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The Effect of Giving Dark Chocolate on Reducing Menstrual Pain in Primary Dysmenorrhoea in Employees of Cabangbungin General Hospital, Bekasi Regency in 2023

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A B S T R A C T

Background: Dark chocolate can be used as an alternative to overcome pain during menstruation time because it contains many benefits in the health sector. This study aimed to determine the effect of giving dark chocolate on reducing dysmenorrhea menstrual pain in female employees of the Cabangbungin General Hospital, Bekasi Regency, in 2023. **Methods:** This study was an experimental study of 32 research subjects. Data analysis was carried out univariate and bivariate using SPSS version 25. **Results:** Statistical test results used test paired sample t-test obtained p value = 0.000, with a value of $\alpha = 0.05$ ($p < \alpha$), indicating that there is an effect of giving dark chocolate to reducing dysmenorrhea menstrual pain. **Conclusion:** There was an effect of giving dark chocolate to reducing dysmenorrhea menstrual pain in female employees of the Cabangbungin General Hospital, Bekasi Regency, in 2023.

1. Introduction

Menstruation is the periodic release of blood and body cells from the vagina that originate from the uterine wall of a woman. However, menstruation experienced by teenage women can cause problems, one of which is dysmenorrhea or menstrual pain. Dysmenorrhea is a complaint of pain during menstruation, and pain is usually felt pressing down, aches, or cramps in the lower abdomen and pelvis. Dysmenorrhea often begins after experiencing the first menstruation. Pain decreases after menstruation, but pain can continue to be experienced during menstrual periods in some women, so that it has an impact on daily activities. Primary dysmenorrhea occurs due to the excessive release of prostaglandins, causing the

uterus to contract excessively, causing arteriolar vasospasm. Pain or dysmenorrhea is excruciating for women. Stabbing pains, severe pain around the bottom, and sometimes even difficulty walking are often experienced when menstruation strikes. Many women are forced to lie down because they suffer too much, so they can't do anything. Some faint, some feel nauseous, and some are right - really vomiting, so dysmenorrhea has an impact negative on the sufferer.¹⁻⁴

Dark chocolate can be used as an alternative to overcome pain during menstruation time because it contains many benefits in the health sector. Substances contained in chocolate are rich in vitamins A, B1, C, D, and vitamin E. In addition, chocolate also

contains phenol and flavonoid antioxidants, rich in minerals such as calcium, potassium, and iron. There is little omega 3 and omega 6, and high in magnesium. The direct effect of magnesium will be to put pressure on the blood vessels and will help regulate the influx of calcium into the smooth muscle cells in the body so that it can reduce pain during menstruation can affect contraction, stress, and relaxation of the smooth muscle of the uterus. Dark chocolate is believed to contain magnesium which is able to relax muscles and provide a sense of relaxation, which can control a gloomy mood. Where the magnesium content can stimulate the brain to synthesize collagen and neurotransmitters to release endorphins. Endorphin hormones are substances released by the body that function to inhibit pain impulses. Where the endorphin hormone will become a natural analgesic and natural sedative that can reduce the level of menstrual pain.⁵⁻⁹ This study aimed to determine the effect of giving dark chocolate on reducing dysmenorrhea menstrual pain in female employees of the Cabangbungin General Hospital, Bekasi Regency, in 2023.

2. Methods

This study was an experimental study with a one-group pretest-posttest design approach and used primary data obtained from interviews using a questionnaire assessment instrument for Menstrual pain in Cabangbungin General Hospital, Bekasi Regency. A total of 32 research subjects participated in this study, where the research subjects met the inclusion criteria. The inclusion criteria in this study were female employees of the Cabangbungin General Hospital who experienced primary dysmenorrhea and were willing to participate in this study, as evidenced by informed consent. This study was approved by the Medical and health research ethics committee. Data analysis was carried out using SPSS software version 25 in univariate and bivariate ways. Univariate analysis was performed to assess the frequency distribution of each variable test. Bivariate analysis

was carried out to assess the effect of the test variables with a p-value <0.05.

3. Results

Table 1 shows the characteristics of respondents based on age. Most of the respondents were aged > 33 years, as many as 17 people (55.1%). The characteristics of respondents were based on their level of education. Most of the respondents with higher education levels, namely undergraduates, 19 people (59.4%), The characteristics of the respondents based on the length of menstruation most of the respondents' length of menstruation, namely ≤ 7 days, were 26 people (81.2%). 4%), the characteristics of respondents based on the duration of dysmenorrhea pain were mostly respondents with pain duration > 1 hour as many as 18 people (56.2%), the characteristics of respondents based on dysmenorrhea pain before being given dark chocolate most of the respondents with moderate pain were 16 people (50, 0%) and the characteristics of respondents based on dysmenorrhoea pain after being given dark chocolate, the majority of respondents with mild pain were 25 people (78.1%). Table 2 shows the results of statistical tests using test paired sample t-test obtained ρ value = 0.000, with a value of $\alpha = 0.05$ ($\rho < \alpha$), indicating that there is an effect of giving dark chocolate on reducing dysmenorrhea menstrual pain in employees of the Cabangbungin General Hospital, Bekasi Regency, in 2023.

4. Discussion

The results of this study are in line with other studies, showing that the menstrual pain scale in primary dysmenorrhea felt by respondents before being given dark chocolate in the treatment group was an average pain scale of 5.7. Other research results show that most of the respondents before being given dark chocolate with moderate pain scale 31 people (70.5%). Dysmenorrhea is pain during menstruation that is felt in the lower abdomen and appears before, during, or after menstruation. Pain can be colicky or continuous.

Table 1. Characteristics of respondents for employees at the Cabangbungin General Hospital, Bekasi Regency, in 2023.

No	Characteristics of respondent	Frequency	Percentage (%)
1.	Age		
	≤ 33 years	15	46,9
	>33 years	17	53,1
2.	Level of education		
	Diploma	13	40,6
	Bachelor	19	59,4
3	Length of menstruation		
	≤7 days	26	81,2
	7 days	6	18,8
4	Age of menarche		
	Early menarche (<11 years)	8	25,0
	Menarche normal (11-13 years)	11	59,4
	Late menarche (>13 years)	5	15,6
5	Duration of dysmenorrhoea pain		
	≤ 1 hour	2	6,2
	> 1 hour	18	56,2
	≥ 24 hours	12	37,5
6	Dysmenorrhoea pain (Pretest)		
	Mild pain	4	12,5
	Moderate pain	16	50,0
	Severe pain	12	37,5
7	Dysmenorrhoea pain (Posttest)		
	No pain occurs	2	6,3
	Mild pain	25	78,1
	Moderate pain	5	15,6
	Total	32	100

Table 2. The effect of giving dark chocolate on reducing menstrual pain dysmenorrhea in employees of the Cabangbungin General Hospital in Bekasi Regency in 2023.

No	Variable	Mean	Standard deviation	Min-Max	p value
1	Menstrual pain dysmenorrhea before intervention	5,60	1,221	3-8	0,000
2	Menstrual pain dysmenorrhea after intervention	10,77	1,524	8-14	

Dysmenorrhea arises due to dysrhythmic contractions of the myometrial lining, which displays one or more symptoms ranging from mild to severe pain in the lower abdomen, buttocks, and medial side of the thighs. Primary dysmenorrhea occurs sometime after menarche, usually after 12 months or more, because the menstrual cycles in the first months after menarche are generally of the anovulatory type, which is not accompanied by pain. The pain occurs shortly before or with the onset of menstruation and lasts for several hours, although in some cases, it may last

several days. The nature of the pain is intermittent spasms, usually limited to the lower abdomen, but can spread to the waist and thighs. Along with pain, nausea, vomiting, headaches, diarrhea, irritability, and so on can be found.^{10,12}

One therapy that can be used as an alternative to dealing with pain during menstruation of which is consuming dark chocolate because it contains many benefits in the health sector. Substances contained in chocolate are rich in vitamins A, B1, C, D, and vitamin E. In addition, chocolate also contains phenol and

flavonoid antioxidants, rich in minerals such as calcium, potassium, and iron. There is a little omega 3, omega 6, and high magnesium. The direct effect of magnesium will be to put pressure on the blood vessels and will help regulate the entry of calcium into the smooth muscle cells in the body so that it can reduce pain during menstruation can affect contraction, stress, and relaxation of the smooth muscles of the uterus.¹³

5. Conclusion

There was an effect of giving dark chocolate to reducing dysmenorrhea menstrual pain in female employees of the Cabangbungin General Hospital, Bekasi Regency, in 2023.

6. References

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