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## THE EFFECT OF GIVING CARROT JUICE ON DECREASING DEGREES OF DYSMENORRHEA IN ADOLESCENT WOMEN IN MIDDLE SCHOOL ISLAM AMANAH UMMAH MOJOLABAN

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### ABSTRACT

**Background :** During menstruation, most women in Indonesia and around the world often feel pain or cramps in the lower abdomen, which is often called dysmenorrhoea. The purpose of this study was to determine the effect of carrot juice to reduce the degree of dysmenorrhea in young women

**Method :** This type of research is pre-experiment with one group pre-test post-test design. The population used was all female students at Amanah Ummah Mojolaban Islamic Middle School with a total sample of 21 people who experienced dysmenorrhoea.

**Results :** Before being given the intervention, the majority of respondents experienced moderate pain, then after being given the intervention, the majority of respondents experienced a decrease in pain in mild pain

**Analysis :** The results of the analysis are known Sig.(2-tailed) value of  $0.000 < \alpha(0.05)$  which means that there is an effect of giving carrot juice to reduce the degree of dysmenorrhea in young women.

**Conclusion:** There is an effect of giving carrot juice to a decrease in the degree of dysmenorrhea in adolescent

**Keywords :** Carrot Juice, Dysmenorrhoea, Teenagers

## 1. INTRODUCTION

Menarche or menstruation is experienced for the first time by adolescents, generally aged around 10-15 years. However, this can occur earlier or later than the normal age. Every woman who has experienced menstruation indicates the maturity of her reproductive organs. During menstruation, most women experience pain or cramps in the lower abdomen, which is known as dysmenorrhea (Latifah, 2021). Dysmenorrhea is pain that appears during menstruation, which is usually characterized by lower abdominal cramps that radiate to the back.

Based on 2017 World Health Organization (WHO) data in the journal (Syafriani, Aprilla, and Zurrahmi, 2021) there are 1,769,425 souls (90%) of women who experience dysmenorrhea with a percentage of 10-16% experiencing severe dysmenorrhea. According to the Indonesian Ministry of Health, 2022. More than 50% of women in every country experience menstrual pain. The prevalence of dysmenorrhea in Indonesia is 107,673 people (64.25%) consisting of 54.89% (59,671 people) experiencing primary dysmenorrhea and 9.36% (9,496 people) experiencing secondary dysmenorrhea (Siti and Estira (2017), in the journal (Syamsuryanita and Ikawati, 2022).

The incidence of dysmenorrhea experienced by each individual will vary or vary, ranging from mild, moderate to severe pain levels. Someone who has severe dysmenorrhea can hinder their daily activities that they often do. During learning activities, students who experience dysmenorrhea will feel weak, unenthusiastic, and have trouble concentrating when thinking and are lazy to socialize. (Aldriana & Rohimi, 2021). In addition, someone who experiences dysmenorrhea can also cause nausea, vomiting, migraines, emotional instability, and some even faint if not treated properly.

Treatment of dysmenorrhea can be done in two ways, namely with drugs or pharmacology and also back to nature or non-pharmacology. Pharmacological therapy can be carried out by taking analgesic drugs such as paracetamol, mefenamic acid, panadol and other analgesic drugs. As for non-pharmacological methods, you can do massage, warm compresses, rest, light exercise and consume fruits and vegetables, one of which is

by consuming carrot juice. (Aldriana and Rohimi, 2021). Apart from the price being quite cheap and easy to obtain, this method of treatment also does not provide any side effects or risks in the long term.

Carrots are one of the root vegetables which are rich in vitamins and minerals which are good for the health of the human body. In 100 grams of carrots there is a beta-carotene content of 754 mcg which can block or block prostaglandin hormones (hormones that affect dysmenorrhea). Beta-carotene also has an anti-inflammatory (anti-inflammatory) and analgesic (anti-pain) effect so that it can affect dysmenorrhea in women (Hastuti, Sumiyati and Aini, 2017). In addition to containing ingredients that can reduce pain in dysmenorrhea, carrots are also very easy to get at a fairly cheap price.

Based on previous research that has been conducted by (Wiyani and Era Susanti, 2020), with a total sample of 30 respondents and using the purposive sampling technique he gave carrot juice once a day as much as 1 glass containing 310cc, then monitored 4 hours after the results found that 63% of the respondents experienced a decrease from moderate to mild pain levels. From this, it can be proven that there is an effect of carrot juice on reducing the degree of dysmenorrhea in young women.

Based on a preliminary study that was conducted at SMP Amanah Ummah Mojolaban in class VIII, there were 41 female students, 38 of whom experienced dysmenorrhea with complaints of pain which could disrupt daily activities. The majority of female students who experience dysmenorrhea treat pain only by resting and there is no other treatment. Therefore, based on the background above, the researcher thought and was interested in conducting research on the effect of giving carrot juice on reducing the degree of dysmenorrhea in young women in Islamic Middle School Amanah Ummah Mojolaban. This study aims to determine the effect of giving carrot juice to reduce the degree of dysmenorrhea in young women at Islamic Middle School Amanah Ummah Mojolaban.

## 2. METHODS

This research uses a pre-experimental method with a one group pre-posttest design. In this study, pain was measured twice using the NRS (Numeric Rating Scale) sheet before and

after the intervention was given. The intervention in the form of Carrot Juice was given once a day when the respondent experienced dysmenorrhea, with a dose of 250 grams of carrots mixed with 100 cc of water and 1 tablespoon of granulated sugar, then blended until smooth and filtered. The sample used in this research was 21 people taken from the total population at Amanah Ummah Mojolaban Islamic Middle School, totaling 126 people using a random sampling technique where all respondents received the same opportunity. The inclusion criteria used in this study were, willing to be a respondent, aged 12-15 years and no history of carrot allergy. This research was conducted in June 2023.

### 3. RESULTS

**Table 1. Frequency Distribution of Characteristics by Age in Young Girls at Amanah Ummah Mojolaban Islamic Middle School**

Age	f	%
13	5	23.8%
14	6	28.6%
15	10	47.6%
<b>Total</b>	<b>21</b>	<b>100%</b>

Based on the results of the study in table 1 above, it is explained that respondents who experienced dysmenorrhea at the age of 13 were 5 people or 23.8%, at the age of 14 were 6 people or 28.6%, and at the age of 15 there were 10 people or by 47.6%. From these data, it can be concluded that the most age who experienced dysmenorrhea in this study was at the age of 15 years with a total of 10 respondents and respondents who experienced dysmenorrhea with the least age were found at the age of 13 with as many as 5 people.

**Table 2. Frequency Distribution of Respondent Characteristics Based on the Degree of Pain Before being given the intervention**

Category	f	%
No Pain	0	0%
Mild Pain	6	28.6%
Moderate Pain	13	61.9%
Severe Pain	2	9.5%
Severe Pain	0	0%
<b>Total</b>	<b>21</b>	<b>100%</b>

Source: Primary Data, 2023

Based on the data in table 2 above, an illustration is obtained that before being given carrot juice the majority of respondents during dysmenorrhea were in the moderate pain category with a percentage of 61.9% or as many as 13 people.

**Table 3. Frequency Distribution of Respondent Characteristics Based on Pain Levels After being given the intervention**

Category	f	%
No Pain	3	14.3%
Mild Pain	14	66.7%
Moderate Pain	4	19.0%
Severe Pain	0	0%
Severe Pain	0	0%
<b>Total</b>	<b>21</b>	<b>100%</b>

Source: Primary Data, 2023

Based on the data in table 3 above, the results show that after being given treatment (giving carrot juice) the majority of respondents at the time of dysmenorrhea were in the category of mild pain with a percentage of 66.7% or as many as 14 people.

**Table 4. Different Test of Dysmenorrhea Pain Before and After Giving Carrot Juice to Islamic Middle School Students of Amanah Ummah Mojolaban**

Variable	Pre-Test		Post-Test		P-value Wilcoxon
	f	%	f	%	
No Pain	0	0%	3	14.3%	0.000
Mild Pain	6	28.6%	14	66.7%	
Moderate Pain	13	61.9%	4	19.0%	
Severe Pain	2	9.5%	0	0%	
Severe Pain	0	0%	0	0%	
<b>Total</b>	<b>21</b>	<b>100%</b>	<b>21</b>	<b>100%</b>	

Source: Primary Data, 2023

From table 4 it shows that the majority of respondents before being given carrot juice amounted to 61.9% or as many as 13 people experienced pain with moderate pain category, then after being given carrot juice the majority of respondents experienced a decrease in pain with mild pain category as many as 14 people or 66.7% of the total respondents. From the SPSS

calculation data using the Wilcoxon test, it was found that the p value was  $0.000 < 0.05$ .

#### 4. DISCUSSION

##### **Characteristics of Respondents Based on Age in Islamic Middle School Amanah Ummah Mojolaban.**

Based on table 1 above, it shows that the majority of respondents experienced dysmenorrhea the most, namely at the age of 15 years with a total of 10 people. While the respondents who experienced the least dysmenorrhea were at the age of 13 years with a total of 5 people.

This is in line with previous research conducted by (Noravita, 2017) which states that the most important variable that affects a person's pain level is one of the factors of age. The older a person is, the higher the risk of pain.

Noravita (2017), stated that most teenagers or 56% especially among students said that dysmenorrhea greatly affected their activities, while 39% and 5% of other students said that dysmenorrhea had little effect on activities in their lives. There are so many dysmenorrhea incidents that are problematic for teenagers, and not a few of them are absent during class hours (Noravita, 2017).

This statement is also supported by Proverawati and Misaroh (2009) in a research journal conducted by Susanti (2017) which states that, there are several factors that cause primary dysmenorrhea that occurs in adolescents such as psychological factors (emotional instability), endocrine factors (arrence of menstrual pain due to excessive contractions compared to adult women), hormonal/prostaglandin factors (an increase in prostaglandins in the uterine wall which can cause excessive uterine contractions), and constitutional factors (a chronic disease which can be the cause of increasingly felt pain, such as anemia in adolescents).

##### **Measurement Results Before Giving Treatment Or Intervention At Amanah Ummah Mojolaban Islamic Middle School.**

Based on table 2 above, it shows that before the intervention was carried out, the results found that the majority of respondents experienced dysmenorrhea with a moderate level of pain as many as 13 people or 61.9% of the total sample with an average scale of 4 and only 1 respondent who experienced pain levels weight on a scale of 8.

This is the same as research conducted by Puspita, (2008) in the journal (Natalia and Fitriani, 2021) which stated that the results of a study conducted on young women at SMP 2 Kaplongan Indramayu showed that most of the respondents experienced dysmenorrhea with a severe pain level of 60% of the total sample before the intervention.

Dysmenorrhea pain is a natural pain that is felt by every woman at the time of the menstrual cycle. The pain arises due to contractions of the uterine wall caused by an increase in the hormone prostaglandin in the uterus. Everyone will feel a different level of pain, some have mild, moderate to severe pain. Pain that is within reasonable limits and can still carry out daily activities can be said to be mild pain, while pain that is very severe and interferes with activities and even cannot move at all can be said to be pain accompanied by disturbances (Romlah et al., 2021).

Menstrual pain occurs due to the influence of an imbalance of ovarian sex steroid hormones and the presence of psychological factors that can exacerbate pain. An increase in prostaglandins in the body can cause a decrease in blood flow and oxygen to the uterus resulting in ischemia, this occurs due to an increase in uterine contractions due to an increase in prostaglandins in the blood (Kusmiyati, 2016).

According to (Aldriana and Rohimi, 2021) Dysmenorrhea pain can be overcome or reduced by pharmacological methods such as taking pain relievers and also non-pharmacological ones such as warm compresses, massage, resting, doing light exercise and consuming fruits and vegetables, one of which is recommended to consume carrot juice.

##### **Measurement Results After Treatment Or Intervention At Amanah Ummah Mojolaban Islamic Middle School.**

Table 3 above shows that 62% of respondents experienced moderate pain after being given carrot juice 1x a day at a rate of 250 grams of carrots mixed with 100cc of water and 1 tablespoon of granulated sugar which was then blended and filtered, and given to respondents. when feeling pain then monitoring is carried out for 2-4 hours after administration to experience a decrease in pain levels with mild pain category.

Hastuti, et al (2017), stated that the content of vitamin E and beta-carotene contained in 100 grams of carrots is 754mcg which is believed to



block or block the hormone prostaglandin in the body. In addition, the content of vitamin E and beta-carotene found in carrots can also be useful as anti-inflammatory (anti-inflammatory) and also analgesic (anti-pain). So the results of the study after being given carrot juice, most of the respondents experienced a decrease in the degree of dysmenorrhea pain they felt.

This research is in line with research that has been conducted by (Wiyani and Susanti, 2020) who gave carrot juice to 30 respondents as much as 1 cup (310cc) once a day then monitored for 4 hours after administration and found that 63% of the total respondents experienced a decrease in pain levels from moderate pain to mild pain.

The results of this study are also supported by Latifah, (2021) who conducted research on the effect of carrot juice on dysmenorrhea pain levels in 30 female students at SMA N 3 Tasikmalaya with the results that all respondents experienced a decrease in pain levels with an average value of 3.50.

#### **The Effect of Consumption of Carrot Juice on Decreasing Degrees of Dysmenorrhoea in Young Girls at Amanah Ummah Mojolaban Islamic Middle School**

From the results of the tests that have been carried out based on table 4. it shows that the majority of respondents before being given carrot juice amounted to 61.9% or as many as 13 people experienced pain in the category of moderate pain, then after being given carrot juice the majority of respondents experienced a decrease in pain with mild pain category of 14 people or 66.7% of the total respondents.

From the statistical tests that were carried out using the Wilcoxon test as shown in table 4.4 above, it was found that the average negative rank value was 11.00 and the positive rank value was 0.00 which means that of the total sample or a number of 21 people, all respondents experienced a decrease in pain from pre-test to post-test with an Asymp. Sig (2-tailed) 0.000 or p value 0.000 < 0.05. A significance value of less than 5% (0.05) indicates that there is an effect of giving carrot juice on a decrease in the degree of dysmenorrhea in young women at Amanah Ummah Mojolaban Islamic Middle School.

Puspita, (2018) Mentioned that carrots contain sugar, carotene, fiber, calcium, carbohydrate, iron and beta-carotene. The

content of beta-carotene in carrots can help block the production of increased prostaglandins in the body which will affect the occurrence of dysmenorrhea.

Martinus, et al (2022) also mentioned that dysmenorrhea can be reduced by using carrot juice consumed during menstruation, because the beta-carotene content is good for reducing pain during dysmenorrhea.

The results of this study are in line with the research conducted Noravita, (2017) which stated that all respondents from the experimental group experienced a decrease in pain levels after being given carrot juice 2x a day with an interval of 4 hours after the first administration, with a dose of 250 grams of carrots mixed with 200cc of water, and given when the respondent experienced pain.

The results of this study are also supported by (Hastuti, Sumiyati and Aini, 2017), who conducted research on administering carrot juice to pain levels in 25 students using 250 grams of carrots blended with 100cc of water and 2 tablespoons of sugar. The results of this study after being given treatment, the majority of respondents or 68% of the total respondents experienced a decrease in pain with a p value of 0.000.

## **5. CONCLUSION**

Prior to the intervention, the majority of respondents experienced dysmenorrhea with moderate levels of pain. After intervention in the form of carrot juice and monitoring for 2-4 hours, it was found that the majority of respondents experienced a decrease in pain in the mild pain category. This can happen because the beta-carotene content in carrots can help block the increased production of prostaglandins in the body which will influence the occurrence of dysmenorrhoea. From the statistical test results, the Asymp. Sig (2-tailed) value is 0.000 or a p value is 0.000 < 0.05. A significance value of less than 5% (0.05) indicates that there is an effect of giving carrot juice on a decrease in the degree of dysmenorrhea in young women at Amanah Ummah Mojolaban Islamic Middle School.

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