

## The Effect Of Carrot Juice (*Daucus Carota L*) On Reduce The Degree Of Dysmenorrhea In Adolescent Women At State High School 1 Sampit, Kotawaringin Timur Regency

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### ABSTRACT

During menstruation women sometimes experience pain, the nature and level of pain varies, depending on each woman's pain threshold. Excessive pain during menstruation is called dysmenorrhea and one of the treatments for dysmenorrhea is non-pharmacological. The purpose of this study was to analyze the effect of Carrot Juice (*Daucus Carota L*) on reducing the degree of dysmenorrhea pain in adolescent women at State High School 1 Sampit, East Kotawaringin Regency. The research design used was a pre-experimental design method with a pretest-posttest design using a cross-sectional approach. The sample in this study were 46 respondents with purposive sampling. The results of bivariate analysis using the Wilcoxon Test Statistical test with  $\alpha$  0.05. From the results of the study it was found that the majority of respondents experienced controlled severe pain before being given carrot juice, namely as many as 28 respondents (60.9%), Almost all respondents experienced moderate pain after being given carrot juice, namely as many as 36 respondents (78.3%). The results of statistical tests using the Wilcoxon test showed that  $p$  value = 0.000  $<$   $\alpha$  (0.05), which means that  $H_0$  is rejected,  $H_1$  is accepted. means the effect of Carrot Juice (*Daucus Carota L*) on Reducing the Degree of Dysmenorrhea Pain in adolescent women at State High School 1 Sampit, East Kotawaringin Regency. Provision of carrot juice (*Daucus Carota L*) is effective for reducing the degree of dysmenorrhoea pain in young women, so it is expected that schools and health workers will provide socialization to overcome dysmenorrhoea pain with non-pharmacological alternatives, namely using carrot juice.

**Keywords:** Carrot Juice, Dysmenorrhea Pain, Adolescent Women

### INTRODUCTION

Dysmenorrhea is pain that accompanies menstruation so that it can interfere with daily work (Manuaba et al, 2015). Dysmenorrhea usually occurs at the age of 2 - 3 years after menarche, namely in early adolescence and reaches a maximum between the ages of 15 - 25 years. This pain, which resembles spasms, is felt in the lower abdomen, usually starting 24 hours before menstruation arrives and lasts until the first 12 hours. from the menstrual period, after that all the unpleasant feelings disappear (Jones, 2015). Dysmenorrhea is classified based on the presence or absence of abnormalities or observable causes, namely primary dysmenorrhea, secondary dysmenorrhea and membranous dysmenorrhea (Colin & Shushan, 2015).

The incidence of menstrual pain or dysmenorrhea in the world is very large. According to WHO data, in 2020, on average, more than 50% of women in every country experienced menstrual pain. The percentage figure in America is around 60% and in Sweden around 72%.

Meanwhile in Indonesia the figure is estimated to be 55% of women of reproductive age who are tormented by pain during menstruation. The incidence (prevalence) of menstrual pain ranges from 45 – 95% among women of reproductive age. According to Reeder, Martin, and Griffin (2015) as many as 50% of women experience dysmenorrhea without pelvic pathology, 10% experience severe pain to the point of being unable to carry out activities 1-3 days each month, and 25% experience absenteeism from school. The most common type of dysmenorrhea is primary dysmenorrhea, possibly more than 50% of women experience it and 10-15% of them experience severe pain that interferes with their daily activities and activities. Primary dysmenorrhea appears in adolescence, namely around 2-3 years after the first menstruation and occurs at the age of less than 20 years. (Melissa, 2017).

In Central Kalimantan Province, the number of reproductive adolescent girls aged 13-39 years is 174,774 people. Meanwhile, 27,720 people experienced dysmenorrhea and came to the obstetrics department (13.6%) (Kalimantan Tengah Provincial Health Service, 2021).

Based on health reports in East Kotawaringin Regency, in 2022 the number of reproductive adolescent girls aged 13-39 years will be 74,929 people. There were 7,532 young women who experienced dysmenorrhoea and came to the obstetrics department (10.1%). The absence of efforts to prevent menstrual pain has been known to be a contributing factor in the incidence of dysmenorrhoea. A study stated that as a result of dysmenorrhoea, 76.6% of female students were absent from school and research on female school students showed that dysmenorrhoea was also responsible for school absences as much as 13-51% of girls were absent at least once, 5-14% were repeatedly absent (Anugroho et al. 2022).

In a preliminary study conducted by researchers at State High School 1 Sampit, East Kotawaringin Regency by conducting interviews with 15 respondents, data was obtained that 7 respondents (46.7%) experienced moderate menstrual pain/dysmenorrhoea, 3 (20%) respondents experienced severe dysmenorrhoea and 5 (33.3%) respondents experienced mild dysmenorrhoea. Dysmenorrhea can be treated pharmacologically, namely by administering analgesic drugs. Non-pharmacologically through distraction, relaxation, guided imagination, warm or cold compresses (Potter & Perry, 2017). Several studies also mention the relationship between several nutrients and reduced levels of dysmenorrhea. A book written by Devi (2014) states that nutrients that can help relieve dysmenorrhea are calcium, magnesium and vitamins A, E, B6 and C. From research results from Novarita (2016) it is known that carrots contain more active compounds than vegetables. others such as kale and green beans which have the same content as carrots, namely: protein, carbohydrates, fat, fiber, natural sugars, pectin, glutatin, asparagine, geraniol, flavonoids, pinene, limonene and beta carotene. (Suojala, 2015).

## **METHOD**

The research design used is a pre-experimental research design. This research uses a one group pretest and posttest design, namely where this research is carried out by giving a pretest (initial observation) before giving the intervention. After the intervention is given, a posttest (final observation) is carried out. The population in this study were all female students with menstrual pain at State High School 1 Sampit, East Kotawaringin Regency in July 2023, totaling 50 children. The sample in this study were some female students with menstrual pain at State High School 1 Sampit, East Kotawaringin Regency in July 2023, totaling 46 children. This research sample collection used a purposive sampling technique, namely a technique for determining samples with certain considerations based on predetermined inclusion and exclusion criteria (Sugiyono, 2018).

## RESULTS

### General Data

#### 1. Characteristics of Respondents Based on Age of Respondents

Age	Frequency (f)	Percentage (%)
16 Years	10	21,7
17 Years	20	43,5
18 Years	16	34,8
Total	46	100

Based on table it shows that almost half of the respondents were 17 years old, namely 20 respondents (43.5%).

#### 2. Characteristics of Respondents Based on Age of Menarche

Age of Menarche	Frequency (f)	Percentage (%)
11 Years	9	19,5
12 Years	8	17,4
13 Years	24	52,2
14 Years	5	10,8
Total	46	100

Based on the table, it shows that the majority of respondents at menarche were 13 years old, namely 24 respondents (52.2%).

#### 3. Characteristics of Respondents Based on Menstrual Cycle

Menstrual Cycle	Frequency (f)	Percentage (%)
Regular	18	39,1
Irregular	28	60,9
Total	46	100

Based on table 4.3, it shows that the majority of respondents have irregular menstrual cycles, namely 28 respondents (60.9%).

#### 4. Characteristics of Respondents Based on Length Of Menstruation

Length of Menstruation	Frequency (f)	Percentage (%)
6 Days	11	23,9
7 Days	20	43,4
8 Days	6	13,1
9 Days	9	19,6
Total	46	100

Based on table 4.4, it shows that almost half of the respondents had a period of 7 days, namely 20 respondents (43.4%).

#### A. Special Data

##### 1. Distribution of Pretest Results for Degrees of Dysmenorrhea Pain (Before Giving Carrot Juice)

Degree Of Pain	Frequency (f)	Percentage (%)
Mail Pain	7	15,2
Moderate Pain	11	23,9
Severe Pain Controlled	28	60,9
Total	46	100

Based on the table, it shows that the majority of respondents experienced controlled severe pain before being given carrot juice, namely 28 respondents (60.9%).

2. Distribution of Posttest Results for Degrees of Dysmenorrhea Pain (After Giving Carrot Juice)

Degree Of Pain	Frequency (f)	Percentage (%)
Mild Pain	10	21,7
Moderate Pain	36	78,3
Severe Pain Controlled	0	0
Total	46	100

Based on the table, it shows that almost all respondents experienced moderate pain after being given carrot juice, namely 36 respondents (78.3%).

3. Statistical Test Results

Test Statistics <sup>a</sup>	
After_giving_juice - Before_giving_juice	
Z	-5.883 <sup>b</sup>
Asymp. Sig. (2-tailed)	.000

a. Wilcoxon Signed Ranks Test

b. Based on positive ranks

Based on the results of SPSS data analysis using the Wilcoxon statistical test with an error level of 5% (0.05), it was found that the p value of 0.000 was smaller than  $\alpha$  0.05 (0.000 <  $\alpha$  0.05), so H0 was rejected and H1 was accepted, which means there is an influence carrot juice (daucus carota l) on reducing the degree of dysmenorrhea pain in adolescent girls at State High School 1 Sampit, East Kotawaringin Regency.

## DISCUSSION

### Degree of Dysmenorrhea Pain Before Giving Carrot Juice

Based on the table it shows that the majority of respondents experienced controlled severe pain before being given carrot juice, namely 28 respondents (60.9%), 11 respondents experienced moderate pain (23.9%), and 7 respondents experienced mild pain (15.2%). Dysmenorrhea usually refers to pain when menstruation occurs with a spasmodic feeling and is concentrated in the lower abdomen. Painful symptoms can be mild to severe. The most common menstrual disorder is anterior pain, during or after menstruation. Pain occurs because prostaglandins cause the uterine muscle (womb) to contract (Damayanti et al. 2020).

Based on research results, the majority of respondents who experienced controlled severe pain were due to an excessive increase in the hormone progesterone, which caused excessive uterine contractions and caused smooth muscle contractions. dysmenorrhoea occurs, usually accompanied by complaints of nausea, vomiting and diarrhea. This will have an impact on daily activities, especially for young women who experience dysmenorrhea. Apart from that, it can be seen that the level of pain in each respondent has a different level because the pain felt by each respondent corresponds to the intensity of their respective pain. Indirectly, dysmenorrhea will interfere with activities to fulfill daily needs such as studying at school, even completing assignments, so that it can reduce learning achievement due to frequent absences. Apart from that, being too early at menarche is also one of the causes of dysmenorrhoea. This is in line with research from Novia (2018), that menarche at an earlier

age can increase the incidence of primary dysmenorrhea. If dysmenorrhea is not treated immediately, it can result in shock, decreased consciousness, and can become a social problem because the pain is unbearable.

#### Degree of Dysmenorrhea Pain After Giving Carrot Juice

Based on the table, it shows that almost all respondents after being given carrot juice experienced moderate pain, 18 people (78.3%), 5 respondents experienced mild pain (21.7%). Dysmenorrhea is a condition where abdominal pain occurs due to uterine contractions during menstruation. This pain usually appears at the beginning of menstruation and reaches its peak after a few hours or even days. Dysmenorrhea can be divided into two types, namely primary dysmenorrhea and secondary dysmenorrhea. Primary dysmenorrhea refers to menstrual pain that cannot be explained by the presence of certain pathological conditions. Meanwhile, secondary dysmenorrhea refers to menstrual pain associated with pathological conditions such as endometriosis or ovarian cysts (Larasati, T. A. & Alatas, 2016).

Dysmenorrhea can be treated pharmacologically, namely by administering analgesic drugs (Wilmana & Gan, 2015). Non-pharmacologically through distraction, relaxation, guided imagination, warm or cold compresses. Several studies also mention the relationship between several nutrients and reduced levels of dysmenorrhea. Nutrients that can help relieve dysmenorrhea are calcium, magnesium and vitamins A, E, B6 and C. According to Pohan (2015), carrots have a high vitamin content value of 12,000 SI. Meanwhile, the composition of other elements is calories (42 cal), protein (1.2g), fat (0.3g), charcoal hydrate (9.3g), calcium (39mg), phosphorus (37mg), iron (0.8mg). ) vitamin B1 (0.06mg), and vitamin C (6mg).

Based on the results of research conducted, the majority of respondents experienced a decrease in the degree of pain after being given carrot juice because carrot juice contained vitamin E which was the same as mefenamic acid and ibuprofen in reducing dysmenorrhoea pain so that respondents after being given carrot juice experienced a decrease in the degree of dysmenorrhoea pain. The method of administering carrot juice therapy in this study was 2 times a day in a row with pain scale monitoring every 4 hours. Making carrot juice is done by 250 grams of carrots and 150-250cc water. This carrot juice therapy has the effect of reducing the intensity of the dysmenorrhea pain scale. This is supported by research conducted by Hastuti et al., (2016) which found that giving carrot juice can reduce the intensity of dysmenorrhea pain to moderate levels and even to the point where the pain disappears. This is because every 100 grams of carrots contain beta carotene which can help reduce pain.

#### The Effect of Carrot Juice (*Daucus Carota L*) on Reducing the Degree of Dysmenorrhea Pain in Adolescent Women at State High School 1 Sampit, East Kotawaringin Regency

Based on table 4.7, it shows that before being given carrot juice, 28 respondents experienced controlled levels of severe pain and after being given carrot juice, 36 respondents experienced moderate pain. The results of the Wilcoxon statistical test with an error level of 5% (0.05) show that the p value of 0.000 is smaller than  $\alpha$  0.05 ( $0.000 < \alpha$  0.05), so  $H_0$  is rejected and  $H_1$  is accepted, which means there is an effect of carrot juice (*Daucus Carota L*) Towards Reducing the Degree of Dysmenorrhea Pain in Adolescent Women at State High School 1 Sampit, East Kotawaringin Regency.

The results of the research above are also supported by previous research conducted by Witha Handika (2018) entitled the effectiveness of carrot juice in reducing dysmenorrhoea pain in young women in the female student dormitory of Stikes Aisyiah Yogyakarta. The results obtained were p value =  $0.001 < \alpha$  0.05, which means there was a decrease, but the rate of decrease in the degree of dysmenorrhea was greater in the experimental group so that it was concluded that carrot juice could reduce dysmenorrhoea pain. among adolescent women in the Stikes Aisyiah Yogyakarta female student dormitory. Apart from that, from the results of experimental research by Hendra Albertus Widhianata (2017) regarding the analgesic effect of carrot root juice, it was found that carrot root juice has an analgesic effect. It has been proven

that carrot juice can reduce pain. The results of this research were also carried out by Puji Hastuti (2016) regarding the effect of giving carrot juice on various levels of dysmenorrhea pain in students. this feeling when drunk for 3 hours.

According to Winkjosastro (2017), primary dysmenorrhea is treated in two ways, namely pharmacologically by administering analgesic drugs, hormonal therapy, therapy with NSAIDs and non-pharmacologically. According to Kusmiran (2016), non-pharmacological therapy that can be done to reduce the pain of primary dysmenorrhoea is hot compresses, drinking warm drinks containing high levels of calcium and magnesium which function to increase blood circulation and tissue oxygenation so that they can prevent muscle stiffness and eliminate pain during menstruation. , light exercise and relaxation.

Based on research results, it is clear that the carrot plant contains active compounds, namely: protein, carbohydrates, fat, fiber, natural sugars, pectin, glutatin, asparagine, geraniol, flavonoids, pinene, limonene and beta carotene. Carotene gives carrots their characteristic orange color. The color of the tubers is reddish yellow, has very high levels of carotene A. Carrot tubers also contain vitamin B, Vitamin C and minerals. Carrots are also rich in vitamins A, B complex, C, D, E, K , and antioxidants.

Researchers assume that carrot juice contains vitamin E and beta-carotene, which have anti-inflammatory properties and can also relieve pain, help improve blood flow, regulate heavy bleeding and treat irregular menstruation. So it can be concluded that the use of carrot juice can provide alternative therapy to reduce the occurrence of dysmenorrhea. Therefore, it is hoped that health workers will collaborate with schools regarding providing health education or information about how to treat dysmenorrhoea pain with a non-pharmacological alternative, namely using carrot juice.

## CONCLUSIONS

Most of the respondents at State High School 1 Sampit, East Kotawaringin Regency experienced controlled severe pain before being given carrot juice, namely 28 respondents (60.9%). Almost all respondents at State High School 1 Sampit, East Kotawaringin Regency experienced moderate pain after being given carrot juice, namely 36 respondents (78.3%). There is an effect of carrot juice (*Daucus Carota L*) on reducing the degree of dysmenorrhea pain in adolescent women at State High School 1 Sampit, East Kotawaringin Regency with a P value  $< \alpha 0.05$  ( $0.000 < 0.05$ ).

Provision of carrot juice (*Daucus Carota L*) is effective for reducing the degree of dysmenorrhoea pain in young women, so it is expected that schools and health workers will provide socialization to overcome dysmenorrhoea pain with non-pharmacological alternatives, namely using carrot juice.

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