorphine massage, which is effective in reducing pain, but if you look at the average reduction in pain in the Counterpressure Technique is 75% greater than the average reduction in pain in the Endorphin massage technique. Thus, non-pharmacological action is a safe alternative in helping to relieve pain during labor, one of which is massage or compression techniques. The lack of research conducted on the effectiveness of the Counterpressure Technique on reducing the level of Pain in Active Phase I Labor makes researchers interested in conducting this research.



## RESEARCH METHODS

This study was conducted by observation. The research method used is one group pretest-posttest the number of samples that is a group of intervention of 40 people. Furthermore, a pretest was conducted to determine the respondent's first stage labor pain scale before being given Counterpressure to reduce labor pain. Then the treatment was given Counterpressure then assessed posttest to re-measure the level of labor pain. The research was conducted at RSU Kartini which is one of the Mother and Child Referral Hospitals in the Cipulir area, Kebayoran Lama, South Jakarta. The research instrument used in this study was an observation sheet to determine the pain level of laboring women

in the first phase of active labor. filling in the observation sheet by the researcher was carried out twice, namely before and after Counterpressure. Research instruments to assess labor pain in the active phase I using verbal and numeric scales.

## RESEARCH RESULTS

### Univariate analysis

Table 1 shows that the characteristics of 40 respondents are as follows: Age category 20-30 years as many as 33 (82.5%), respondents who became housewives as many as 19 respondents (47.5%), and those with high school education as many as 24 respondents (60.0%).

**Table 1**  
**Respondent Characteristics**

Characteristics	N	Percentage (%)	N	Percentage (%)
Age				
<20	4	10.10	10.0	10.0
20-30	33	82.5	82.5	92.5
>35	3	7.5	7.5	100.0
Jobs				
IRT	19	47.5	47.5	47.5
Self-employed	8	20.0	20.0	67.5
Private Employee	13	32.5	32.5	100.0
Education				
Elementary School	2	5.0	5.0	5.0
Junior High School	7	17.5	17.5	22.5
Senior High School	24	60.0	60.0	82.5
Graduate	7	17.5	17.5	100.0

**Table 2**  
**Distribution of differences in birth pain levels when active phase I (before and after) does Counterpressure**

	Mean	N	Std.Deviation	Std. Error Mean	Min	Max
PRE Scale	3.10	40	.744	.118	5	9
Post Scale	1.95	40	.552	.087	2	6

Based on the above data of 40 respondents, the average pregnancy pain scale before giving Counterpressure was 3.10 with st. deviation 0.744 with the highest 9 and the lowest 5 pain scales. After performing the Counter Pressure technique, a mean pregnant pain scale of 1.95 with st deviation of 0.552 was obtained with a highest 6 lowest 2.

### Bivariate analysis

Based on the above data, the average Pre-Test score was 3.10 while for the Post-test score the average was 1.95 with the total sample of 40 respondents. Due to the average pre-test value is 3.10> Post-test 1.95, so it is known that there is a decrease in the intensity of birth pain when 1 active phase and it can be concluded that the significant influence of the administration of Counterpressure on the reduction in birth pain once 1 with a mean difference of 1.15

**Table 3**  
**Distribution of differences in birth pain levels when active phase I (before and after) does Counterpressure**

	Mean	N	Std.Deviation	Std. Error Mean	Min	Max	P Value
Pre Scale	3.10	40	.744	.118	5	9	0.000
Post Scale	1.95	40	.552	.087	2	6	

## DISCUSSIONS

Based on the results of univariate data, the average pain scale during labor phase 1 active phase before the Counterpressure Technique was 3.10 with a minimum of 5, a maximum value of 9 and a standard deviation of 0.744, the scale of labor pain before the Counterpressure Technique was performed, the frequency of pain was very severe as many as 35 respondents (86%). It can be seen from the results of the table that there is a decrease in the pain scale after the Counterpressure Technique is performed.

This is in line with research conducted by (Pasongli *et al.*, 2014) on the effectiveness of Counterpressure on the reduction of kala 1 active phase of normal labor at Advent Manado hospital on 15 respondents inpartu kala 1 active phase can be known that after Counterpressure obtained quite good results, namely a decrease in pain intensity from an unbearable pain scale to a severe scale and a moderate pain scale. There were 2 (13.7%) respondents who said pain on a scale of 7-8 and 13 respondents (86.7%) on a scale of 3-6. This shows a decrease in pain intensity after the intervention, where on the 9-10 pain scale before the intervention 15 respondents (100%) after the Counterpressure intervention became 0%.

Based on the results of the Bivariate analysis, it is known that the results of the Paired Sample T-Test test aim to determine the pain scale before and after treatment. The average Pre-Test value is 3.10% with a standard deviation of 0.744. The results of the statistical test obtained a p value of 0.000, it can be concluded that there is a significant difference in the pain scale before and after treatment with a p value of 0.000 (0.000 < 0.005).

The principle of counter pressure massage technique will provide a block on the pain area so as to reduce labor pain. The correct implementation of massage can reduce pain and reduce muscle tension and individuals can perceive massage as a stimulus to relax, then a relaxation response appears so that it can reduce the level of labor pain (Susanti *et al.*, 2019). This is in line with research deducted by Darmayanti & Suhrawardi (2019) on Counterpressure effectively reducing labor pain in phase 1 of the active phase at BPM Banjarbaru City

area in 2016 against 23 respondents of laboring mothers showed that of the 23 respondents before being given Counterpressure intervention showed that 16 respondents (69.9%) experienced moderate pain, mild pain (47.8%), moderate (43.5%) and severe (8.7%). In the Counterpressure intervention group, the pain intensity before being given Counterpressure intervention averaged 3.13 (moderate pain and severe pain) then the pain intensity after being given Counterpressure intervention averaged 2.61 (mild pain and moderate pain). The difference between before and after Counterpressure is 0.52.

The results of the statistical test using the paired t-test test showed that sig. (2-tailed) 0.398. The mean in the pre-test group was 3.10 and the mean in the post-test group was 1.95. Thus, it can be concluded that there is a difference in pain scale with the Counterpressure Technique. Based on the results of research conducted by researchers, the Counterpressure Technique is effective for reducing labor pain because there is a significant difference as evidenced by sig. (2-tailed) 0.398 > 0.05.

By giving massage with Counterpressure technique can close the gate of pain messages that will be delivered to the spinal cord and brain, besides that with strong pressure when giving the technique it will be able to activate endorphin compounds that are in the synapse of spinal cord cells and the brain, so that the transmission of pain messages can be inhibited and cause a decrease in pain sensation (Farida & Sulistiyanti, 2019)

This study shows that the Counterpressure Technique is performed to reduce labor pain. This is in accordance with the theory put forward by Erinda with counter pressure massage techniques will provide a block on the pain area so that it can reduce labor pain. Correct massage management can reduce pain and reduce muscle tension and individuals can perceive massage as a stimulus to relax, then a relaxation response appears so that it can reduce the level of labor waist pain.

This is in line with the research of Lestari & Andayani (2021) conducted at the Rahayu Ungaran Clinic on the application of the Counter Pressure technique to reduce labor pain during phase I at the Rahayu Ungaran Clinic on 20 respondents inpartu

kala I active phase, it can be seen that the intensity of pain before Counter Pressure is mostly in the category of severe pain on a scale (7-9) as many as 16 people. Pain intensity after Counter Pressure is mostly in the mild pain category on a scale (1-3) as many as 14 people. This shows that there is an influence and there are differences before and after the Counter Pressure technique is carried out on reducing labor pain in phase I.

Researchers see based on these results that the Counterpressure Technique is effectively carried out to reduce labor pain so that the mother becomes more relaxed and comfortable. In addition, the Counterpressure Technique can be done easily and no extra costs are required.

### CONCLUSION

Before the Counterpressure Technique was performed, it showed that 40 respondents had an average labor pain scale before being given Counterpressure of 3.10 with a st. Deviation 0.744 with the highest pain scale 9 and the lowest 5. After the Counterpressure Technique is performed, it shows that 40 respondents, the average scale of labor pain after being given Counterpressure is 1.95 with a st. Deviation 0.552 with the highest pain scale 6 lowest 2. There is a significant decrease in the intensity of labor pain in phase 1 of the active phase before and after the Counterpressure.

### SUGGESTION

It is hoped that as a method of application to maternity patients and it is hoped that there will be more non-pharmacological research in reducing labor pain in the active phase 1 with the aim of realizing labor that runs smoothly, easily, and comfortably. As a midwife, you need to know and understand the Counterpressure technique to reduce the level of pain during labor, so that laboring mothers feel comfortable when giving birth.

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## THE EFFECTIVENESS OF SOLUTION FOCUSED BRIEF THERAPY COUNSELING ON THE DESIRE TO BREASTFEED PREGNANT WOMEN IN THE THIRD TRIMESTER

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### ABSTRAK : EFEKTIFITAS PENDEKATAN KONSELING SOLUTION FOCUSED BRIEF TERAPI TERHADAP KEINGINAN MENYUSUI PADA IBU HAMIL TRIMESTER III

Latar Belakang: Pendekatan konseling yang fokus pada solusi memandang setiap ibu memiliki kemampuan mencari dan menentukan solusi terbaik dalam mengatasi kesulitan dalam menyusui sehingga bayi mendapatkan ASI Eksklusif. Tujuan: Mengetahui Efektifitas Pendekatan Konseling Solution Focused Brief Terapi Tentang ASI Eksklusif Terhadap Keinginan Menyusui Pada Ibu Hamil Trimester III Di Wilayah Kerja Puskesmas Anak Air Kota Padang. Metode : Jenis penelitian yang digunakan pada penelitian ini adalah pre eksperimen dengan desain One – Group Pretest – Posttest Design. Pengambilan sampel dilakukan secara total sampling dengan kriteria ibu hamil trimester III dengan skor IFI maksimum 9 dan bersedia mengikuti 2 kali sesi konseling. Analisa data menggunakan Uji T dependen. Hasil: Rata – rata skor IFI sebelum diberikan konseling solution brief terapi sebanyak 6.23 sedangkan skor IFI setelah diberikan konseling solution brief terapi terjadi peningkatan menjadi 12.97. Hasil uji bivariate didapatkan konseling dengan pendekatan solution brief terapi efektif meningkatkan niat ibu hamil menyusui bayi nya setelah melahirkan dengan nilai Pvalue 0,05 (P value 0, 000). Kesimpulan: Konseling dengan pendekatan solution brief terapi efektif meningkatkan niat ibu hamil menyusui bayi nya setelah melahirkan dengan nilai Pvalue 0,05 (P value 0, 000). Saran: Peningkatan pelayanan konseling untuk peningkatan niat ibu menyusui.

Kata Kunci : Niat Menyusui, Konseling, SFBT, Ibu Hamil

### ABSTRACT

Background: A solution-focused counseling approach views each mother as having the ability to find and determine the best solution in overcoming difficulties in breastfeeding so that the baby gets exclusive breastfeeding. Purpose: To determine the effectiveness of the Solution Focused Brief Therapy Counseling Approach on Exclusive Breastfeeding on the Desire to Breastfeed Pregnant Women Trimester III in the Working Area of the Anak Air Health Center, Padang City. Methods: The type of research used in this study was a pre-experiment with a One - Group Pretest - Posttest Design. Sampling was done by total sampling with the criteria of third trimester pregnant women with a maximum IFI score of 9 and willing to participate in 2 counseling sessions. Data analysis using dependent T test. Results: The average IFI score before being given solution brief therapy counseling was 6.23 while the IFI score after being given solution brief therapy counseling increased to 12.97. The bivariate test results showed that counseling with a solution brief therapy approach was effective in increasing the intention of pregnant women to breastfeed their babies after giving birth with a Pvalue of 0.05 (P value 0, 000). Conclusion: Counseling with a solution brief therapy approach effectively increases the intention of pregnant women to breastfeed their babies after giving birth with a Pvalue of 0.05 (P value 0, 000). Suggestions: Improved counseling services to increase the intention of breastfeeding mothers.

Keywords: Counselling , Infant Feeding Intuition, Pregnancy Women , SFBT

### INTRODUCTION

Stunting is a chronic malnutrition problem due to prolonged undernutrition during the first 1000 days of life due to inadequate nutrition. This condition can increase infant and early childhood mortality rates due to the vulnerability of the child's immune system. In addition, stunted children have poor posture as

adults. (Kementerian Desa Pembangunan Daerah Tertinggal dan Transmigrasi, 2017). Based on data from the National Nutrition Status Survey (SSGI) in 2022, the prevalence of stunting in Indonesia was 21.6%. This number decreased compared to the previous year, which was 24.4%. Although declining, this figure is still high, considering that the stunting

prevalence target in 2024 is 14% and the WHO standard is below 20%. (Kemenkes, 2023).

One of the efforts to reduce the incidence of stunting is to carry out specific nutritional interventions through exclusive breastfeeding. Breast milk is a source of nutritional intake with a balanced composition for newborns for growth and development needs and has an exclusive nature because it is given to babies from birth to 6 months of age and continues up to two years or more with the provision of safe and appropriate complementary foods (Kementerian Desa Pembangunan Daerah Tertinggal dan Transmigrasi, 2017), (Nisa et al., 2023).

Many factors influence exclusive breastfeeding for 6 months in infants. Infant's willingness to breastfeed, mother's intention, opportunity, information, support from health workers, family/community, firm government policy and protection of working women. (Widianingsih & Wilopo, 2013). Not only physical factors, cultural, social and emotional changes are also part of the breastfeeding phenomenon. Therefore, intention to breastfeed is the result of a complex and progressively built behavior since pregnancy. In this regard, maternal intention to breastfeed is considered as one of the most significant factors associated with breastfeeding practice. Research results reveal that the stronger a mother's intention to breastfeed, the more likely she is to breastfeed. (Góes, Ledo, Santos, Pereira-Ávila, Silva, & Christoffel, 2020; Permatasari, et al., 2018).

Maternal intention to breastfeed in pregnant women is most important for the duration and sustainability of breastfeeding. The results of a study conducted in Saudi Arabia on 382 pregnant women with the inclusion criteria of pregnant women who did not have contraindications to breastfeeding such as HIV, hepatitis B, and a history of breast surgery, age 18 years and over and had no disability showed that 56.3% had a strong intention to breastfeed. (Ibrahim, Alshahrani, Thbaity, Sayed, Almedhesh, & Elgzar, 2023).. Research conducted by Tri Astika Endah Permatasari in 2016 in Tangerang on 143 third trimester pregnant women found 61.5% of mothers have a high intention to provide exclusive breastfeeding to their babies since the third trimester (Mean 11.0 ± 2.5 SD). The results of this study were lower when compared to research conducted in the North Barito region of Kalimantan which showed the results of 70% of mothers having a high intention to exclusively breastfeed their babies since the third trimester of pregnancy. This happens because the intention is influenced by the high knowledge of

breastfeeding in the mother. (Permatasari, et al., 2018)

A major challenge in increasing mothers' intention to breastfeed is the lack of knowledge and adequate support. Many mothers do not know how to breastfeed properly, or even know the benefits of breastmilk for both baby and mother. In addition, support from family and the environment is also very important in helping mothers to breastfeed comfortably and smoothly. However, not all families and neighborhoods provide adequate support for mothers who want to breastfeed. (Hanifah and Kartin, 2022)..

Counseling is one of the effective educational methods to high and low educated targets, so that by providing counseling it can easily provide information, can influence opinions, stimulate thinking, is easy, inexpensive and can simultaneously do demonstrations during counseling. Thus, the more mothers are able to breastfeed properly and the more newborns who initiate early breastfeeding (IMD). (Mariani, Sunanto and Wahyusari, 2019) (Yuniarti and Susanto, 2012). This is in accordance with the results of research in Kutai Kartanegara which states that support from health workers in the form of breastfeeding counseling can be provided since pregnancy and is able to use multilingualism. The Antenatal Care (ANC) period is very appropriate for providing lactation counseling, especially in TM III pregnancy, so that it is expected that at the time of delivery breast milk has been released, so that it is ready to be given breast milk in the first hour of birth and continued until the baby is 6 months old. (Mufiddah et al., 2016)..

One of the counseling and psychotherapy approaches influenced by postmodern thinking is the Solution Focused Brief Therapy (SFBT) approach. SFBT is a counseling approach that emphasizes problem solving by finding solutions quickly and precisely in overcoming existing problems. (Sumarwiyah, Zamroni and Hidayati, 2015). This approach is widely used in adolescents and families related to learning patterns, social behavior, increasing self-confidence in adolescents and so on. However, this approach has never been done on third trimester pregnant women to find out the desire to breastfeed mothers in Indonesia. This solution-focused counseling approach considers that each mother has the ability or competence to find and determine the best solution that can later be used in overcoming difficulties in breastfeeding, so as to increase the mother's intention to breastfeed and improve the quality of the relationship between mother and baby. Research has also shown that a solution-focused counseling approach can help

mothers to overcome breastfeeding difficulties. (Eryanti, 2020) (Nisa et al., 2023)(Raissian and Su, 2018).

Based on the description above, the researcher is interested in conducting research with the title "The Effectiveness of Solution Focused Brief Therapy Counseling Approach on the Desire to Breastfeed Pregnant Women in Trimester III in the Working Area of Anak Air Health Center Padang City".

## RESEARCH METHODS

This was a pre-experimental study with One - Group Pretest - Posttest Design in a quasi-experimental setting. This study was conducted at Padang sarai district in Anak Air Healthcare center area's in Padang City in September - October 2023. The population was all third trimester pregnant women in Padang Sarai village in Anak Air Healthcare center area in Padang City which amounted to 40 people. Before conducting the study, all pregnant women conducted an initial assessment of breastfeeding interest using the Infant Feeding Intuition (IFI) questionnaire. Sampling was done by total sampling with the criteria of third trimester pregnant women with a maximum IFI score of 9 and willing to take part in counseling sessions 2 times. Each counseling session was conducted for 20-30 minutes in groups with a solution focused brief therapy approach, with the distance between the first and second counseling sessions being one week. One week after the second counseling session, the intention of breastfeeding mothers was evaluated using the same questionnaire. Data were analyzed using the Paired sample T Test. This study has been approved based on ethical clearance issued by the Ethics Committee of Universitas Perintis Indonesia with number 557/KEPK.F1/ETIK/2023.

## RESEARCH RESULTS

Table 1

	Mean	Minimum - Maximum	P-value
IFI Score before Counseling	6.23	2 - 9	0.000
IFI Score after Counseling	12.97	2 - 16	

Based on table 2, it was found that the average IFI score before being given solution brief therapy counseling was 6.23 while the IFI score after being given solution brief therapy counseling increased to 12.97. The results of statistical tests obtained counseling with a solution brief therapy

## Frequency Distribution of Respondent Characteristics

Characteristics	Frequency	Percentage
Age		
< 20 Years	1	3.3
20 - 35 Years	27	90
> 35 Years	1	6.7
Education		
Not in school - elementary school	2	6.7
Junior -Senior High	23	76.7
Higher Education	5	16.7
Jobs		
Not Working	27	90
Work	3	10
Paritas		
Primiparous	13	43.3
Multiparous	17	56.7
Breastfeeding History		
Exclusive breastfeeding	10	33.3
Not exclusively breastfed	7	23.4
Never breastfed	13	43.3

Based on table 1, 27 respondents (90%) had reproductive age (20 - 35 years), 23 respondents (76.7%) had the last education of junior high school - high school, 27 respondents (90%) were housewives (not working). 17 people (56.7%) respondents with multigravida status and 10 respondents (33.3%) who provide exclusive breastfeeding.

Based on the results of the normality analysis using Shapiro Wilk test, it was known that the levels of intention of breastfeeding mothers (IFI) scores before and after counseling had a p value of <0.05. Such finding indicated that all variables were not normally distributed, so the bivariate test should apply the non-parametric test, namely the Wilcoxon alternative test.

Table 2

## Wilcoxon test analysis results

approach are effective for increasing the intention of pregnant women to breastfeed their babies after giving birth with a Pvalue <0.05 (P value 0, 000).

## DISCUSSIONS

Based on table 2, the score of mothers' intention to breastfeed their babies from immediately after birth to the age of 2 years is 6.23 with a minimum value of 2 and a maximum of 9. The results of the questionnaire analysis, on the statement regarding "when the respondent's baby is 3 months old, the respondent will breastfeed without using formula or other milk", most respondents answered somewhat disagree. This provides an understanding that respondents will continue to breastfeed their babies at the age of 3 months by combining breast milk with formula or other milk.

Breast milk has a unique composition when compared to formula milk. Breast milk contains many antimicrobials, anti-inflammatories, and immunities that are useful for the growth of the baby's immune system. In addition, breastfeeding alone can reduce family expenditure on formula milk. Adequate breastfeeding can help reduce mortality and morbidity, and reduce the risk of infectious diseases. (Asnidawati and Ramdhan, 2021; Weerth et al., 2022).. The many benefits obtained from exclusive breastfeeding behavior (up to 6 months after birth), the World Health Organization (WHO) and the United Nations International Children's Emergency Fund (UNICEF) recommend exclusive breastfeeding in the first 6 months after the baby is born, as well as complementary feeding and continued breastfeeding after 6 months until the age of 2 years or more. (Isuari, 2018) (Meek and Noble, 2022) (Bai et al., 2010). Research in Mexico illustrates that although the majority of mothers agreed to exclusively breastfeed for the first six months because they thought it was best for their babies, in reality, they were

formula feeding in addition to breastfeeding. This occurs because they face difficult circumstances, such as feeling insufficient milk supply, being separated from their baby, or experiencing pain or cracked nipples. Mothers' perceptions that their infants are still hungry after breastfeeding, suggesting insufficient milk production to satiate the infant, are consistently recognized as a reason to formula feed (Zamudio- et al., 2017). (Zamudio- et al., 2017) (Rothstein et al., 2021).

The solution brief therapy counseling approach focuses on finding solutions to problems and making changes so that individuals can become developed individuals. This approach to breastfeeding counseling aims to change the perception, knowledge and behavior of mothers about breastfeeding. After being given counseling on breastfeeding with the solution brief therapy

approach, it was found that the increase in the mother's intention score to breastfeed her baby from immediately after birth to 2 years of age was 12.97 with a minimum value of 2 and a maximum of 16. After undergoing 2 counseling sessions with the solution brief therapy approach, most respondents strongly agreed with the statement "when the respondent's baby is 3 months old, the respondent will breastfeed without using formula or other milk". This illustrates that mothers have a strong intention to give only breast milk without a mixture of formula milk when the baby is 3 months old because they already know the disadvantages of giving formula milk to their babies. In this study, it was found that most of the pregnant women were of reproductive age, had secondary education, and were unemployed. The sociodemographic conditions of respondents, such as age, education, and employment, influence beliefs and attitudes about infant feeding, which in turn influence breastfeeding intentions and ultimately behavior (duration of breastfeeding). (Donath, Alcohol and Center, 2003)..

Intention in shaping behavior in Planned Behavior Theory can predict a person's exclusive breastfeeding behavior in the future. This is evidenced by research in Spain which examines the intention of exclusive breastfeeding in pregnant women and exclusive breastfeeding behavior after the pregnant woman gives birth. Based on research conducted by Tehrani, et al. (2014), it is known that mothers who have the intention of exclusive breastfeeding 46.5% provide exclusive breastfeeding to their babies for 6 months. Then obtained an OR of 5.85 which means that mothers who have the intention of exclusive breastfeeding are 5.85 times more likely to provide exclusive breastfeeding to their babies.

This is in line with the research of Jager, et al. (2014) getting a p-value of 0.01 which means that there is a significant relationship between exclusive breastfeeding intention and exclusive breastfeeding behavior. This study proves that if someone has formed an intention or has the desire to do something, then it is likely that in the future that person will take that action. The likelihood of the behavior being carried out depends on the size of the person's intention.

The statistical test results showed that counseling with a solution brief therapy approach was effective in increasing the intention of pregnant women to breastfeed their babies after giving birth with a Pvalue <0.05 (P value 0, 000). This illustrates that the solution brief therapy approach in breastfeeding counseling is very effective on the mother's desire to breastfeed her baby exclusively.

After 2 counseling sessions, most respondents strongly agreed to "when the respondent's baby is 6 months old, the respondent will breastfeed without using formula or other milk" which means that pregnant women have a strong intention to provide exclusive breastfeeding without formula or other solid food until the baby is 6 months old. The results of research conducted in Malaysia to determine the effect of planned behavior theory on the intention of mothers to breastfeed their babies said pregnant women who intend to have a stronger belief that they will get many positive benefits if they provide only breast milk in the first 6 months of their baby's life. (Alina et al., 2014).

This is according to a study conducted by Megan Rose - Cawdery on pregnant women in Pittsburgh, Pennsylvania on counseling the benefits of exclusive breastfeeding on the intention of breastfeeding mothers. After counseling, pregnant women showed statistically significant changes in their understanding of the possibility that lactation can affect maternal health. After the counseling intervention, the average knowledge score of mothers about breastfeeding increased from a score of 19/35 to 26/35. This increase in knowledge score resulted in an increase in breastfeeding intention of pregnant women (OR 1.20, 95 % CI 1.02-1.42). (Carrie et al., 2016). This suggests that lactation counseling has the potential to have a meaningful impact on breastfeeding intentions and thus infant feeding behaviors and improve health outcomes across two generations. A Scottish study of pregnant and breastfeeding women also found that group or individual counseling improved their breastfeeding intentions and behaviors. The intervention increased breastfeeding initiation and duration most effectively for women who gave birth and received postnatal care in a midwife-led community unit in the intervention area (Hoddinott and Lee, 2014). (Hoddinott and Lee, 2006)

## CONCLUSIONS

The Solution Focused Brief Therapy Counseling Approach is effective on the desire to breastfeed pregnant women in the third trimester in the working area of the Padang City Anak Air Health Center (Pvalue 0.00). For future researchers to be able to examine the intention of breastfeeding mothers with a planned behavior therapy approach with more time and samples.

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## SUGGESTION

Improved counseling services to increase the intention of breastfeeding mothers.

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## THE EFFECT OF CITRUS (LEMON) AROMATHERAPY TO REDUCE LEVEL OF PAIN IN ACTIVE PHASE I LABOR

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### ABSTRAK : EFEK AROMATERAPI CITRUS (LEMON) TERHADAP PENURUNAN TINGKAT NYERI PADA PERSALINAN AKTIF TAHAP I

Latar Belakang: Nyeri persalinan merupakan suatu keadaan fisiologis. Keadaan ini merupakan perasaan tidak menyenangkan yang terjadi pada saat proses persalinan. Jumlah ibu hamil di Kabupaten Tulang Bawang khususnya di RS Mutiara Bunda pada tahun 2022 sebanyak 1638 ibu hamil yang mengalami persalinan normal sebanyak 364 orang dan diperkirakan seluruhnya akan mengalami nyeri saat persalinan (61,53%). Tujuan penelitian: mengetahui pengaruh aromaterapi jeruk (lemon) terhadap penurunan tingkat nyeri persalinan kala aktif I di RS Mutiara Bunda Kabupaten Tulang Bawang pada tahun 2023.

Metode: Jenis penelitian kuantitatif, desain penelitian eksperimen sederhana (Pretest-Postes With Control Group Design). Populasi ibu yang akan melahirkan sebanyak 364 responden per tahun. Sampel yang digunakan sebanyak 30 responden yang dibagi menjadi 2 kelompok yaitu 15 intervensi dan 15 kontrol (tanpa perlakuan). Teknik pengambilan sampel purposif. Analisis data univariat dan bivariat menggunakan uji t independen.

Hasil: Rata-rata intensitas nyeri persalinan fase aktif I pada kelompok intervensi sebelum diberikan inhalasi aromaterapi jeruk (lemon) dengan mean 8,60. Intensitas nyeri persalinan kala I fase aktif pada kelompok intervensi setelah diberikan aromaterapi jeruk (lemon) d inhalasi dengan mean 6,40. Rata-rata intensitas nyeri persalinan fase aktif I sebelum kelompok tidak diberikan inhalasi aromaterapi jeruk (lemon) dengan rerata 8,67. Rata-rata intensitas nyeri persalinan fase aktif I setelah kelompok tidak diberikan inhalasi aromaterapi jeruk (lemon) dengan rerata 8,20. Kesimpulan : Hasil uji statistik diperoleh p-value = 0,000 (<0,05) yang berarti terdapat pengaruh aromaterapi jeruk (lemon) terhadap penurunan tingkat nyeri persalinan kala I kala I. persalinan di RS Mutiara Bunda Kabupaten Tulang Bawang pada tahun 2023. Saran : Diharapkan kepada petugas kebidanan baik di rumah sakit maupun yang mempunyai praktik bidan mandiri agar dapat memberikan promosi kesehatan melalui media leaflet yang berisi materi manfaat dan manfaat. kegunaan aromaterapi untuk kesehatan, khususnya untuk relaksasi persalinan.

Kata Kunci : Aromaterapi Jeruk (Lemon), Nyeri, Fase Aktif Fase I

### ABSTRACT

Background: Labor pain is a physiological condition. This situation is an unpleasant feeling that occurs during the birth process. The number of pregnant women in Tulang Bawang Regency, especially at Mutiara Bunda Hospital in 2022, is 1638 pregnant women who experience normal delivery as many as 364 people and it is estimated that all of them will experience pain during labor (61.53%). Research objective: to know the effect of citrus (lemon) aromatherapy to reduce the level of pain in the first active phase of labor at Mutiara Bunda Hospital, Tulang Bawang Regency in 2023.

Method: Type of quantitative research, simple experimental research design (Pretest-Postes With Control Group Design). The population of mothers who will give birth is 364 respondents per year. The sample used 30 respondents who were divided into 2 groups, namely 15 interventions and 15 controls (without treatment). Purposive sampling technique. Univariate and bivariate data analysis using independent t-test.

Results: The average intensity of active phase I labor pain in the intervention group before being given citrus (lemon) aromatherapy inhalation with a mean of 8.60. The intensity of labor pain in the first stage of active phase in the intervention group after being given citrus (lemon) aromatherapy d inhalation with a mean of 6.40. The average intensity of labor pain during the first active phase before the group was not given citrus (lemon) aromatherapy inhalation with a mean of 8.67. The average intensity of labor pain during the first active phase after the group was not given citrus (lemon) aromatherapy inhalation with a mean of 8.20. Conclusion: The results of the statistical test obtained a p-value = 0.000 (<0.05), which means that there is an influence of citrus (lemon) aromatherapy to reduce the level of pain in the active phase of labor in the first stage of labor at Mutiara Bunda

Hospital, Tulang Bawang Regency in 2023. Suggestion: It is hoped that midwifery officers, both in hospitals and those who have independent midwife practices, should be able to provide health promotion through the media of leaflets containing material on the benefits and uses of aromatherapy for health, especially for relaxing labor.

Keywords : Citrus (Lemon) Aromatherapy, Pain, Active Phase I Phase

## INTRODUCTION

Labor is a natural process that will be experienced by every pregnant woman. In this process there is stretching and widening of the cervix as a result of contractions of the uterine muscles to push the baby out. Most mothers begin to feel pain or labor pain is during the active phase I, in this phase the mother feels severe pain because the uterus contracts more and more frequently to expel the products of conception (Sukarni., Margareth. 2019).

Maternal morbidity and health rates which are described through the Maternal Mortality Rate (MMR) can describe the health status of the mother. This indicator not only assesses maternal health rates, but is also able to assess health services and community health scores. Based on WHO (World Health Organization) data, maternal mortality and morbidity increased in 2015 to 130/100,000 births, in 2014 to 100/100,000 births (WHO, 2020).

In Indonesia, there are 107,000 pregnant women (28.7%) who experience anxiety related to labor pain in the face of labor. In Lampung Province there were 8,948 pregnant women, and there were 5,355 people (59.8%) experiencing labor pain during labor. (Lampung Health Dept Profile, 2020).

The number of pregnant women in Tulang Bawang Regency, especially at Mutiara Bunda Hospital in 2022, was 1638 mothers who had normal deliveries as many as 364 people and it is estimated that all of them experience feelings of pain during labor (61.53%). (Mutiara Bunda Hospital, 2022).

Labor pain can cause stress that 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 uterine ischemia. (Afifah, 2013).

There are several factors that affect the birth process, the strength of contractions and pushing (power), the birth canal (passage), the fetus and placenta (passanger), psychological, and helper (provider). Emotional or psychological factors for prolonged labor are the mother's fear and anxiety that are not resolved during childbirth. 65% of prolonged labor events are caused by inefficient uterine contractions in response to anxiety, thereby

inhibiting uterine activity. One of the causes that ranks at the top of the occurrence of prolonged labor is the stress response. This condition occurs because women face various problems in their adaptation during the birth process, including pain during contractions, fear of being unable to deal with problems that will occur, tension and hyperventilation. (Hayati, 2017).

Unhandled properly pain can cause other problems, namely increasing anxiety in facing childbirth so that the production of the hormone adrenaline increases and causes vasoconstriction thereby reducing maternal blood flow to the fetus. Decreased blood and oxygen flow to the uterus and tissue ischemia result in hypoxia in the fetus and in the mother it can result in prolonged labor and increase in pain impulses. Therefore, this can increase the number of maternal and infant morbidity rates (Himawati., Kodiyah. 2020).

Labor pain can be treated using pharmacological and non-pharmacological methods. Aromatherapy is an alternative non-pharmacological method to reduce pain (Smith & Crowther, 2011; Cholifah, 2016). Lemon aromatherapy contains limonene which can inhibit prostaglandins so that it can reduce labor pain (Cheragi&Valadi, 2010; Cholifah, 2016). Limonene control siklooksigenase I and II, prevent prostaglandin activity and reduce pain (Namazietal., 2014; Cholifah, 2016)

According to Young (2011; Oktaviani, 2020), Lemon aromatherapy oil is easily available and contains 66-80% limonene, geranylacetate, nerol, linalylacetate,  $\alpha$  pinene 0.4-15%,  $\beta$  pinene 1-4%, terpinene 6-14% and myrcen. Limonene is the main component in citrus chemical compounds that can inhibit the action of prostaglandins so that they can reduce pain (Cheragi&Valadi, 2010; Oktaviani, 2020).

In addition, limonene controls cyclooxygenase I and II, prevents prostaglandin activity and reduces pain, including nausea and vomiting. (Namazietal, 2014; Rompas, 2019). Linalyl acetate contained in lemon aromatherapy is an ester compound formed by combining organic acids and alcohol. Esters are very useful for normalizing emotional states and unbalanced body conditions, and also have properties as a sedative and tonic,

especially for the nervous system. (Tarsikah, et al, 2012; Ulsafitri, 2018).

Based on the pre-survey in January 2023 normal labor pain at Mutiara Bunda Hospital, Tulang Bawang Regency, Lampung Province found that women in labor experienced pain to the point of anxiety. For self-pain management, only drugs from the hospital were used and no additional intervention was given as pain relief. Based on the pre-survey conducted on 5 mothers in labor, it was found that 4 mothers experienced labor pain with a moderate degree of pain on a scale of 6, and 1 mother experienced mild pain on a scale of 4.

## RESEARCH METHODS

This research is a quantitative research. The experimental design used in this research is a simple experimental design (Pretest-Postes With Control Group Design). The population in this study were pregnant women at Mutiara Bunda Hospital, Tulang Bawang Regency with a total of 364 respondents a year. This study used 2 groups, namely the intervention group in the form of giving citrus aromatherapy and the control group (without treatment) with a total of 15 in each group so that the total sample was 30 respondents giving birth at Mutiara Bunda Hospital, Tulang Bawang Regency.

The sampling technique in this study was purposive sampling. This research will be conducted from February to June 2023. Measuring labor pain using the FLACC pain meter, aromatherapy is given to gauze/tissue in the amount of 3 drops with a pipette/syringe or the equivalent of 1 ml, then inhaled to the respondent. The treatment group was given lemon inhalation aromatherapy for 30 minutes and the control group was given deep breathing guidance for 30 minutes. Ask the patient to inhale slowly through the nose and analyze univariate and bivariate data using independent t-tests.

## RESEARCH RESULTS

### Characteristics of Respondents

Table 1 shows the characteristics of respondents in the intervention group based on the highest number of ages not at risk (20-35 years) 13 respondents (86.7%) high school education 7 respondents (46.7%) housewife work 8 respondents (53, 3%) primipara parity 9 respondents (60.0%). Whereas in the control group the age is not at risk (20-35 years) 14 respondents (93.3%) high school education 6 respondents (40.0%) housewife work 7 respondents (46.7%) primipara parity 9 respondents (60.0%).

**Table 1**  
**Characteristics of Respondents at Mutiara Bunda Hospital, Tulang Bawang Regency in 2023**

Characteristic	Intervention		Control	
Age				
No. Risk	13	86,7	14	93,3
Risk	2	13,3	1	6,7
Pendidikan				
3-year diploma	1	6,7		
bachelor	4	26,7	6	40,0
Senior High School	7	46,7	6	40,0
Junior High School	3	20,0	3	20,0
Work				
Teacher	1	6,7	1	6,7
Non-permanent employees	-	-	1	6,7
House wife	8	53,3	7	46,7
Non governance employees	5	33,3	4	26,7
Nurse	1	6,7	-	-
Self-employed	1	6,7	1	6,7
Police	-	-	1	6,7
Paritas				
Multipara	6	40,0	6	40,0
Primipara	9	60,0	9	60,0

## Univariate Analysis

Pretest intervention group

Table 2

**Intensity of Labor Pain During the First Stage of Active Phase in the Intervention Group Before Being Given Citrus (Lemon) Aromatherapy Inhalation at Mutiara Bunda Hospital, Tulang Bawang Regency in 2023**

	Pain	N	Mean	SD	SE	Min-Max
Pretest		15	8,60	0,507	0,131	8-9

From table 2 it is known that the average labor pain intensity in the first stage of the active phase in the intervention group before being given citrus (lemon) aromatherapy inhalation at Mutiara Bunda Hospital, Tulang Bawang Regency in 2023, with a mean of 8.60, which means that the respondent experienced controlled severe pain, with the lowest pain score of 6 and the highest pain score max 9.

Pretest intervention group

From table 3 it is known that the average intensity of labor pain during the first stage of the active phase in the intervention group after being given citrus (lemon) aromatherapy inhalation at Mutiara Bunda Hospital, Tulang Bawang Regency in 2023, with a mean of 6.40, which means that the respondent experienced moderate pain, with The lowest pain score is 6 and the maximum pain score is 7.

Tabel 3

**Intensity of Labor Pain During the First Stage of Active Phase in the Intervention Group After Being Given Citrus (Lemon) Aromatherapy Inhalation at Mutiara Bunda Hospital, Tulang Bawang Regency 2023**

	Pain	N	Mean	SD	SE	Min-Max
Posttest		15	6,40	0,507	0,131	6-7

Pretest Control Group

Table 4

**Intensity of Labor Pain During the First Active Phase Before the Group Was Not Given Citrus (Lemon) Aromatherapy Inhalation at Mutiara Bunda Hospital, Tulang Bawang Regency in 2023**

	Pain	N	Mean	SD	SE	Min-Max
Pretest		15	8,67	0,488	0,126	8-9

From table 4 it is known that the average intensity of labor pain during the first active phase before the group was not given citrus (lemon) aromatherapy inhalation at Mutiara Bunda Hospital, Tulang Bawang Regency in 2023, with a mean of 8.67, which means that respondents experienced controlled severe pain, with the lowest pain score is 8 and the highest pain score is max 9.

Posttest Control Group

From table 5 it is known that the average labor pain intensity in the first stage of the active phase after the group was not given citrus (lemon) aromatherapy inhalation at Mutiara Bunda Hospital, Tulang Bawang Regency in 2023, with a mean of 8.20, which means that the respondent experienced controlled severe pain, with the lowest pain score 7 and the highest pain score max 9.

Table 5

**Intensity of Labor Pain During the First Active Phase in the Group Not Given Citrus (Lemon) Aromatherapy Inhalation at Mutiara Bunda Hospital, Tulang Bawang Regency In 2023**

	Nyeri	N	Mean	SD	SE	Min-Max
Posttest		15	8,20	0, 561	0, 145	7-9

## Bivariat Analysis

**Table 6**  
**Effect of Citrus (Lemon) Aromatherapy to Reduce Pain Levels in Active Phase I Labor at Mutiara Bunda Hospital, Tulang Bawang Regency in 2023**

Hospital, Tulungagung Regency in 2020							
	Pain	N	Mean	SD	SE	Mean Rank	P –Value
Pretest	Intervention Group	15	8,60	0,507	0,131	15,00	0,000
	Control Group	15	8,67	0,488	0,126		
Posttest	Intervention Group	15	6,40	0,507	0,131	8,20	
	Control Group	15	8.20	0. 561	0. 145		

Table 6 shows the average intensity of labor pain during the first active phase in the intervention group before inhaling citrus (lemon) aromatherapy at Mutiara Bunda Hospital, Tulang Bawang Regency in 2023, with a mean of 8.60 which means that the respondent is in controlled severe pain, while after given the intervention, the average intensity of labor pain during the first active phase in the intervention group decreased to 6.40 in the category of moderate pain respondents.

In the control group, the intensity of labor pain in the first stage of the active pretest phase was 8.67, which means that the respondent had controlled severe pain, and in the second measurement of pain, it was 8.20, which means that the respondent remained in controlled severe pain.

The results of the statistical test obtained a p-value = 0.000 (<0.05) indicating the effect of citrus (lemon) aromatherapy to reduce pain levels in the first active phase of labor at Mutiara Bunda Hospital, Tulang Bawang Regency in 2023.

## DISCUSSIONS

### Univariate Analyse

Average Intensity of Labor Pain During the First Phase of the Active Phase in the Intervention Group before Inhalation of Citrus (Lemon) Aromatherapy at Mutiara Bunda Hospital, Tulang Bawang Regency in 2023

The intensity of labor pain during the first active phase in the intervention group before inhalation of citrus (lemon) aromatherapy at Mutiara Bunda Hospital, Tulang Bawang Regency in 2023, was 8.60, which means that the respondent was in controlled severe pain, with the lowest pain score being 6 and the highest being 9.

In line with the theory by Zakiyah (2015) Pain is an unpleasant sensory experience, the main element that must exist to be called pain is an unpleasant feeling. Without that element it cannot be categorized as pain, although on the contrary everything that is unpleasant cannot be called pain

In the opinion of researchers Labor pain is different for every woman. How he perceives and

interprets pain is influenced by various physical, emotional, psychosocial, cultural and environmental factors. Discomfort or pain during labor is caused by the descent of the fetal head into the pelvic cavity, pressure on the cervix and stretching of the vaginal wall and pelvic floor muscles caused by the descent of the presenting part of the fetus.

### Labor Pain Intensity During the First Phase of the Active Phase in the Intervention Group After Being Given Citrus (Lemon) Aromatherapy Inhalation at Mutiara Bunda Hospital, Tulang Bawang Regency in 2023

The average intensity of labor pain during the first active phase in the intervention group after inhaling citrus (lemon) aromatherapy at Mutiara Bunda Hospital, Tulang Bawang Regency in 2023 was 6.40, which means that respondents experienced moderate pain, with the lowest pain score of 6 and the highest pain score 7. in accordance with the theory by Maryunani (2010) Pain during the opening is caused by the opening of the cervix, for example stretching smooth muscle is a sufficient stimulus to cause pain. There is a close relationship between the opening of the cervix and the intensity of pain (the more open the more painful), and between the onset of pain and the onset of uterine contractions (pain felt  $\pm$  15-30 seconds after the start of the contractions).

In the opinion of researchers, pain in the category of severe pain and after being given an intervention has decreased to mild pain. This is because labor pain is physiological. Labor during the 1st active phase, the mother will experience repeated contractions which cause uterine contractions to increase then stimulate pain to pain receptors which send signals to the spinal cord, pain signals from the spinal cord will be sent to the hypothalamus which conveys sensory information to the body so that the mother will feel pain .

After being given lemon aromatherapy, the pain decreased to become mild, this is because the content of lemon essential oil can stimulate the hypothalamus nerves to release endorphine

substances so that the respondent can feel relaxed, and results in a decrease in pain.

Lemon citrus aromatherapy can be used to treat pain and anxiety. One of the substances contained in lemons is linalool which is useful for stabilizing the nervous system so that it can have a calming effect on anyone who inhales it. Linalool in aromatherapy causes a feeling of relaxation, increases circulation and transmits electrochemical messages to the central nervous system. Furthermore, this linalool will cause spasmolytic and reduce the flow of nerve impulses that transmit pain. Linalool functions as an anxiolytic or a substance that can reduce anxiety, its main activity is to increase the body's immunity and improve circulation and increase the excitation response of cells. Limonene contained in citrus lemon aromatherapy can inhibit prostaglandins so that it can reduce pain. (Purwandari & Sabrian, 2014)

**Average Intensity of Labor Pain During the First Active Phase before the Non-Inhalation Citrus (Lemon) Aromatherapy Group at Mutiara Bunda Hospital, Tulang Bawang Regency in 2023**

The average pretest pain intensity during the first stage of labor in the active phase in the non-inhalation group at Mutiara Bunda Hospital, Tulang Bawang Regency in 2023, was 8.67, which means that respondents experienced controlled severe pain, with the lowest pain score being 8 and the maximum pain being 9.

Sayiner et al (2009; Istiani, 2020) Pain is a condition that affects a person and its existence is known if someone has experienced it. There are three general factors that influence labor pain, namely anxiety and fear and worry. The long duration of labor will add to the mother's anxiety and fear so that it affects the activity of the hormone oxytocin. Besides that, if the delivery has complications and there is excessive intervention in the delivery process it will increase the mother's anxiety (Syalfina 2017; Zulperitha, Nababan, and Hutaaruk 2021).

According to researchers, the pain experienced during labor is unique to each mother. In primigravida women, severe pain is felt more dominantly because the mother has not experienced pain like during childbirth. The pain that the mother feels indicates an opening in the cervix. Increasing the volume and frequency of uterine contractions, the pain you feel will get stronger.

**Average posttest Intensity of Labor Pain During the First Stage of the Active Phase in the Non-Inhalation Citrus (Lemon) Aromatherapy Group**

**at Mutiara Bunda Hospital, Tulang Bawang Regency in 2023**

The posttest of labor pain intensity during the first active phase in the non-inhalation group at Mutiara Bunda Hospital, Tulang Bawang Regency in 2023, was 8.20, which means that the respondent had severe pain under control, with the lowest pain score of 7 and the highest pain score of 9.

Acute pain occurs after an acute injury, illness, or surgical intervention and has a rapid onset of varying intensity (mild to severe) and lasts for a short time. The function of acute pain is to warn of impending injury or illness. Acute pain will usually go away with or without treatment once the damaged area has healed (McCaffery (2010).

Labor pain is pain due to myometrial contractions accompanied by mechanisms of physiological and biochemical changes. In addition to physical, psychological and emotional factors, motivation also influences the incidence of labor pain. As many as 90% of labor is accompanied by pain, even to severe pain. Stress on the mother will cause the release of stress hormones such as catecholamines and steroids, resulting in a reduction in maternal blood flow to the fetus. Pain that cannot be tolerated by the mother can stress the mother resulting in more pain impulses and weak uterine muscle contractions resulting in prolonged labour. This can cause distress to the fetus.

### **Bivariate Analysis**

**Effect of Citrus (Lemon) Aromatherapy to Reduce Pain Levels in Active Phase I Labor at Mutiara Bunda Hospital, Tulang Bawang Regency in 2023**

The statistical test results obtained a p-value = 0.000 ( $<0.05$ ) which means that there is an influence of citrus (lemon) aromatherapy to reduce the level of pain in the active phase of labor in the first stage of labor at Mutiara Bunda Hospital, Tulang Bawang Regency in 2023.

Aromatherapy is a therapeutic action using essential oils which is useful to improve one's physical and psychological condition to be better. Each essential oil has unique pharmacological effects, such as antibacterial, antiviral, diuretic, vasodilator, sedative, and adrenal stimulating. (Runiari & Ana, 2010).

The average intensity of labor pain during the first active phase in the intervention group before inhaling citrus (lemon) aromatherapy at Mutiara Bunda Hospital, Tulang Bawang Regency in 2023, with a mean of 8.60, which means that respondents experienced controlled severe pain, whereas after being given the intervention the average the average labor pain intensity during the first active phase in the

intervention group decreased to 6.40, which means that the respondent had moderate pain.

In the control group, the average posttest intensity of labor pain during the first active phase in the control group at Mutiara Bunda Hospital, Tulang Bawang Regency in 2023, was 8.67 respondents with controlled severe pain, and in the second measurement, an average pain of 8.20 respondents was obtained. controlled severe pain. In this study it was proven that there were differences in pain reduction in the intervention and control groups, where the results of post-test pain in the intervention group were relatively lower compared to the control group.

Based on the characteristics of the respondents in the intervention group, the highest number was not at risk (20-35 years) 13 respondents (86.7%). The age of the respondents in this study was dominated by young people or those who were not in the risk zone, that is, 20-35 years old is a healthy age for pregnancy and childbirth. Age determines a mother's health, the mother is said to be at high risk if the pregnant woman is under 20 years old and over 35 years old. (Afritayeni, 2017). Maternal age < 20 years and > 30 years is a risk factor for labor complications. Women who become pregnant at a high risk age can cause complications for both the mother and the baby. Age is related to the unpreparedness of the mother in reproduction, women under the age of 20 are still in the stage of growth and development, so their reproductive organs are immature. (Hariyani, Murti, & Wijayanti, 2019)

In the education category, Senior High School Education 7 respondents (46.7%). The education in this study was the last formal education attended by the respondent and received a diploma. According to Notoatmodjo (2010), the higher a person's education, the easier it is to get information and ultimately influence a person's behavior. The characteristics of the respondents who were the subject of this study most had a recent history of high school education. Education for a person is a dynamic influence in the development of body, soul, feelings so that different levels of education will provide different types of experiences as well. The level of education is associated with an increase in the pain scale resulting from a lack of coping strategies so that someone with a low level of education is less able to adapt to pain (Thomten et al, 2012).

Occupation of housewives 8 respondents (53.3%). The majority of mothers who were respondents were mothers who did not work or were housewives. The same research conducted by

Budiman et al., (2017) shows that mothers who work outside the home can do their jobs if the work cannot interfere with their pregnancy.

Primipara parity 9 respondents (60.0%). In this study, the average respondent has primipara parity, which means that they have not had childbirth experience. A mother who has experienced childbirth will understand how the pain will be felt during labor. Meanwhile, mothers who have never given birth do not know how the pain will be felt for the first time during labor, especially in primiparas. The cervix in primiparas requires greater force to stretch it, thus causing a greater intensity of contractions during the first stage of labour. Research states that most multiparas experience moderate pain levels, whereas primiparas tend to experience severe pain levels. However, in this study, more respondents experienced severe pain in multiparas, this was because the number of multiparas in this study was higher than primiparas.

Decreased pain after giving lemon-orange aromatherapy due to the presence of linalil acetate in lemon-orange aromatherapy is very useful for normalizing emotional states and unbalanced body conditions, and has properties as a sedative and tonic, especially for the nervous system. So it can be concluded that lemon-orange aromatherapy is a type of aromatherapy that can be used to treat pain and anxiety. The effects of aromatherapy are very complex and subtle due to their complex chemical structure and properties. The mechanism of action of aromatherapy involves the integration of essential oils into biological signals from receptor cells in the nose when inhaled. Signals sent to the limbic and part of the brain, the hypothalamus through the bulb. These signals cause the brain to release olfactory neuro messengers such as olfactory serotonin, endorphins etc., to connect the nervous system with other body systems that are believed to bring about the desired changes and provide feelings of relief.

Lemon aromatherapy can be used to treat pain and anxiety. One of the substances contained in lemons is linalool which is useful for stabilizing the nervous system so that it can have a calming effect on anyone who inhales it. Linalool in aromatherapy induces feelings of relaxation, increases circulation and sends electrochemical messages to the central nervous system. Furthermore, this linalool will cause spasmolytic and reduce the flow of nerve impulses that transmit pain. Linalool functions as an anxiolytic or a substance that can reduce anxiety, its main activity is to increase the body's immunity and improve circulation and increase the excitation response of cells. Limonene contained in lemon



aromatherapy can inhibit prostaglandins so that it can reduce pain. (Purwandari & Sabrian, 2014)

## CONCLUSION

there was an effect of citrus (lemon) aromatherapy to reduce the level of pain in the active phase of labor in the first stage of labor at Mutiara Bunda Hospital, Tulang Bawang Regency in 2023.

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## THE EFFECT OF GIVING BOILED WATER OF RED BETEL LEAVES ON FLUOR ALBUS SYMPTOMS IN AGED WOMEN FERTILE

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### ABSTRAK : PENGARUH PEMBERIAN AIR RESEP DAUN SIRAH MERAH TERHADAP GEJALA FLUOR ALBUS PADA WANITA USIA SUBUR

Pendahuluan: Keputihan masih menjadi masalah yang dialami sebagian besar wanita di Indonesia. Sebanyak 90% wanita di Indonesia mengalami keputihan dan sebanyak 60% dialami oleh wanita usia subur. Sedangkan berdasarkan dari Poli kebidanan RSUD Jend. Ahmad Yani Kota Metro tahun 2015 terdapat 63 kasus keputihan, 65,1% kasus diantaranya terjadi pada wanita usia subur. Berdasarkan survey yang dilakukan, pada tahun 2021 terdapat 69 kasus keputihan di PMB wilayah Puskesmas Ganjar Agung, diantaranya 73,9% dialami oleh wanita usia subur. Sedangkan pada tahun 2022 terdapat peningkatan WUS yang mengalami keputihan yaitu sebanyak 73 kasus dan 89% keputihan dialami oleh wanita usia subur. Salah satu intervensi yang dapat diberikan oleh wanita yang mengalami keputihan adalah pemberian air rebusan daun sirih merah yang bermanfaat untuk mengurangi keputihan pada wanita usia subur.

Tujuan: Mengetahui pengaruh air rebusan daun sirih merah terhadap penurunan keputihan pada wanita usia subur.

Metode: Jenis penelitian ini kuantitatif, menggunakan pendekatan *one- group pra-post test design*. Pelaksanaan pada bulan Februari sampai Juli 2023 di PMB Wilayah Kerja Puskesmas Ganjar Agung. Penelitian ini menggunakan data primer dan sekunder dengan jumlah sampel 30 orang wanita usia subur. Teknik sampling menggunakan *purposive sampling*. Variabel *independent* yaitu daun sirih merah dan variabel *dependent* yaitu penurunan gejala keputihan. Instrumen penelitian menggunakan SOP, lembar observasi dan kertas lakmus. Analisis data secara univariat dan bivariat uji-t (Wilcoxon).

Hasil: Didapatkan rata-rata skor keputihan sebelum diberikan intervensi adalah 6,83 sedangkan rata-rata skor setelah diberikan intervensi adalah 3,80. Dimana 30 responden (100%) mengalami penurunan gejala keputihan. Hasil uji statistik p value = 0,000 dimana p value < 0,05 berarti H<sub>0</sub> ditolak dan H<sub>1</sub> diterima, yang berarti ada pengaruh air rebusan daun sirih merah terhadap penurunan keputihan.

Kesimpulan: Air rebusan daun sirih merah terbukti menurunkan keputihan yang dialami oleh wanita usia subur. Penelitian ini dapat diberikan air rebusan daun sirih merah pada pasien yang mengalami keputihan.

Kata Kunci : Daun Sirih Merah, Keputihan, Wanita Usia Subur

### ABSTRACT

Background :Fluor albus is still a problem experienced by most women in Indonesia. As many as 90% of women in Indonesia experience fluor albus and as much as 60% are experienced by women of childbearing age. Whereas based on the General Hospital Jend Obstetric Poly. Ahmad Yani Metro City in 2015 there were 63 cases of vaginal discharge, 65.1% of cases which occurred in women of childbearing age. Based on a survey conducted, in 2021 there were 69 cases of fluor albus in the PMB of the Great Health Center region, of which 73.9% were experienced by women of childbearing age. Whereas in 2022 there was an increase in WUS that experienced fluor albus, which was as many as 73 cases and 89% of vaginal discharge was experienced by women of childbearing age..

Purpose: To determine the effect of red betel leaf stew water on decreased fluor albus symptoms in women of childbearing age.

Methods: This type of research is quantitative, leaving a one-group pre-post test design approach. Implementation in February to July 2023 in the PMB of the Great Ganjar Agung Puskesmas Work Area. This study uses primary and secondary data with a sample of 30 women of childbearing age. Sampling technique leaves purposive sampling. The independent variable is the red betel leaf and the dependent variable is a decrease in fluor albus symptoms. Research instruments turn on SOP, observation sheets and litmus papers. Univariate data analysis and t-test bivariate (Wilcoxon).

Results: Getting an average of fluor albus scores before being intervened was 6.83 while the average score after being intervened was 3.80. Where 30 respondents (100%) experienced a decrease in fluor albus symptoms. Statistical test results p value = 0.000 where p value < 0.05 with H0 is rejected and H1 is accepted, which means that red betel leaf has an effect in fluor albus.

Conclusion: red betel leaves have an effect in fluor albus. It is hoped that they can use non-pharmacological therapies such as red betel leaves to treat fluor albus as a complement to pharmacological therapy.

Keywords: Red Betel Leaf, Fluor Albus, Female Age Fertile

## INTRODUCTION

Women's reproductive health problems are very complex. Problems with women's reproductive health occupy 33% of all diseases that affect women worldwide (Hidayanti et al., 2021). Leucorrhoea is a common condition experienced by most women related to reproductive health problems. According to Manuaba (1998) vaginal discharge is the name of a symptom in the form of fluid secreted from the genitals which is not blood and is not a disease but is a manifestation of almost all gynecological diseases (Hana et al, 2018).

Women of childbearing age in Indonesia have the potential to experience vaginal discharge because Indonesia is an area with a tropical climate, so that fungi easily develop which results in many cases of vaginal discharge. Women of Reproductive Age (WUS) are women whose reproductive organs function properly between the ages of 20 and 45 years. Fertility is highest between the ages of 20 and 29 years. At this time, a woman has a 95% chance of getting pregnant (Passe, 2021).

According to WHO (2018), approximately 75% of women worldwide will experience vaginal discharge at least once in their lifetime, and 45% will experience vaginal discharge more than once, while 25% of women in Europe will experience vaginal discharge more than once. A study in India showed that the prevalence of vaginal discharge in teenage female students reached 95% (Prabawati, 2019).

As many as 90% of women in Indonesia experience vaginal discharge and as many as 60% are experienced by women of childbearing age (Prabawati, 2019). Based on the midwifery polyclinic at Jend. Ahmad Yani Metro City in 2015 there were 63 cases of vaginal discharge, 65.1% of cases of which occurred in women of childbearing age. Based on a survey conducted, in 2021 there were 69 cases of vaginal discharge at the PMB in the Ganjar Agung Health Center area, of which 73.9% were experienced by women of childbearing age. Whereas in 2022 there will be an increase in WUS experiencing vaginal discharge, namely as many as 73 cases and 89% of vaginal discharge will be experienced by women of childbearing age.

Leucorrhoea is divided into 2 types, namely physiological leucorrhoea (normal leucorrhoea), namely vaginal discharge that is white or clear, odorless and does not cause itching in the vagina and pathological leucorrhoea (leucorrhoea due to infection which is usually yellow or green in color, smells fishy/stinky and cause itching) (Passe, 2021).

Leucorrhoea cannot be underestimated because the effect can be fatal if it is handled too late. Not only can it cause infertility but can also be an early symptom of cervical cancer which can lead to death. Leucorrhoea can also affect a person's psychology because it tends to recur and recur so that it can affect a person both physiologically and psychologically (Trisnawati, 2017).

Leucorrhoea can be treated in several ways. The first way is to pay attention to personal hygiene, use of cotton or sweat-absorbent underwear, adherence to diet, rest, or pharmacological treatment such as fluconazole and metronidazole. But now the international community and the Indonesian people have started to prioritize the use of natural medicines. Using herbal medicine, red betel leaves (*Piper crocatum*) can be used to treat leucorrhoea (Paskawati, 2021).

According to Trisnawati, (2017) red betel contains tannins in its leaves which are useful for reducing fluid secretion in the vagina. This proves that red betel leaf boiled water is effective for treating leucorrhoea, as evidenced by the measurement results obtained with a pH <5. Therefore, it is recommended for women of childbearing age (WUS) to use red betel leaf boiled water to treat leucorrhoea.

A preliminary study conducted by researchers at the PMB in the working area of the Ganjar Agung Public Health Center in March, obtained 9 WUS who experienced vaginal discharge after being interviewed and carried out a pH test using litmus paper, it was found that 6 WUS experienced pathological vaginal discharge with a pH > 5 which was due to a lack of knowledge about leucorrhoea treatment. and do not pay attention to personal hygiene.

In several research journals, red betel leaf is effective in reducing leucorrhoea, for this reason

researchers have an innovation in providing non-pharmacological therapy in the form of red betel leaf boiled water to reduce vaginal discharge in women of childbearing age.

In accordance with the above, researchers are interested in researching the effect of giving red betel leaf boiled water on vaginal discharge in women of childbearing age (WUS) in the PMB working area of the Ganjar Agung Public Health Center in 2023.

The purpose of this study was to find out the effect of giving red betel leaf boiled water on vaginal discharge in women of childbearing age (WUS) in the PMB working area of the Ganjar Agung Health Center in 2023

## LITERATURE REVIEW

### Vaginal discharge

Whitish (leukorrhea, flour albus, vaginal discharge) is an excessive discharge from the vagina other than menstrual blood, and is not caused by a neoplasm or systemic disease. According to Sarwono (2010) leucorrhoea is abnormal vaginal secretions in women accompanied by itching in the vagina and around the outer vaginal lips (Sulistiyowati, 2016). Leucorrhoea is discharge from the genitals that is not blood. Discharge is a sign that ovulation is happening in your body. In addition, vaginal discharge is also a sign of disease (Marhaeni, 2016). Leucorrhoea can be physiological (normal) and pathological (abnormal). Leucorrhoea is caused by microbial infections, which can cause genital inflammation and hormone imbalance (Sukamto et al, 2018).

Physiological vaginal discharge occurs in women before menstruation, in the middle of the menstrual cycle, and after menstruation. The amount is not too much, the color is clear, white (sometimes leaves a yellowish tint on underwear), odorless and not accompanied by itching, pain, swelling of the genitals, burning and burning when urinating (urinating) on the lower body. Physiological vaginal discharge is generally caused by hormonal processes in the body (Sholihah, 2020).

Meanwhile, pathological leucorrhoea is an exudate fluid and this fluid contains many leukocytes. Exudate occurs due to the body's reaction to the presence of injury (wound). Abnormal vaginal discharge can occur with any genital infection (infections of the labia, genital openings, cervix, supporting tissues, and sexually transmitted infections). If vaginal discharge is abnormal, it may change color, turn yellow or gray, or smell fishy or foul. Increased amount of vaginal discharge, which

can cause discomfort such as itching and burning in the genitals (Hanipah, 2021)

According to Marhaeni (2011) the impact that may arise in women who experience vaginal discharge, namely physiological and pathological vaginal discharge affects women. Excessive secretions can cause discomfort to a woman and affect her self-confidence. Pathological vaginal discharge that persists can affect the function of the female reproductive organs, especially the fallopian tubes, and cause infertility. Pregnant women can experience miscarriage, fetal death in the womb, birth defects, and premature birth.

Pharmacologically, leucorrhoea can be overcome by taking a single dose of oral medicine (one time consumption) at a doctor's reception, for example a single dose drug for leucorrhoea, namely diflucan with a dose of 150 mg. Fluconazole can also be used to treat infections caused by *Candida albicans* (metronidazole class of drugs used to treat bacterial and parasitic infections), but patients should be advised to avoid alcohol while taking metronidazole. Other drugs such as Vaginal Betadine, Dettol are also used to remove vaginal discharge from the vaginal canal, but do not kill the bacteria that cause it. Other drugs that can be used are vaccination, tetracycline, penicillin, thiamphenicol, doxycycline, and erythromycin. Gentian violet 1%, nitronidazole 2x1 tablet (500 mg) for 10 days, antibiotics for 3 days in a row, for example ampicillin 3 x 1 tablet (500 mg), this is a drug used to treat leucorrhoea, and continuous use of this drug can cause nausea, stomach pain, diarrhea, headaches, irregular menstruation, allergic reactions (rash, itching), and liver damage. Apart from using drugs (pharmacology), efforts to deal with vaginal discharge can also be done by destroying warts that grow on the cervix, vaginal opening, and labia. Warts can also be removed by surgery on some cervical tissue. If vaginal discharge occurs as a result of sexual intercourse, therapy should be given to sexual partners and sex should be avoided during treatment (Varney, 2009). and continuous use of this drug can cause nausea, stomach pain, diarrhea, headache, irregular menstruation, allergic reactions (rash, itching), and liver damage. Apart from using drugs (pharmacology), efforts to deal with vaginal discharge can also be done by destroying warts that grow on the cervix, vaginal opening, and labia. Warts can also be removed by surgery on some cervical tissue. If vaginal discharge occurs as a result of sexual intercourse, therapy should be given to sexual partners and sex should be avoided during treatment (Varney, 2009). and continuous use of this drug can cause nausea, stomach pain, diarrhea, headache,

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Apart from keeping the genitals clean and treating them with drugs, vaginal discharge can also be treated non-pharmacologically by utilizing the plants around us, including red betel leaf (*Piper crocatum*). Red betel leaves contain phytochemicals, namely essential oils, alkaloids, saponins, tannins and flavonoids which are thought to have potential as antibacterial agents.

### Women of childbearing age

Women of childbearing age are women who are still in their productive age, namely between the ages of 15-49 years with unmarried and married status (Depkes RI, 2016). Meanwhile, according to Hidayati et al. (2020), Women of Reproductive Age (WUS) are women with normal reproductive organs between the ages of 20 and 45 years. Meanwhile, according to BKKBN (2011), women of childbearing age (women of working age) are women aged between 20 to 45 years who are not married or married.

There are several diseases in women of childbearing age, namely:

1. Leucorrhoea, vaginal discharge is discharge other than blood from the vaginal canal out of habit, whether smelly or not, and accompanied by local itching.
2. Vaginal infections, such as trichomonas vaginalis and candidiasis vaginitis
3. Vaginal infection Common symptoms of vaginal infection (vaginitis) include external infection

(lips), discharge (pus), itching and burning sensation. The surface of the external genitalia appears red and swollen with red spots.

4. Condyloma acuminata, shaped like a cauliflower with connective tissue and covered with hyperkeratotic epithelium (thickening of the stratum corneum).
5. Bartholin's gland infection, caused by gonorrhea, readyolokokus or streptococcus bacteria. Examination found swollen glands, tight, red, painful, and hot.

### Red Betel Leaf

Red betel leaf (*Piper crocatum* Ruiv & Pav) is a plant that belongs to the Piperaceae family. Betel is a shrub with stems and segments like tendrils, 5-10 cm apart, with roots growing from each segment. Stemmed leaves, elliptical, tapering, subacute at base and tapering at tip, flat edge, shiny or glabrous. 9-12 cm long and 4-5 cm wide. Pinnatus leaf veins from the lower half, leaf veins 4-5 x 2, bullulatus-lacunosa. Petiolus, 10 mm long, spike 90-110 mm long, 5 mm thick. The upper leaves are dark green, with silvery areas around the veins, and the undersides are purple. The upper leaves are dark green with silvery areas around the veins and purple below. Slimy leaves, less bitter taste, less distinctive smell.

According to Sudewo (2010) in Hidayat (2019) from the chromatogram results it is known that red betel leaves contain flavonoids, polevenolad compounds, tannins and essential oils. Other chemical constituents contained in red betel leaves are essential oils, hydroxycavicol, kavi-col, cavibetol, allylprocatekol, car-vacrol, eugenol, p-cymene, cineole, caryofelen, kadimen estragol, ter-penene, and phenylpropanate. Because of the many substances / chemical compounds that are useful, red betel leaf has very broad benefits as a medicinal ingredient. Carvacrol has disinfectant and anti-fungal properties, so it can be used as an antiseptic for bad breath and vaginal discharge. Eugenol can be used to reduce pain, while tannins can be used to treat stomach pain (Hidayat, 2019).

According to traditional medicine, red betel leaves can tighten the intimate organs and overcome dryness in the intimate area. In addition, red betel leaves can overcome the smell of female organs which cause itching and overcome the bacteria that cause vaginal discharge. Therefore, the use of red betel leaves is more widely used to wash or clean the female organs (Manoi, 2007).

Based on the background description of the problem above, this is the author's basis for formulating the problem: "Is there any effect of giving

red betel leaf boiled water on vaginal discharge in women of childbearing age (WUS) in the PMB working area of the Ganjar Agung Health Center in 2023?"

## RESEARCH METHODS

This study used a quasi-experimental approach with a one-group pretest-posttest design. In this study, 32 women were used as the population of women of childbearing age who experienced vaginal discharge with a vaginal pH > 5, based on data from January to March 2023. The sampling technique in this study was purposive sampling. With a sample of 30 people.

The research instrument is the tools that will be used in measuring the results of the variables. In this study, researchers used litmus paper and observation sheets. The data analysis used in this

study was univariate using the frequency distribution and bivariate analysis using the Wilcoxon test (because the data is not normally distributed).

## RESEARCH RESULTS

In this study, data were taken directly by measuring the vaginal secret pH of 30 respondents before and after the intervention with the following analysis results.

### Univariate Test Results

Based on table 1 below, the average vaginal discharge score in women of childbearing age (WUS) before being given red betel leaf boiled water is 6.83, for a standard deviation of 0.379 with a minimum value of 6 and a maximum value of 7.

Table 1

**The Average Score of Leucorrhoea in Women of Reproductive Age (WUS) Before Giving Water Stewed Red Betel Leaves in the PMB Working Area of the Ganjar Agung Health Center**

Characteristics	N	Means	SD	Min	Max
Pretest	30	6,83	0.379	6	7

Based on table 2 below, the average vaginal discharge score in women of childbearing age (WUS) after being given red betel leaf boiled water is 3.80,

for a standard deviation of 0.610 with a minimum value of 3 and a maximum value of 5.

Table 2

**The Average Score of Leucorrhoea in Women of Reproductive Age (WUS) After Being Given Red Betel Leaf Boiled Water in the PMB Working Area of the Ganjar Agung Health Center**

Characteristics	N	Means	SD	Min	Max
Posttest	30	3.80	0.610	3	5

### Bivariate Test Results

Based on table 3 below it is known that the data before being given boiled water of red betel leaves obtained a p value of 0.000 and after being

given boiled water of red betel leaves obtained a p value of 0.000 so it can be said that the data is not normally distributed, so the effect test uses the Wilcoxon Sign Rank.

Table 3

**Normality Test of Leucorrhoea Before and After Giving Red Betel Leaf Boiled Water to Women of Reproductive Age in the Working Area of the Ganjar Agung Public Health Center**

Characteristics	Statistics	df	Sigs (p)
Pre Test	0.452	30	0.000
Posttest	0.765	30	0.000

Based on table 4 below, the statistical test found that all respondents, totaling 30 respondents,

experienced a decrease in vaginal discharge values (negative ranks) during the post test.

**Table 4**  
**Pre Test and Post Test Using Red Betel Leaf Water Using the Wilcoxon Test**

Intervention	rank	N	MeanRanking	Sum Of Ranks
Pre Test – Post Test	Negative	30	15.50	465.00
	positive	0	0.00	0.00
	ties	0		

Based on table 5 below, the results of the influence test using the Wilcoxon test found that the p value is 0.000 which is smaller than alpha (0.05), then H<sub>0</sub> is rejected and H<sub>1</sub> is accepted, meaning that there is an effect of giving red betel leaf boiled water

on symptoms of vaginal discharge in women of childbearing age (WUS) in the PMB Working Area of the Ganjar Agung Health Center. A Z score of 5.063 was obtained, where the farther the Z score was from 0, the more significant the effect would be.

**Table 5**  
**The Effect of Red Betel Leaf Boiled Water on Symptoms of Leucorrhoea in Women of Reproductive Age (WUS) in the Working Area of the Ganjar Agung Public Health Center**

Intervention	Z	P-value
Pre Test – Post Test	5,063	0.000

## DISCUSSIONS

### The Average Score of Leucorrhoea in Women of Reproductive Age (Wus) Before Giving Red Betel Leaf Decoction Water in the Working Area of the Ganjar Agung Public Health Center

Based on the data obtained from the research results, the average vaginal discharge score in women of childbearing age (WUS) before being given red betel leaf boiled water was 6.83, for a standard deviation of 0.379 with a minimum value of 6 and a maximum value of 7.

Age is one of the factors that can affect knowledge, namely with increasing age there will be changes in a person's physical aspects which in turn can affect one's knowledge. Sufficient knowledge, then will be able to change attitudes and behavior. However, at the age of women of childbearing age, they are prone to experiencing vaginal discharge problems in women. This can be proven that women of childbearing age aged 20-45 years are prone to vaginal discharge, because it can be triggered by psychological tension which can increase the burden on the mind from conditions that are unpleasant or difficult to pass.

According to research (Syahlani, et al, 2013) one of the causes of leucorrhoea is due to the use of contraceptives containing hormones, in the use of hormonal contraceptives vaginal discharge increases by about 50% compared to non-users of hormonal contraception, vaginal discharge occurs more frequently with higher levels of estrogen. The genital organs contain the body's defense mechanisms in the form of bacteria which become the acidity level of the vaginal pH. Normally the

acidity rate in the vagina ranges from 3.8-4.2, most of which 95% are Lactobacillus bacteria and the rest are pathogenic bacteria. Leucorrhoea will appear when the acidic conditions drop, the Lactobacillus bacteria break down glycogen into lactic acid, causing an acidic environment in the vagina causing Candida albicans to thrive in the vaginal area.

Information is needed as a source of knowledge from cadres and local health workers. In the current era, the availability of information and access to information has made it easier for respondents to seek knowledge. Interpersonal and environmental factors also influence a person's ability to obtain and disseminate information. Women of childbearing age will experience vaginal discharge which is a factor in personal hygiene. A person must have awareness regarding the lifestyle that is lived and also have knowledge regarding the problems and consequences that can be caused by the disease. Respondents with low levels of education will find it difficult to digest the information they get. Respondents who have good knowledge regarding problems that can arise, then the respondent will try to prevent problems that will arise. Respondents must understand the problems that will arise if they are not handled properly, one of which is the problem of vaginal discharge in female respondents of childbearing age which often occurs (Ernawati, 2018).

From the description above, the researchers argue that women who experience vaginal discharge are caused by a lack of information so that respondents do not have the awareness to maintain



vaginal hygiene so that women of childbearing age easily experience vaginal discharge.

#### **The Average Score of Leucorrhoea in Women of Reproductive Age (Wus) After Being Given Red Betel Leaf Boiled Water in the Working Area of the Ganjar Agung Public Health Center**

Based on the results of the study, the average vaginal discharge score in women of childbearing age (WUS) after being given red betel leaf boiled water was 3.80, for a standard deviation of 0.610 with a minimum value of 3 and a maximum value of 5. There was a decrease in the average vaginal discharge score before and after being given red betel leaf boiled water, before being given red betel leaf boiled water the average score was 6.83 and the average vaginal discharge score after being given red betel leaf boiled water was 3.80.

This study proves that there is an effect of using red betel solution on reducing vaginal discharge complaints in women of childbearing age. There is a decrease in symptoms of vaginal discharge in women, due to the content of red betel which has been clinically tested to treat leucorrhoea. According to Trisnawati, (2017) red betel contains tannins in its leaves which are useful for reducing fluid secretion in the vagina.

This proves that red betel leaf boiled water is effective for treating leucorrhoea, as evidenced by the measurement results obtained with a pH <5. According to Sadewo (2010) betel leaves contain active compounds such as essential oils with high phenol content. Essential oils act as antibacterial by interfering with the process of forming membranes or cell walls so that they are not formed or formed imperfectly.

The benefits of betel leaf are not only as a cure for vaginal discharge but can also be used as a medicine for canker sores, coughs, irregular menstruation, relieving itching, bad breath. Betel leaves are also used to wash the vagina and reduce leucorrhoea because they contain karvakol which is a disinfectant and anti-fungal so it can be used as an antiseptic drug to reduce leucorrhoea (Saparinto, 2016).

Betel leaves contain chemicals such as essential oils, hydroxychavicol, kavi-col, cavibetol, allylprocatekol, car-vacrol, eugenol, p-cymene, cineole, caryofelen, kadimen estragol, ter-penene, and phenylpropanate. Because of the many substances / chemical compounds that are useful, red betel leaf has very broad benefits as a medicinal ingredient. Carvacrol has disinfectant and anti-fungal properties, so it can be used as an antiseptic for bad breath and vaginal discharge. Eugenol can be used

to reduce pain, while tannins can be used to treat stomach pain (Hidayat, 2019).

#### **The Effect of Red Betel Leaf Boiled Water on Symptoms of Leucorrhoea in Women of Reproductive Age (Wus) in the Working Area of the Ganjar Agung Public Health Center**

Based on the results of the study using the Wilcoxon test, it was found that the p value was 0.000 which was smaller than alpha (0.05), meaning that there was an effect of giving red betel leaf boiled water on symptoms of vaginal discharge in women of childbearing age (WUS) in the PMB Working Area of the Ganjar Agung Health Center. A Z score of 5.063 was obtained, where the farther the Z score was from 0, the more significant the effect would be.

The results of this study are in line with those conducted at Dayah Daruzzahidin and Darul Hikmah, Kuta Baro District, Aceh Besar District in 2022 showing that there is a significant effect of giving red betel leaf boiled water on the incidence of pathological vaginal discharge. The results of the statistical analysis showed that there was a significant difference between the group given red betel leaf boiled water and the control group, with a pvalue of 0.001. This indicates that giving red betel leaf boiled water has a positive effect in reducing the incidence of pathological vaginal discharge in young women. This is also in accordance with Novemi's research (2020), it is known that betel leaf is effective in treating leucorrhoea, this is because closing the genitals (vagina) using boiled water of betel leaves regularly with clean and warm water can overcome vaginal discharge on the genitals. According to research results in Indonesia, there is evidence showing that betel leaf is effective in treating vaginal discharge in women.

Research conducted by Ernawati (2018) concluded that giving red betel leaf boiled water had a significant effect on reducing vaginal discharge symptoms in women of childbearing age, with a p value of 0.000. This shows that betel leaf has potential as an effective treatment for leucorrhoea. In addition, research conducted by Firmalia (2016) also found that the use of red betel leaf boiled water had an effect on treating vaginal discharge in women of childbearing age, with a p-value of 0.011. These results indicate that betel leaf can be used as an effective alternative treatment for leucorrhoea. Based on several studies in Indonesia, results were found showing that betel leaf is effective in treating leucorrhoea.

Research conducted by Ernawati (2018) and Firmanlia (2016) shows that regular administration of red betel leaf boiled water can reduce symptoms of

vaginal discharge in women of childbearing age. This supports the use of red betel leaves as an alternative method of treating leucorrhoea. According to Sadewo (2010) betel leaves contain active compounds such as essential oils with high phenol content. Essential oils act as antibacterial by interfering with the process of forming membranes or cell walls so that they are not formed or formed imperfectly. The benefits of betel leaf are not only as a cure for vaginal discharge but can also be used as a medicine for canker sores, coughs, irregular menstruation, relieving itching, bad breath.

## CONCLUSION

The average vaginal discharge score in women of childbearing age (WUS) in the PMB Working Area of the Ganjar Agung Public Health Center before being given red betel leaf boiled water obtained a value of 6.83.

The average vaginal discharge score in women of childbearing age (WUS) in the PMB Working Area of the Ganjar Agung Health Center after being given red betel leaf boiled water obtained a value of 3.80.

There is an effect of giving red betel leaf boiled water on symptoms of vaginal discharge in women of childbearing age (WUS) in the PMB Working Area of the Ganjar Agung Health Center with a p value of 0.000 (p value <0.05).

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## THE RELATIONSHIP BETWEEN KNOWLEDGE AND NUTRITIONAL STATUS WITH THE INCIDENCE OF EDEMA DURING PREGNANCY

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### ABSTRAK: HUBUNGAN PENGETAHUAN DAN STATUS GIZI DENGAN KEJADIAN KEK PADA MASA KEHAMILAN DI PUSKESMAS BEBESAN

Latar Belakang: Gizi ibu hamil perlu mendapat perhatian karena sangat berpengaruh pada perkembangan janin yang dikandungnya. Pada masa kehamilan gizi ibu hamil harus memenuhi kebutuhan gizi untuk dirinya dan untuk pertumbuhan serta perkembangan janin karena gizi janin tergantung pada gizi ibu, sehingga kebutuhan gizi ibu juga harus tetap terpenuhi.

Tujuan: Mengetahui ada hubungan pengetahuan dan status gizi dengan kejadian kek pada masa kehamilan di Puskesmas Bebesan.

Metode: Penelitian dilakukan penelitian deskriptif analitik dengan pendekatan cross sectional. Populasi pada penelitian ini adalah seluruh ibu hamil di Puskesmas Bebesan. Sampel penelitian melibatkan 30 ibu hamil di Puskesmas Bebesan dan 378 eseha sampling accidental sampling. Analisis data pada penelitian ini menggunakan analisis univariat dan bivariat yang menggunakan software SPSS untuk melakukan uji chi square.

Hasil: Hasil analisis statistik didapatkan ada hubungan pengetahuan dan status gizi dengan kejadian kek pada masa kehamilan di Puskesmas Bebesan dengan nilai  $p = 0,00 < \alpha = 0,05$ .

Kesimpulan: Terdapat hubungan antara positif antara pengetahuan dan status gizi dengan kejadian kek pada masa kehamilan di Puskesmas Bebesan.

Saran: Agar tenaga kesehatan memberikan edukasi sehingga meningkatkan pengetahuan ibu hamil dan memperhatikan status gizi ibu hamil.

Kata Kunci : Pengetahuan, Status Gizi, Ibu Hamil, Kekurangan Energi Kronis

### ABSTRACT

Background: The nutrition of pregnant women needs attention as it significantly affects the development of the fetus they are carrying. During pregnancy, the nutrition of pregnant women must meet the nutritional needs for themselves and for the growth and development of the fetus because the fetus's nutrition depends on the mother's nutrition, so the mother's nutritional needs must also be met.

Purpose: To determine the relationship between knowledge and nutritional status with the incidence of chronic energy deficiency during pregnancy at Bebesan Health Center.

Methods: The research was conducted using descriptive analytic research with a cross-sectional approach. The population in this study was all pregnant women at Bebesan Health Center. The research sample involved 30 pregnant women at Bebesan Health Center using accidental sampling technique. Data analysis in this study used univariate and bivariate analysis using SPSS software to conduct chi-square tests.

Results: The results of the statistical analysis showed a relationship between knowledge and nutritional status with the incidence of chronic energy deficiency during pregnancy at Bebesan Health Center with .p value status  $p = 0.00 < \alpha = 0.05$ .

Conclusion: There is a positive relationship between knowledge and nutritional status with the incidence of chronic energy deficiency during pregnancy at Bebesan Health Center.

Suggestions: Health professionals should provide education to improve the knowledge of pregnant women and pay attention to the nutritional status of pregnant women.

Keywords: : Knowledge, Nutritional Status, Pregnant Women, Chronic Energy Deficiency

## INTRODUCTION

Pregnancy is process nine month or more where a Woman bring embryo and fetus growing inside her womb . Death and pain Mother pregnancy , childbirth and postpartum Still is problem large developing countries including Indonesia (Apriana et al., 2021). In poor countries, around 25-50% of deaths woman age fertile caused by related problems with pregnancy and childbirth , and postpartum . WHO estimates all over the world every the year more of 585,000 died moment pregnant or giving birth (Azria & Husnah, 2016; Friscila et al., 2023; Susanto et al., 2016).

Maternal nutrition pregnant need get attention because it has a big influence on development the fetus she is carrying . During pregnancy nutrition Mother pregnant must fulfil need nutrition For himself and for growth as well as development fetus Because nutrition fetus depending on nutrition mother , so need nutrition Mom should too still fulfilled (Retnaningtyas et al., 2022). Intake energy and protein do not enough for the mother pregnant can causes lack of energy Chronic (KEK). Pregnant women who experience CED if Circumference Upper Arm (LLA) < 23.5 cm. Pregnant mother with risky KEK giving birth to low birth weight babies (LBW) potential experience death , disorder growth and development child . KEK can also be done become reason No direct death Mother (Anggraini, 2017; Chandra et al., 2019; Ernawati, 2018; Putri et al., 2020; Retnaningtyas et al., 2022).

Prevalence Mother Pregnant women who experience low energy Chronic (KEK) tends to occurs in developing countries than in developed countries . One of problem nutrition common in mothers pregnant in Indonesia is lack protein calories . One of reason Mother's death ie Lack Energy Chronicle (KEK). Role adequacy Nutrition is vital, starting from since first trimester of pregnancy until one thousand day First life (Chandra et al., 2019; Fitriani et al., 2023; Jamilah et al., 2024; M. Lestari et al., 2022).

Knowledge is very influential factor to decision . Someone who has knowledge about something thing , then he tend will take more decisions appropriate related with problem the compared to with those with knowledge low (Mara, 2018; Nainggolan et al., 2024; Nurmawati & Indrawati, 2018). Lack of knowledge Mother pregnant about nutrition cause lack of food nutritious during pregnant . One of factor affecting nutrition Mother pregnant that is knowledge Mother pregnant and family about substance nutrition in food . Planning and preparation food race Mother or woman mature have important role . Factor affecting

planning and preparation healthy and balanced food for Mother pregnant that is ability mother and family in buy food as well as knowledge about nutrition (Friscila, Wijaksono, et al., 2022; Y. P. Lestari & Friscila, 2023).(Patria & Amatiria, 2018)

Knowledge possessed a Mother will influence behavior Mother including in taking decision . Mother with good nutrition , possibly will fulfil need good nutrition For the baby . So that mother who has good knowledge although at the beginning her pregnancy experience nausea and feeling not comfortable so He will endeavor For fulfil need nutrition and that of the baby (Gustina et al., 2020; Paralegal.id, 2019; Safitri & Lubis, 2020; Siregar et al., 2023).

In Indonesia there are many happen KEK cases ( shortage Energy Chronic ) especially likely caused Because exists no balance intake nutrition ( energy and protein), so substance required nutrition body No sufficient . Lack of Energy Chronic (KEK) is one of them form lack general nutrition occurs during pregnancy . SEZ marked with lack of intake adequate energy compared to with need body , which can cause various problem health Good for Mother nor fetus . The impact of CED during pregnancy can form enhancement risk complications pregnancy , birth premature , baby 's weight born low , as well problem health period length in babies born (Friscila, Us, et al., 2022; Widoyoko & Septianto, 2020).

Defining factor occurrence of CED during pregnancy very complex , and one potential factors influence is knowledge Mother pregnant about nutrition as well as their nutritional status . Sufficient knowledge about nutrition can help Mother pregnant in choose and consume healthy and nutritious food , while having good nutritional status can give intake adequate nutrition for growth fetus (Novitasari et al., 2019; Sholikah et al., 2017).

Although study previous has highlighting importance knowledge and nutritional status in prevent incidence of CED during pregnancy , however Still there is need For explore more carry on about connection second factor the with SEZ incidence , especially in rural areas or at the center health community (Puskesmas) that serves population with access limited to Health (Nainggolan et al., 2024).

Therefore that , research This aim For evaluate connection between knowledge and nutritional status with incidence of CED during pregnancy at the Community Health Center Bebesan . Findings from study This expected can give more understanding Good about factors that influence CED during pregnancy and delivery base for development more intervention effective in prevent it.

The novelty of this study is that it involves questions in questionnaires that concern local culture. The question asked is Food abstinence according to culture / habits that affect the nutrition of pregnant women.

Formulation question is There is connection knowledge and nutritional status with incidence of CED during pregnancy at the Community Health Center Bebesan ?

Research purposes general is for know connection knowledge and nutritional status with incidence of CED during pregnancy at the Community Health Center Bebesan .

## RESEARCH METHODS

Types of research This use study descriptive analytic with cross sectional approach. Population in research This is all over Mother pregnant at the health center Bebesan . Research sample involving 30 mothers pregnant at the health center Bebesan and *accidental* sampling techniques .

Instrument study use questionnaire used For get knowledge variable data about CED and nutritional status Mother pregnant. The method of measuring knowledge can be done by interviews or questionnaires that ask about the content of the material you want to measure from the research subject or respondent. The questions used in this study (questionnaire grid) include: Principles of nutrition for pregnant women, nutritional needs in pregnant women, Factors that affect the nutrition of pregnant women, Food abstinence according to the culture that affect the nutrition of pregnant women, As a result if pregnant women are malnourished, Understanding SEZ, Factors Affecting Chronic Energy Deficiency (SEZ), Assessment of Nutritional Status with Upper Arm Circumference.

SEZ examination is carried out by measuring the middle circumference of the upper arm (LILA) and using Body Mass Index (BMI) measurements. The relationship between BMI and LILA is positive, meaning that women with a larger LILA size will have a large BMI. analysis in research This use analysis univariate and bivariate use SPSS *software* for carry out the chi square test.

## RESEARCH RESULT

### Analysis Results Univariate

Based on table 1 is known part big knowledge respondents in categories Good that is as many as 16 respondents or 53.3%.

**Table 1**

**Distribution frequency based on Knowledge Level**

Knowledge	Frequency	Percentage (%)
Good	16	53.3
Not good	14	42.7

**Table 2**

**Distribution frequency based on Nutritional Status**

Nutritional status	Frequency	Percentage (%)
Not CED	15	50
SEZ	15	50

Based on table 2 is known that There were 15 respondents who experienced CED (50%0 of the 30 total samples.

## Analysis Results Bivariate

**Table 3**

**Relationship knowledge with incidence of CED during pregnancy at the Community Health Center Bebesan**

Knowledge	Nutritional status		P value
	Not CED	SEZ	
Good	13	3	0,000
Not good	2	12	

Based on table 3 is obtained results statistical analysis that p value = 0.000 which is significant There is connection knowledge with incidence of CED during pregnancy at the Community Health Center Bebesan .

## DISCUSSIONS

Analysis results statistics show exists significant relationship between level knowledge Mother pregnancy and the incidence of CED. Findings This consistent with study previously from study Diningsih (2021) identified it knowledge about nutrition during pregnancy as influencing factors in health Mother pregnancy and development fetus , obtained exists connection level knowledge about nutrition to incident Lack Energy Chronic (CED) in the mother pregnant at the health center Subdistrict Matraman , East Jakarta , with a p-value of  $0.000 < 0.05$  (Diningsih et al., 2021).

Good knowledge about nutrition during pregnancy possible Mother pregnant For make choice more food healthy and understanding need necessary nutrients For growth and development fetus . This matter important Because proper nutrition during pregnancy No only influence health

motherhood , but also development fetus and risks complications during pregnancy and childbirth (Fauziana & Fayasari, 2020; Hutasoit et al., 2020; Syamaun et al., 2021).

Enhancement knowledge Mother pregnant about aspects relevant nutrition , such as need will substance iron , calcium , acid folate , and protein, can help reduce SEZ risk . Therefore that's the result study This highlighting importance education focused nutrition in prenatal care . Health workers need give clear and easy information understandable about need nutrition during pregnancy to Mother pregnant , as well give support in reach pattern eat healthy . With so , effort For increase knowledge Mother pregnant about nutrition can become effective strategy in prevent CED and improve well-being Mother pregnant and her baby .

Assumption researcher that knowledge with more understanding Good about importance fulfil need nutrition during pregnancy , mother pregnant tend consume food rich in nutrition , reducing CED risks and complications related .

## CONCLUSION

Knowledge is very important For especially health improvement Mother pregnant For cope CED incident .

## SUGGESTION

It is hoped that health workers will provide education to increase mothers' knowledge about CED.

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## THE RELATIONSHIP OF FATIGUE AND HUSBAND'S SUPPORT TO MOTHER'S MOTIVATION IN BREASTFEEDING THE FIRST 24 HOURS TO POSTPARTUM MOTHERS

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### ABSTRAK : HUBUNGAN Kelelahan DAN DUKUNGAN SUAMI TERHADAP MOTIVASI IBU DALAM MENYUSUI 24 JAM PERTAMA PADA IBU PASCA PERSALINAN

Latar Belakang : Kelelahan merupakan keluhan yang sering dialami ibu setelah melahirkan, dan dapat berpengaruh terhadap motivasi ibu dalam memberikan ASI dalam 24 jam pertama postpartum. Untuk itu ibu postpartum memerlukan dukungan dari keluarga terutama dukungan suami sebagai keluarga terdekat karena akan memberikan dampak positif terhadap pengalaman ibu dalam menyusui Tujuan penelitian ini untuk mengetahui hubungan antara kelelahan ibu dan dukungan suami terhadap motivasi ibu dalam pemberian ASI 24 jam pertama pada ibu postpartum di Ruang Nifas RSUD Akhmad Berahim.

Metode : Penelitian ini menggunakan survei analitik dengan pendekatan *cross sectional* yang dilakukan pada 42 orang ibu postpartum normal dengan teknik pengambilan sampel *total sampling*. Instrumen yang digunakan dalam penelitian ini adalah *Postpartum Fatigue Scale* (PFS), kuesioner dukungan suami, dan *breastfeeding motivational instructional measurement scale* (BMIMS). Uji statistik univariat, bivariat dengan menggunakan uji Spearman Rho, dan uji multivariat dengan regresi logistik ordinal.

Hasil : Penelitian ini menunjukkan bahwa ada korelasi antara kelelahan dan dukungan suami terhadap motivasi pemberian ASI 24 jam pertama postpartum dengan  $p$  value  $< 0,05$ .

Kesimpulan : dari penelitian ini diketahui terdapat hubungan yang bermakna antara kelelahan dan dukungan suami terhadap pemberian ASI 24 jam pertama postpartum. Dengan kekuatan hubungan pada kategori cukup kuat dan arah hubungan korelasi positif.

Kata kunci : Dukungan Suami, Kelelahan, Motivasi pemberian ASI 24 jam pertama

### ABSTRACT

Background: Fatigue is a complaint that is often experienced by mothers after giving birth, and can affect the motivation of mothers in giving milk in the first 24 hours postpartum. For this reason, postpartum mothers need support from the family, especially the support of the husband as the closest family because it will have a positive impact on the mother's experience in breastfeeding The purpose of this study was to determine the relationship between maternal fatigue and husband support for maternal motivation in breastfeeding the first 24 hours for postpartum mothers.

Method: This study used an analytical survey with a cross sectional approach conducted on 42 normal postpartum mothers with total sampling techniques. The instruments used in this study were Postpartum Fatigue Scale (PFS), husband support questionnaire, and breastfeeding motivational instructional measurement scale (BMIMS). Univariate, bivariate statistical tests using the Spearman Rho test, and multivariate tests with ordinal logistic regression.

Results: This study showed that there was a correlation between fatigue and husband support for breastfeeding motivation in the first 24 hours postpartum with a  $p$  value of  $< 0.05$ .

Conclusion: from this study it is known that there is a significant relationship between fatigue and husband support for breastfeeding in the first 24 hours postpartum. With the strength of the relationship in the category is quite strong and the direction of the relationship is positively correlated.

Keywords: Fatigue, Husband Support, Motivation for breastfeeding the first 24 hours

## INTRODUCTION

The postpartum or puerperium period is the period after labor and birth of the baby and placenta needed for the restoration of the uterine organs as before pregnancy with approximately 6 weeks (Hsains et al., 2023). The postpartum period occurs in three stages, namely Immediate postpartum (Indrianita et al., 2021), early postpartum (Soetrisno et al., 2023) and late postpartum (Soetrisno et al., 2023). In the postpartum period there are also many changes in the mother in the form of physiological changes and psychological adaptations. One of the physiological changes that occur is changes in the breasts. Changes that occur in the breasts because breastfeeding will arise (Yuliani, 2021)

Breastfeeding or lactation is the entire process from breastfeeding starting from breast milk (ASI) produced until the process of the baby sucking and swallowing breast milk (Sulymbona et al., 2021). The beginning of breastfeeding activities in the first hour or commonly called Early Breastfeeding Initiation (IMD) (Sarumi, 2022). One of the benefits of breastfeeding in the short term is post-pregnancy and postpartum recovery (Duhita et al., 2023). In the process of breastfeeding, there are two hormones that influence, namely the hormone prolactin which plays a role in stimulating milk production and the hormone oxytocin which plays a role in the process of milk production (Sarumi, 2022).

Breast Milk (ASI) is an emulsion of fat in a solution of protein, lactose, and salts secreted by the two mother's breast glands as the baby's main food (Dompas, 2021). Breast milk contains more than 200 basic elements between carbohydrates, fats, vitamins, antibodies, growth hormones and enzymes (Fariszki, 2020). Breast milk is divided into three according to the time of release, namely colostrum, transitional breast milk and mature breast milk (matur) (Satryawan & Astuti, 2023). There are many factors that can affect milk production both from maternal factors and from the baby itself, including the mother's physical condition and the baby's suction factor (P. A. Lestari, 2018)

The Indonesian Pediatrician Association (2016) states that, the 24-hour postpartum period is a very important period for mothers to start the breastfeeding process because it will determine the success of the next breastfeeding process. Although the amount of milk that comes out in the first 24 hours is still small or not out at all, the baby is still recommended to be attached and sucked into the mother's breast to stimulate milk production. Because in the first hours of birth, the hormone oxytocin responsible for milk production increases (Indonesian Pediatrician Association, 2016).

According to data from the World Health Organization (WHO), in 2019 there were 41% of babies receiving exclusive breastfeeding in the world aged less than 6 months (World Health Organization, 2019) and in 2020 globally around 44% of babies aged 0-6 months who received exclusive breastfeeding (WHO, 2020). A study conducted in India in 2020 showed that the percentage of exclusive breastfeeding was around 50% and the percentage of Early Breastfeeding Initiation (IMD) was 41.6%, and the rate of breastfeeding in the first 24 hours of birth was 33% (Muhammed et al., 2020).

According to Basic Health Research (RISKESDAS), nationally the proportion of babies who were breastfed in the first 24 hours of birth in 2018 was 77.1%. 28.4% were breastfeeding done before 1 hour of birth and 48.7% were done at 1 hour to 24 hours of birth. For North Kalimantan province, the percentage of breastfeeding in the first 24 hours is 87.7% with breastfeeding before 1 hour at 32.6%, and breastfeeding at 1 hour to 24 hours of birth is 56.1% (National Riskesdas 2018 Report, 2018).

The Ministry of Health targets to increase the target of implementing exclusive breastfeeding by 80%. However, exclusive breastfeeding in Indonesia is actually still low at 74.5% (Balitbangkes, 2019). Nationally, the coverage of exclusively breastfed infants in 2021 was 56.9%, down from the previous year's coverage figure of 77.06% (Indonesia, 2021). The percentage of exclusive breastfeeding of North Kalimantan Province is 49.1%, and Tana Tidung Regency is 50% in 2021, still far from the target targeted by the government, which is 80% (Performance Report of the North Kalimantan Provincial Health Office 2021).

The low coverage of exclusive breastfeeding is influenced by the low coverage of breastfeeding in the first 24 hours of birth including Early Initiation of Breastfeeding (IMD), due to the practice of feeding other than breast milk or prelacteal food on the first day to the third day, which eventually causes a reduced opportunity for the baby to get colostrum, and interferes with milk production as early as possible. (Purwanti et al., 2022). Another factor that can inhibit milk production is the mother's physical factor, one of the most common complaints experienced in postpartum mothers is fatigue (Oktafia & Deviana, 2021a).

Postpartum fatigue is a very common complaint among postpartum women. Troy (2003) in (Hsieh et al., 2018) explained the causes of postpartum fatigue which include physical factors such as length of labor, type of labor, wound healing/episiotomy, pain, and breastfeeding. The fatigue felt by mothers during breastfeeding

decreases milk production during the first month (Ardhiyanti & Rosita, 2021a). In another study, it was also mentioned that fatigue is the most high-risk factor in reducing motivation in breastfeeding and the quality of life of postpartum mothers (Sandika, Agus Hari; Utami, Tun; Hanitah, 2022) and postpartum fatigue are among the most frequently cited reasons for early weaning in breastfeeding (Fata & Atan, 2018). One of the factors that influence motivation in breastfeeding is the reinforcing factors consisting of motivation and behavior of community leaders, religious leaders, health workers, support from local governments and family/husband support, (Boediarsih et al., 2021a).

According to Haryono & Setianingsih in (Boediarsih et al., 2021a), support is obtained by mothers from two parties, namely families and health workers. But the biggest influence of support is family support, especially from husbands. This is because the husband is the nuclear family and the closest person to the mother. The support provided by husbands to mothers has a positive impact on the mother's experience in breastfeeding, the amount of milk produced by the mother, the duration of breastfeeding, and influences the mother's choice in breastfeeding (Silaen et al., 2022a). Father's attitude predicts the mother's intention to breastfeed in addition to the mother's own attitude (Rempel et al., 2017). But in reality, the husband's support in the practice of breastfeeding is still minimal, one of which is because culturally there is a division of roles, where the husband acts as the breadwinner and household affairs are all taken care of by the wife (Bakri et al., 2019).

In previous studies, it has been shown that factors that cause fatigue are influenced by psychological and physiological anxiety such as the breastfeeding process and situations such as fussy babies and difficulty sleeping will affect the low level of motivation in breastfeeding (Sandika, Agus Hari; Utami, Tun; Hanitah, 2022). The results of the study (Oktafia & Deviana, 2021a) showed that the relationship between postpartum maternal fatigue and breastfeeding motivation with the Spearman Rho statistical test showed that there was a significant relationship between postpartum fatigue and breastfeeding motivation with a p value of 0.001 ( $p < 0.05$ ).

In addition to fatigue, another factor that affects maternal motivation in breastfeeding (breastfeeding) is the support of the husband or breastfeeding father. Breastfeeding Father is the full support of a husband as a father to his wife in order to succeed in the breastfeeding process (Boediarsih et al., 2021a). Proper support from fathers can help

mothers to rest more, feel comfortable and concentrate more in breastfeeding their babies, thereby increasing the duration and overall exclusivity of breastfeeding (Ouyang & Nasrin, 2021)

A preliminary study conducted in August 2023 in the Postpartum Room of RSUD Akhmad Berahim on 18 postpartum mothers by conducting short interviews about the motivation for breastfeeding in the first 24 hours of birth. The short interview was conducted by asking questions that broadly represent the statements on the Postpartum Fatigue Scale (PFS) questionnaire, the husband support questionnaire and the Breastfeeding Motivational Instructional Measurement Scale (BMIMS). From the interview results, it was found that there were 12 respondents who said they were still weak, tired and lazy to do activities, and 6 other respondents said they still wanted to do light activities. From the husband support questionnaire, 14 respondents said the husband always helped and supported the mother, including helping breastfeeding both emotionally and financially, and 4 respondents said sometimes helped by the husband. Meanwhile, from the breastfeeding motivation questionnaire, it was found that 10 mothers still had low motivation / encouragement to breastfeed for various reasons such as still tired, breast milk has not come out and others, while 8 respondents with sufficient breastfeeding motivation.

The reason researchers conducted research at RSUD Akhmad Berahim is because this hospital is the only hospital in Tana Tidung Regency and provides 24-hour delivery services, and is a referral hospital. In addition, the highest number of deliveries is also in this hospital.

Based on these data, researchers are interested in proving the relationship between maternal fatigue and husband support for maternal motivation in giving 24-hour breastfeeding to postpartum mothers

## RESEARCH METHODS

Type of quantitative research with analytical survey method method with cross sectional approach. The population of all postpartum mothers during the treatment period in November-December 2023 is 43 people. The sample used 43 respondents with total sampling technique. The research was conducted at RSUD Akhmad Berahim. The instrument used PFS (Postpartum Fatigue Scale) questionnaire and BMIMS (Breastfeeding Motivational Instructional Measurement Scale) questionnaire. Analysis of univariate and bivariate data (t-test).

## RESEARCH RESULTS

### Univariate Analysis

Based on table 1 above, the distribution of respondents based on age found that most respondents aged 20-35 years, namely 29 people (69%), while at the age of >35 years amounted to 7 people (16.7%). In the distribution based on education, the level of elementary and junior high school education has the same number and percentage of 14 people (33.3%), and at the high school level 11 people (26.2%). Almost all respondents were IRTs, namely 36 people (85.7%).

**Table 1**  
**Characteristics of Respondents at RSUD**  
**Akhmad Berahim**

Characteristics Respondents	Frequency	Percentage (%)
<20 years	6	14,3
20-35 years	29	69,0
>35 years	7	16,7
Education		
Primary School	14	33,3
Junior High School	14	33,3
Senior High school	11	26,2
College	3	3
Work		
Housewives	36	85,7
Civil servants	1	2,4
Honorary	4	9,5
Entrepreneurial	1	2,4

Table 2 shows the distribution of variables measured based on postpartum maternal fatigue. Postpartum maternal fatigue was mostly at moderate fatigue level of 28 people (66.7%). Table 3 shows the distribution of variables measured based on husband's support for postpartum mothers. Most maternal respondents received husband support in the medium category, namely 27 people (64.3%), less support category 9 people (21.4%), and those who received support in the good category 6 people (14.3%).

**Table 2**  
**Fatigue Variable Distribution**

Fatigue Level	Frequency	Percentage (%)
Light	8	19
Medium	28	66,7
Severe	6	14,3

**Table 3**  
**Variable Distribution of Husband Support**

Husband's level of support	Frekuensi	Percentage (%)
Less	9	21,4
Enough	27	64,3
Well	6	14,3

**Table 4**  
**Distribution of Motivational Variables of Breastfeeding**

Mother's motivation	Frequency	Percentage (%)
Low	7	16,7
Medium	26	61,9
High	9	21,4

Table 4 shows the distribution of variables measured based on maternal motivation in breastfeeding in the first 24 hours postpartum. Of the 42 respondents, it was found that 26 people (61.9%) had motivation for breastfeeding in the medium category, 7 respondents (16.7%) with low motivation, and 9 respondents (21.4%) with high motivation

### Bivariate Analysis

Table 5 shows that the relationship between postpartum maternal fatigue and breastfeeding motivation in the first 24 hours postpartum. Respondents with moderate fatigue tended to have moderate motivation in the 19 people (45.2%). Respondents with heavy fatigue 6 people, 2 respondents (4.8%) had moderate motivation and 4 people (9.52%) had high motivation.

The results of the analysis with the Spearman's Rho correlation test obtained a P Value of 0.001 (<0.05) which showed that there was a significant relationship between fatigue experienced by mothers and the motivation to breastfeed in the first 24 hours postpartum. From the SPSS output, a correlation coefficient value of 0.477 was obtained, meaning that the level of strength of the relationship between the fatigue variable and postpartum maternal motivation was a fairly strong correlation.

**Table 5**  
**Distribution of Fatigue to Motivation for Breastfeeding the first 24 hours postpartum**

Mother's Fatigue Postpartum	Motivation for breastfeeding 24 hours postpartum								Analysis Results with Spearman Rho
	Light		Medium		High		Total		
	Σ	%	Σ	%	Σ	%	Σ	%	
Light	3	7,1	5	11,9	0	0	8	19	Koefisien korelasi = 0,477  P value = 0,001
Medium	4	9,5	19	45,2	5	11,9	28	66,7	
High	0	0	2	4,8	4	9,52	6	14,3	

**Table 6**  
**Distribution of Husband's Support for Breastfeeding Motivation The first 24 hours postpartum**

Husband Support	Motivation for breastfeeding 24 hours postpartum								Results of analysis with Spearman Rho
	Light		Medium		High		Total		
	Σ	%	Σ	%	Σ	%	Σ	%	
Less	4	9,5	5	11,9	0	0	9	21,4	Koefisien korelasi = 0,467 P value = 0,002
Enough	3	7,1	18	42,7	6	14,3	27	64,3	
Good	0	0	3	7,1	3	7,1	6	14,3	

Based on table 6 above, of the 42 respondents studied, respondents who received less husband support were 9 people, 4 respondents (9.5%) with low motivation and 5 people (11.9%) with moderate motivation. While respondents who received enough husband support 27 people (64.3%) tended to have moderate motivation, namely 18 people (42.7%).

The results of the analysis on the variable of husband support with the motivation to breastfeed in 24 hours found that there was a significant relationship between the two variables, with a p value

of 0.002 ( $<0.05$ ), and a correlation coefficient of 0.467 which showed the strength of the relationship between the two variables was in the category of quite strong. The direction of the correlation relationship in this study is a positive correlation.

#### Multivariate Analysis

Based on table 7, the results of the analysis showed that the variables of fatigue and husband support together had a relationship with the motivation for breastfeeding in the first 24 hours with a p value of 0.014 ( $<0.05$ ).

**Table 7**  
**Ordinal Logistic Regression of Fatigue and Husband's Support for Breastfeeding Motivation**

	Estimate	Std Error	Wald	df	Sig	95% Confidence Interval	
						Lower Bound	Upper bound
Mother's motivation	-6,264	1,664	14,174	1	0,000	-9,525	-3,003
Y=2	-2,164	1,307	2,743	1	0,098	-4,725	0,397
Fatigue	-3,307	1,348	6,022	1	<b>0,014</b>	-5,949	-0,666
X1=2	-2,433	1,067	5,196	1	0,023	-4,534	-0,341
X1=3	0			0			
Support Husband	-3,255	1,320	6,082	1	<b>0,014</b>	-5,841	-0,688
X2=2	-1,655	1,039	2,540	1	0,111	-3,691	0,380
X2=3	0			0			

## DISCUSSIONS

### Univariate Analysis

#### Characteristics of respondents

##### 1. Age

Based on frequency distribution, the majority of respondents were in the age range of 20-35 years, namely 29 people (69%), <20 years old, 6 respondents (14.3%), and 7 respondents (16.7%) with the age of >35 years.

The age of 20-35 years is a healthy and mature reproductive age so that it can be very supportive for breastfeeding, while the age of 35 years even though it has a baby with good nutritional status but at that age is considered dangerous, because both the reproductive organs and the mother's physique have been much reduced and decreased, besides that there can be congenital risks to the baby and can also increase difficulties in pregnancy, childbirth, and puerperium (Assriyah et al., 2020).

##### 2. Education

Based on education level, respondents with junior high and high school education levels each had 14 respondents (33.3%). The mother's education level is an important factor to support the success of breast milk in infants. The higher a person's level of education, the easier he is to receive information so that the better his knowledge about breastfeeding (P. A. Lestari, 2018).

Lack of maternal knowledge about breastfeeding will cause the failure of breastfeeding because mothers do not have the motivation to breastfeed their babies and vice versa good maternal knowledge will lead to success in exclusive breastfeeding so that mothers are motivated to provide exclusive breastfeeding to their babies (Polwandari et al., 2021)

##### 3. Work

According to occupation, 36 respondents (85.7%) were IRTs. Employment status is a type of position of a person in carrying out an activity or job in accordance with his capacity and expertise (Made et al., n.d.). According to Conita (2014) in (Rosiana Ulfah et al., 2020) mother's work is closely related to the success of breastfeeding. Meanwhile, according to Hartini in (Rosiana Ulfah et al., 2020), said that IRT has a greater opportunity in breastfeeding because it has more time with its baby.

Working women have a heavier burden than a man, because before the mother does her job, the mother first takes care of household affairs such as her husband and children. However, it is not uncommon for people to prioritize other tasks that are

considered more important than exclusive breastfeeding. Another reason that is most often stated when not breastfeeding is because they have to work, especially during childbearing age, working mothers do not breastfeed their babies due to the lack of time the mother is at home with her baby and the mother's time is spent outside the home to work, so it is always a problem to find ways to care for the baby especially in exclusive breastfeeding (Fahira, 2021).

#### Postpartum Fatigue

The results showed that most respondents experienced moderate fatigue, namely as many as 28 respondents (66.7%), while 8 (19%) respondents experienced mild fatigue and 6 respondents (14.3%) with the light category.

Postpartum fatigue begins soon after childbirth and may become progressively worse due to excessive negative fatigue and subjective feelings of distress. Postpartum fatigue may be caused by the application and adjustment of a new mother to the roles and functions of her new family (Hsieh et al., 2018).

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#### Husband Support

Most maternal respondents received husband support in the sufficient category, namely 27 people (64.3%), less support category 9 people (21.4%), and those who received support in the good category 6 people (14.3%).

Husband support is a very important support for a wife in every way because the husband is a person who is in constant contact with mother and child every day, which exerts a lot of influence both intentional and unintentional. Mothers who get support from their husbands will be able to continue breastfeeding their babies (Oktaviani, 2023)

Husband support plays a major role in the success of mothers to provide exclusive breastfeeding. The greater the support provided by the husband, the greater the chances of the mother to breastfeed her baby. This will affect the smooth

reflex of breast milk expenditure, because it is influenced by the mother's feelings and emotions (Batlajery et al., 2023). Husband support is needed for calmness, tranquility, and comfort of breastfeeding mothers who can increase the production of the hormone oxytocin so as to increase breastfeeding in children. Mothers breastfeed because they believe breast milk is healthier for babies (Boediarsih et al., 2021b).

### Motivation for breastfeeding

Based on table 4 shows from 42 respondents it was found that 26 people (61.9%) had motivation for breastfeeding in the medium category, 7 respondents (16.7%) with low motivation, and 9 respondents (21.4%) with high motivation.

Motivation is the result of a collection of internal and external forces that cause people to choose the path to act accordingly and use certain behaviors (Anggraini, 2020b)

Maternal motivation in breastfeeding is very necessary in breastfeeding so that it affects the smoothness of breastfeeding so that it greatly affects the growth and development of the baby and the health of the mother after giving birth. The breastfeeding process immediately after childbirth can help uterine contractions thereby reducing maternal blood loss during the puerperium (Simamora et al., 2021)

### Bivariate Analysis

The Relationship of Maternal Fatigue to the Motivation of Breastfeeding in the First 24 Hours in Postpartum Mothers

Table 5 shows the relationship between postpartum maternal fatigue and breastfeeding motivation in the first 24 hours postpartum. Respondents with moderate fatigue tend to have motivation in the moderate category of 19 people (45.2%), 4 people (9.5%) with low motivation and 5 people (11.9%) with high motivation. Respondents with severe fatigue consisted of 6 people (14.3%), 2 respondents (4.8%) had moderate motivation and 4 people (9.52%) had high motivation.

The fatigue experienced by postpartum mothers has a considerable relationship with the motivation to breastfeed in the first 24 hours of birth. This is in line with research (Hsieh et al., 2018) which says that fatigue can interfere with interpersonal relationships, make it difficult to continue babysitting activities, reduce the comfort of new mothers, reduce the quality of life of mothers, affect milk production, and reduce the quality of life of new mothers, motivation and and success of breastfeeding. In another study, it was also stated that fatigue is the

most high-risk factor in reducing motivation in breastfeeding and the quality of life of postpartum mothers (Sandika et al., 2022)

This study is in line with (Ardhiyanti & Rosita, 2021) The results of the analysis with the Spearman's Rho correlation statistical test show that the fatigue experienced by postpartum mothers with motivation in exclusive breastfeeding for breastfeeding mothers  $\leq \alpha$  which means that there is a significant relationship between postpartum maternal fatigue and exclusive breastfeeding motivation at BPS Lilis Suryawati Jombang at a 99% confidence level, This means that the fatigue experienced by postpartum mothers has a sufficient relationship with the motivation to breastfeed. Some studies have shown a link between breastfeeding and fatigue, while other studies state that fatigue shows a relationship between breastfeeding and fatigue (Fata & ŞÜ Atan, 2018).

Fatigue that is prone to occur in the postpartum period is caused by the labor process that releases a lot of energy, infection, lack of rest in daily life, pressure to be able to do all activities, nighttime sleep disorders, anemia, and stress due to a new role (Viantika et al., 2018). In another study, it was also mentioned that postpartum fatigue can have a negative impact on milk production, mother-baby bonding and interaction, thereby slowing down the baby's development (Okafia & Deviana, 2021b). Although postpartum fatigue is a common experience, parents often feel unprepared for the effects of fatigue experienced (Azlina, 2021).

According to the researchers' assumptions, postpartum mothers experiencing fatigue easily can cause uncomfortable feelings so lazy to breastfeed their babies who eventually prefer formula milk because it is more practical. Postpartum fatigue can also make milk production decrease in the first month postpartum. In addition, postpartum fatigue can also affect the quality of life for mothers so that it can have an impact on other health problems. Fatigue that continues and is not handled properly can be the cause of early weaning.

The Relationship of Husband Support to the Motivation of Breastfeeding the First 24 Hours in Postpartum Mothers

The relationship between husband support and motivation to breastfeed has a degree of relationship in the moderately category. Respondents who received less husband support were 9 people, 4 respondents (9.5%) with low motivation and 5 people (11.9%) with moderate motivation. While respondents who received enough



husband support 27 people (64.3%) tended to have moderate motivation, namely 18 people (42.7%).

Support is an effort given to others, both moral and material to motivate the person in carrying out activities, as well as husband support in motivating mothers to breastfeed as early as possible to babies to increase maternal enthusiasm in breastfeeding (Simamora et al., 2021)

This study is in line with research conducted by (Batlajery et al., 2023b) showing a p value of 0.037 which is smaller than the meaning value of p 0.05, meaning that there is a positive and significant relationship between husband support and breastfeeding motivation.

According to research (Boediarsih et al., 2021b), it was found that the p value of Continuity Correction was  $0.001 < 0.05$ , so there is a relationship between husband support for exclusive breastfeeding for breastfeeding mothers. A husband has an important role in the success of breastfeeding mothers. The role of the husband influences the feelings and enthusiasm of the mother to breastfeed and to continue to provide the best for her child. The breastfeeding process can be hampered if the relationship between father and mother is not harmonious and the mother does not get the support of her husband.

Research by (Purbasary, 2022) obtained p value = 0.000. P value  $< 0.05$  so that there is a relationship between husband support and exclusive breastfeeding in the Working Area of the KiajaranWetan Health Center

According to the assumption of researchers, mothers want to give breast milk cannot be separated from the support of the husband who will always provide support to the mother to breastfeed, there is communication between mother and husband so that the opportunity for breastfeeding problems, the husband provides extra budget during breastfeeding to buy nutritious food so that breast milk runs smoothly, the husband takes care and pays attention to the needs of the wife, the wife also feels needed and feels proud of herself so that the mother is more motivated to breastfeed the baby so that the baby's nutrition is fulfilled.

### Multivariate Analysis

Based on table 7 of the results of the analysis with ordinal logistic regression, the variables of fatigue and husband support have the same level of significance, which means that the variables of fatigue and husband support together have a relationship with the motivation of breastfeeding in the first 24 hours with a p value of 0.014 ( $< 0.05$ ).

Postpartum fatigue can result from the implementation and adjustment of the mother to new roles and family functions. Studies have shown that high levels of fatigue in mothers cause stress in parents, feelings of inadequacy and dissatisfaction, high irritability, and hopelessness, as well as impaired parent-infant communication. In addition, postpartum fatigue is one of the most frequently cited reasons for early weaning in breastfeeding. Several studies have shown a link between breastfeeding and perceived fatigue (Fata & ŞÜ Atan, 2018)

This study is in line with (Sandika et al., 2022) which says that postpartum mothers who experience mild fatigue will positively affect the success of breastfeeding, where the factors that cause are influenced by psychological and physiological anxiety such as the breastfeeding process and situations such as fussy babies and difficulty sleeping will affect the low level of motivation in breastfeeding.

One of the factors that affect breastfeeding is a supporting factor. The supporting factors themselves consist of family support and support from health workers. Support factors from the family including husband, parents or other siblings determine the success of breastfeeding. Because the influence of the family has an impact on the mother's emotional state so that it indirectly affects milk production. A mother who gets support from her husband and other family members will increase breastfeeding to her baby (Wulandari, Setyo Retno; Winarsih, 2023b)

This research is in line with research conducted by (Lauda, 2021) Maternal motivation in exclusive breastfeeding can succeed with encouragement from husbands to breastfeeding mothers to breastfeed babies. A husband who understands and understands how the benefits of breast milk will always help mothers take care of the baby, including changing diapers, bathing the baby and giving massage to the baby. While mothers try to focus on improving the quality of their breast milk by consuming balanced nutritious foods and carrying out a healthy lifestyle.

### CONCLUSION

The results showed that the majority of fatigue experienced by mothers after childbirth was fatigue in the moderate category, caused by the new labor process and adaptation to the new role as parents. Husband support in the form of moral and material is considered to be quite good, with moral support having an important impact on the emotional condition of the mother. The motivation for breastfeeding in the first 24 hours postpartum is mostly in the moderate category, influenced by

postpartum physical fatigue and husband support. There was a considerable correlation between fatigue and husband support and motivation to breastfeed in the first 24 hours, with significance values indicating a relationship between the two variables

## SUGGESTION

### For Postpartum Mother

It is hoped that postpartum mothers can manage their feelings of fatigue well so that they do not continue which will later affect the breastfeeding process. Husband support is expected to be improved both morally, especially materially.

### For Midwives in Hospitals

The results of this study can be used as a method of novelty and innovation in midwifery, making educational media to increase knowledge about fatigue and husband support in the breastfeeding process at RSUD Akhmad Berahim

### For Educational Institutions

It is hoped that the results of this research will be a source of reference in the development of midwifery science to improve the quality of midwifery care delivery, especially in midwifery services

### For the Next Researcher

Can conduct similar research with a larger number of respondents and it is hoped that the results of this study can be used as a reference to develop this research

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EFFECT OF USE OF AROMATHERAPY AND MUROTAL THERAPY  
IN MOTHER'S PARTING WITH ANXIETY

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**ABSTRAK: PENGARUH PENGGUNAAN AROMATERAPI DAN TERAPI MUROTAL PADA IBU BERSALIN DENGAN KECEMASAN**

Latar Belakang: Kecemasan adalah perasaan takut yang tidak jelas dan tidak didukung oleh situasi. Individu yang merasa cemas akan merasa tidak nyaman atau takut, namun tidak mengetahui alasan kondisi tersebut terjadi. Kecemasan tidak memiliki stimulus yang jelas yang dapat diidentifikasi. Terapi murottal dapat mempercepat penyembuhan dan mengurangi kecemasan, mendengarkan ayat suci Al-Quran memiliki pengaruh yang signifikan dalam menurunkan ketegangan urat saraf reflektif. aroma yang di rekomendasikan dalam memediasi kecemasan adalah aromatherapy berbasis minyak esensial lemon (Citrus limon)

Tujuan: Mengetahui Faktor Yang Mempengaruhi Efektivitas Terapi Murottal Terhadap Tingkat Kecemasan Ibu Bersalin

Metode: Jenis penelitian ini menggunakan jenis penelitian kualitatif, dengan pendekatan coss sectional. Sampel dalam penelitian ini adalah ibu bersalin kala I berjumlah 30 orang. Penelitian ini menggunakan anaisis data chi square

Hasil: Berdasarkan distribusi frekuensi pengaruh penggunaan aromaterapi dan terapi murrotal pada ibu bersalin dengan kecemasan menunjukkan bahwa terdapat pengaruh penggunaan aromaterapi dan terapi murrotal terhadap ibu melahirkan dengan kecemasan

Kesimpulan: Berdasarkan hasil penelitian, factor yang mempengaruhi terapi *murottal* terhadap tingkat kecemasan ibu menjelang persalinan mempunyai efektifitas.

Saran: Terapi Murottal mempunyai efektifitas yang baik, harapannya terapi ini dapat meringankan dan menjadi solusi kecemasan yang dialami ibu baik pada masa kehamilan, persalinan, maupun nifas.

Kata Kunci: Kecemasan, Murottal Al-qur'an, Aromateraphi

**ABSTRACT**

Background: Anxiety is a feeling of fear that is unclear and not supported by the situation. Individuals who feel anxious will feel uncomfortable or afraid, but do not know the reason why this condition occurs. Anxiety has no clear, identifiable stimulus. Murottal therapy can speed up healing and reduce anxiety, listening to the holy verses of the Al-qur'an has a significant influence in reducing tension in the reflective nerves. The recommended aroma for mediating anxiety is aromatherapy based on lemon essential oil (Citrus limon)

Objective: To determine the effectiveness of Murottal therapy on the level of anxiety of women giving birth

Method: This type of research uses qualitative research, with a cross-sectional approach. The sample in this study was 30 mothers in the first stage of labor. This research uses chi square data analysis

Results: Based on the frequency distribution of the influence of the use of aromatherapy and murrotal therapy on mothers giving birth with anxiety, it shows that there is an influence of the use of aromatherapy and murrotal therapy on mothers giving birth with anxiety. Conclusion: Based on the research results, murottal therapy on maternal anxiety levels before giving birth is effective.

Suggestion: Murottal therapy has good effectiveness, it is hoped that this therapy can relieve and be a solution to the anxiety experienced by mothers during pregnancy, childbirth and postpartum.

Keywords: Anxiety, Murottal Al-Qur'an, Aromateraphy

**INTRODUCTION**

The success of the efforts made for maternal health can be seen, among other things, from the

indicator of the Maternal Mortality Rate (MMR). MMR is the number of maternal deaths during pregnancy, labor and delivery caused by pregnancy, childbirth

and postpartum or its treatment but not due to other causes such as accidents or falls per 100,000 live births. The results of the 2017 Indonesian Demographic and Health Survey show that the Maternal Mortality Rate in Indonesia is still quite high, namely 305 per 100,000 live births. (Kementerian Kesehatan RI 2018)

Based on data in the 2020 West Nusa Tenggara Province Health Profile, the main causes of maternal death in West Nusa Tenggara Province are bleeding (38 cases) and hypertension in pregnancy (31 cases) (Profil kesehatan NTB n.d.)

The results of the analysis show that listening to the murottal reading of the Qur'an via audio is an alternative that can calm and remind oneself, especially the special meaning of surah Ar-Rahman, namely the substance that gives blessings, Allah's blessings are without limits, one of which is the blessing of health so that From the results of this research, H1 was accepted which means "Audio Murottal Al-Qur'an Surah Ar-Rahman has an effect on the anxiety level of pre-operative patients in the Gili Trawangan Inpatient Room, NTB Provincial Hospital" (Nikmah, Ilham, and Supriatna 2022)

Anxiety is an emotional response to an assessment made on an individual which has a subjective nature, the anxiety felt by the patient is caused by various factors. Spiritual support is really needed in handling anxiety for each person or client according to their needs. Spiritual support has an influence in minimizing the occurrence of anxiety. According to research results, the influence of spiritual support is also able to reduce anxiety. (Wulandari and Rahmawati 2022)

Anxiety is a person's mental condition which is full of worry and fear about what may or may not happen. This condition is one of the maternal psychological disorders that occurs, including in pregnant women who are at high risk. Pregnant women will feel increasingly worried about their health and condition, mothers will feel afraid that the baby will be born at any time not in normal conditions and something will happen to the baby, they have also experienced a history of miscarriage so they will continue to experience feelings of fear of losing the baby and something happening to the pregnancy. (Nur Wasillah Ardilah, Widanarti Setyaningsih, and Sari Narulita 2019)

Apart from having an impact on the birthing process, anxiety in pregnant women can also affect the child's growth and development. Anxiety that occurs, especially in the third trimester, can result in decreased birth weight and increased HHA (Hypothalamic-Pituitary-Adrenal) activity which causes changes in steroid hormone production,

impaired social behavior and fertility rates in adulthood. In addition, anxiety during pregnancy is related to emotional problems, hyperactivity disorders, decentralization and impaired cognitive development in children (Shahhosseini et al. 2015)

In Indonesia, there are 107,000 (28.7%) pregnant women who experience anxiety when dealing with pregnancy. Anxiety in pregnant women can arise, especially in the third trimester of pregnancy until the time of delivery, during this period pregnant women feel anxious about various things such as whether the baby is born normally or not, the pain that will be felt, and so on (Usman, Kundre, and Onibala 2016)

Anxiety will have a negative impact on pregnant women from the time of pregnancy onwards childbirth, such as an anxious fetus that inhibits its growth, weakens uterine muscle contractions, etc. This impact can harm the mother and fetus. (Novitasari 2013)

Terapi murottal Al-quran dapat menurunkan kecemasan pada pasien pra operasi. Mendengarkan bacaan murottal Al-Qur'an melalui audio merupakan salah satu alternatif yang dapat menjadi penenang dan pengingat diri dalam menurunkan tingkat kecemasan. (Asrul 2023)

Almost all low risk pregnancies experienced mild levels of anxiety (88.9%), almost all high risk pregnancies (86.7%) experienced moderate levels of anxiety, while almost all very high risk pregnancies (66.7%) experienced severe levels of anxiety. The higher the pregnancy risk factors for pregnant women, the higher the mother's anxiety level. Research shows that the majority of pregnant women experience moderate anxiety due to the relationship between age, parity and traumatic experiences with the mother's anxiety level. It is normal for multigravida mothers to experience anxiety, where anxiety is anxiety about the image of the pain they suffered during childbirth. Especially for mothers who have experienced high-risk pregnancies, their anxiety levels will definitely increase. Where this pregnancy has a high risk both during pregnancy and during the birth process. There are also mothers who have experienced traumatic experiences and traumatic experiences have been proven to influence pregnant women's anxiety when facing childbirth (Saputri and Yudianti 2020)

According to research conducted by Melda Agustin, 2023, results found that there was an influence on postpartum mothers' anxiety levels before and after giving lemon aromatherapy (citrus limon). (Rahayu 2023)

Researchers found that Al-Quran murottal therapy can reduce anxiety in pre-operative patients,

this is in line with the theory which states that physically reading the Koran contains elements of the human voice, and the human voice is an extraordinary healing tool. Sound helps reduce stress hormones, activates natural endorphins, and creates a feeling of relaxation. It improves, focuses attention away from anxiety and tension, improves the body's chemical system to lower blood pressure, slows breathing, heart rate, pulse and brain wave activity. This deeper or slower breathing rate is great for calming the mind, controlling emotions, thinking deeper, and increasing metabolism. (Anggraini and Kanora 2019)

Murottal therapy, based on the results of several studies, including this study, has effective results in reducing anxiety levels in the third trimester of pregnancy for pregnant women. Third trimester pregnant women are advised to health service institutions to provide alternative therapy such as murottal therapy to help reduce the anxiety faced by pregnant and giving birth women. (Deswita 2013)

The results of the research carried out showed the effect of giving Murottal Al-Qur'an therapy to pre-operative Sectio Caesaria patients in reducing anxiety levels as evidenced by the results of statistical tests. The influence of the research results is proof that the anxiety experienced can be a solution and treatment for dealing with anxiety (Sulaiman and Amrullah 2019)

Social support and religiosity show significant results that influence the anxiety of people who live alone during the Covid-19 pandemic. Social support and religiosity can overcome anxiety in facing a pandemic. The results of this research make everyone able to survive and feel better and able to overcome the anxiety they experience. (Karim and Yoenanto 2021)

Murottal Al-Qur'an therapy can be recommended as an alternative therapy for students in overcoming anxiety in facing laboratory skills exams. This practice is considered effective in reducing and treating anxiety in preparation for carrying out laboratory skills exams in the world of education. (Rusdi, Hasneli, and Wahyuni 2020)

Murottal Al-Qur'an therapy has been proven to be effective in reducing anxiety in patients who experience anxiety. This can be seen from the client's condition where after being given Al-Qur'an murottal therapy the client appears calmer. Al-Qur'an murottal therapy can be used as a complementary therapy, to further improve the quality of services provided to patients who experience anxiety by providing therapy. murottal Al-Qur'an. (Sisy Rizkia Putri 2020)

The results showed that apart from psychotherapy, Islamic psychotherapy has also

begun to be used to reduce individual anxiety levels. Listening to Murottal Al-Qur'an is believed to be able to penetrate into the conscious mind and make feelings calmer. (Nugraha 2020)

Listening to the reading of the Al-Qur'an is a type of religious therapy, and one Distraction techniques used to overcome anxiety. Murottal al-Qur'an is musical instrument section. harmonization in the beautiful murottal of the Al-Qur'an will enter the ears and responded to by the right and left sides of the brain which will have an impact in the form of comfort and changes in taste are expected by listening to the reading of the Al-Qur'an causes a relaxation response in those who read it and those who listen to it. It can be concluded that Murottal Al-Qur'an therapy can be effectively applied to patients. (Putra, Dewy, and Junaidi 2021)

Anxiety - anxiety experienced by humans, especially pregnant women and mothers approaching childbirth, can actually find a solution to reduce the level of anxiety, this can be through therapeutic media, whether humor therapy, prayer therapy and also dzikir therapy. With this therapy, pregnant women can minimize and manage anxiety. (Rahman 2020)

Application of murottal therapy to preoperative patients to reduce anxiety. The results obtained were a decrease in anxiety levels. Implementation conclusion, Murottal therapy for preoperative patients can reduce anxiety levels, from moderate anxiety to mild anxiety to no anxiety. Murottal therapy for pre-operative Muslim patients uses verses from the Koran, namely Al-Fatihah, Ar-Rahman, Al-Ikhlas, Al-Falaq, and An-Naas, read by Muzammil Hasballah using an MP3 player and earphones. (Hapsari, Widyastuti, and Wardani 2019)

One effort to reduce the anxiety level of students who are writing their thesis is listening to Murottal Al-Quran.

To find out the effect of listening to Al-Quran murottals on the level of anxiety in writing a thesis in final year students. There is a significant effect of listening to the influence of complementary therapy by listening to murottal Al-Quran on anxiety levels in final year students who are writing their theses during the Covid-19 pandemic situation. (Karimah and Maulana 2023)

## RESEARCH METHODS

Method, Time and Place The type of research design used is quantitative research. This research uses a cross sectional approach, so this research will use a sample of 30

person. Power collection is carried out using an observation sheet. listening to murottal Al-Qur'an



and given aromatherapy in the intervention and control groups

The research was carried out in December-February 2024 at the Ampenan Mataram Community Health Center.

The subjects of this research were 30 mothers during the first stage of labor in the latent phase

The instrument used in this research was the recording of Ar-Rahman verses 1-10 to the mother before giving birth in the latent phase.

Data collection techniques, types and methods of data collection. This was done by listening to the Ar-Rahman letter verses 1-10 to

mothers before giving birth. 17 mothers in the intervention group and 13 were not given murrotal therapy. Likewise, lemon oil diffuser aromatherapy was given to the intervention group and the control group for 30 minutes

## RESEARCH RESULTS

Based on table 1, it shows that 14 people (46.6%) were in the control group who used aroma therapy and murrotal therapy, while 16 people (53.4%) were in the control group. The results of this study showed that more intervention groups were given both therapies.

**Tabel 1**

**Distribution of frequency of use of aromatherapy and murrotal therapy among mothers giving birth**

The use of aromatherapy and murrotal therapy in pregnant women	F (Frekuensi)	%
Not Given	14	46,6
Given	16	53,4

**Tabel 2**

**Distribution of frequency of Anxiety in Maternity Mothers**

Anxiety in Maternity Mothers	F (Frekuensi)	%
Heavy	0	0
Medium	6	20
Slight	11	36,7
Not Anxious	13	43,3

Based on table 2, it shows that 6 pregnant mothers were moderately anxious (20%), 11 people were mildly anxious (36.7%), and 13 mothers were not anxious (43.4%). These results show that the lowest number of mothers who experience moderate anxiety is 6, namely 20% during childbirth

**Table 3**

**Effect of using aromatherapy and murrotal therapy on women giving birth with anxiety**

The use of aromatherapy and murrotal therapy in pregnant women	Anxiety in Maternity Mothers						Total	p value
	Medium		Slight		Not Anxious			
	N	%	N	%	N	%		
Not Given	4	30,5	6	46,2	3	21,3	100	0,043
Given	2	11.8	5	29.4	10	58.8	100	

Based on table 3, it shows that the presentation of mothers in labor who experienced moderate anxiety and did not use aroma therapy and murrotal therapy was higher compared to the intervention group of mothers who experienced moderate anxiety and used aroma therapy and murrotal therapy. This result is in accordance with the chi square test at  $\alpha = 0.05$ , obtained p value = 0.043 so hypothesis 0 is rejected. From these results it can be concluded that there is an influence of the use of aromatherapy and murrotal therapy on women giving birth with anxiety at the Ampenan Community Health Center, Mataram District, West Nusa Tenggara.

## DISCUSSION

The results and discussion show that Islamic Psychotherapy is considered capable of being used as a very effective therapy for mental disorders in a client. The aim of psychotherapy itself is to improve the quality of human life both physically and psychologically, so that it can reduce high levels of anxiety to have a feeling of calm with the presence of God as the provider of healing. The therapy carried out is divided into several types of therapy, including worship-based therapy and moral-based therapy. Worship-based therapy includes dzikir, prayer, reading/understanding the Al-Qur'an, prayer,

fasting, zakat, and haji. Moral-based therapy is sincerity, pleasure, gratitude, qanaah, patience, forgiveness, husnudzon, tawakal, muhasabah, and contemplation. (Sumarni 2020)

Giving Lavender Aromatherapy to when Mrs "N" came with an opening of 4 cm with an initial pain score of 8 (severe pain), after given lavender aromatherapy during the labor process, the results were obtained pain score measurement with an average of 5 (mild pain), there was a decrease in the average pain measured by the NRS scale. Giving lavender aromatherapy to Mrs "N" was useful in reducing the feeling pain in the first stage of labor (Ria gustirini, Lilis Susanti, and Rezah Andriani 2023)

The results of the research show that systematic desensitization therapy with dhikr relaxation can reduce physical and psychological symptoms of anxiety resulting in a change in the subject's level of phobia, from severe phobia to moderate phobia and mild phobia. (Fitriani and Supradewi 2019)

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There is a significant effect of this treatment to reduce the level of anxiety in patients before surgery. Based on research results, it is recommended to use this type of treatment in an effort to reduce preoperative patient anxiety. Looking at the effects, we can conclude that it can reduce and be a solution in reducing anxiety in patients. (Hariyanto 2018)

Application of murottal therapy to preoperative patients to reduce anxiety, The results obtained were a decrease in anxiety levels. Implementation conclusion. Murottal therapy for preoperative patients can reduce anxiety levels, from moderate anxiety to mild anxiety to no anxiety. (Hapsari, Widyastuti, and Wardani 2019)

Research before the Q.s Ar-Rahman murottal therapy was carried out showed that 28 respondents (50.0%) were seriously anxious. There were 28 people (50.0%) who were very anxious and the results of the research after intervention or treatment using Q.s Ar-Rahman murottal audio therapy were 16 people (28.6%) who were moderately anxious. 35 people (62.5%) were seriously worried. Meanwhile, there were 5 people (8.9%) with very severe anxiety. It can be concluded that there is a difference in the anxiety of respondents before and after being given Q.s Ar-Rahman audio therapy. (Abdul and Yogik 2018)

Murottal therapy has an effect on reducing the pain scale in respondents. In this way, non-

pharmacological therapy such as murottal therapy can be applied because it has been proven to be able to reduce the pain that arises after the analgesic effect decreases and provides facilities and facilities that support the implementation of this therapy (Rantiyana, Florencia, and Suratun 2018)

This research is to find out Is there an effect of providing murottal Al-Qur'an therapy on the level Anxiety of hemodialysis patients at home. The study population was all patients undergoing hemodialysis at home numbering 43, and research sample as many as 30 respondents, research using the Hamilton Rating Scale for Anxiety (HRS-A). Analysis of result data. The research used the Independent t-test and Paired t-test. Conclusion. In this research, there is an influence of providing murottal Al-Qur'an therapy on the anxiety level of hemodialysis patients in hospitals. (Zahrofi 2018)

Abortion often occurs in pregnant women and brings many psychological changes, one of which is stress. In an effort to reduce stress levels in abortion patients, research was carried out by listening to murottal Al-Qur'an surah Ar-Rahman for 30 minutes. This research aims to determine the effect of murottal Al-Quran on stress levels in abortion patients. There is an influence of Al-Qur'an murottal therapy on stress levels in abortion patients. This means that providing murottal Al-Qur'an therapy is effective in reducing stress levels especially in abortion patients. (Hariyanto 2018)

Application of murottal therapy to preoperative patients to reduce anxiety. The results obtained were a decrease in anxiety levels. Implementation conclusion, Murottal therapy for preoperative patients can reduce anxiety levels, from moderate anxiety to mild anxiety to no anxiety. Murottal therapy for pre-operative Muslim patients uses verses from the Koran, namely Al-Fatihah, Ar-Rahman, Al-Ikhlâs, Al-Falaq, and An-Naas, read by Muzammil Hasballah using an MP3 player and earphones. (Hapsari, Widyastuti, and Wardani 2019)

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We found a significant post-intervention improvement in reducing anxiety for participants who received murottal Al-Qur'an therapy compared to all control groups. These results indicate that murottal Al-Qur'an therapy can be used as an alternative treatment to reduce anxiety of patients who

experience anxiety disorders and nurses are expected to participate in this treatment training (Suryana 2013)

## CONCLUSION

Based on table 1, it shows that 14 people (46.6%) were in the control group who used aroma therapy and murrotal therapy, while 16 people (53.4%) were in the control group. The results of this study showed that more intervention groups were given both therapies.

Based on table 2, it shows that 6 pregnant mothers were moderately anxious (20%), 11 people were mildly anxious (36.7%), and 13 mothers were not anxious (43.4%). These results show that the lowest number of mothers who experience moderate anxiety is 6, namely 20% during childbirth

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## SUGESTIONS

The use of aromatherapy and murrota Al-Qur'an therapy in patients with anxiety has an effect in reducing and overcoming anxiety. It is hoped that there will be further research to perfect and continue the usefulness of the results of this research in overcoming the problem of anxiety in birthing mothers..

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