



Administration of Honey Carrot Juice As a Pain Relief of Primary Dysmenorrhea in Adolescent Women

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ARTICLE INFO

Article history:

Received December 04, 2019
Accepted February 12, 2020
Published June 05, 2020

Keyword:

Honey Carrot Juice
Primary Dysmenorrhea
Teenage Girls

ABSTRACT

Many young women experience problems or disturbances during menstruation, one of which is pain during menstruation (dysmenorrhea). Dysmenorrhea greatly affects young women, this causes disruption of daily activities. Non-pharmacological pain management includes giving honey carrot juice. This study aims to determine the effect of giving honey carrot juice on reducing primary dysmenorrhea pain in adolescent girls in Lau Rakit Village, Deli Serdang Regency in 2020. The research method is quantitative with a Quasi-Experiment research type which was designed in a one-group pretest-posttest design. The study population was all young women aged 14-17 years as many as 32 people. The sample of this research is a total sampling of 32 people. The results of the study using the Wilcoxon test obtained p. value = 0.000. The conclusion is that there is a difference in the pain scale of primary dysmenorrhea in adolescent girls before and after giving honey carrot juice. It is hoped that young women can use carrots and honey to be used as a combination juice to reduce menstrual pain. Giving honey carrot juice is one of the non-pharmacological prevention efforts for dysmenorrhea which is safe and easy to obtain.

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DOI: 10.30604/jika.v5i1.828

ABSTRAK

Banyak remaja putri mengalami masalah atau gangguan pada saat haid, salah satunya adalah nyeri pada saat haid (dismenorea). Dismenorea sangat berdampak pada remaja putri, hal ini menyebabkan terganggunya aktivitas sehari-hari. Penanganan nyeri secara non farmakologi antara lain pemberian jus wortel madu. Penelitian ini bertujuan untuk mengetahui pengaruh pemberian jus wortel madu terhadap penurunan nyeri dismenorea primer pada remaja putri di Desa Lau Rakit Kabupaten Deli Serdang tahun 2020. Metode penelitian bersifat kuantitatif dengan jenis penelitian Quasi Experiment yang dirancang secara one-group pretest-posttest design. Populasi penelitian adalah semua remaja putri yang berumur 14-17 tahun sebanyak 32 orang. Sampel penelitian ini adalah total sampling sebanyak 32 orang. Hasil penelitian menggunakan uji wilcoxon didapatkan p.value = 0,000. Kesimpulannya adalah ada perbedaan skala nyeri dismenorea primer pada remaja putri sebelum dan sesudah pemberian jus wortel madu. Diharapkan kepada remaja putri agar dapat memanfaatkan wortel dan madu untuk dijadikan jus kombinasi untuk mengurangi nyeri menstruasi. Pemberian jus wortel madu merupakan sebagai salah satu upaya preventif dismenorea kategori non farmakologi yang aman dan mudah untuk didapatkan.

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INTRODUCTION

Menstruation is an important event in the life of a young woman. Menstrual health aspects are an important part of a woman's reproductive health, which not only includes aspects of physical health, but also aspects of mental, spiritual and social health. Unmanaged menstruation can also lead to dropout, absenteeism, and other sexual and reproductive health problems that have long-term health and socio-economic consequences for adolescent girls (Ernawati et al., 2017).

Some adolescents experience disturbances during menstruation, namely experiencing pain during menstruation (dysmenorrhea). Dysmenorrhea is pain during menstruation, usually with cramping and centered in the lower abdomen. Complaints of pain can vary from mild to severe. Menstrual secondary disorders that are most often complained of are pain before, during or after menstruation. The pain arises due to the presence of the prostaglandin hormone which makes the uterine muscle (womb) contract (Judha et al., 2019).

There are some people who think that menstrual pain is normal. But in some cases, not a few women who experience prolonged menstrual pain. They continue to experience pain, they can't even do any activities during menstruation because the pain is unbearable and unbearable (Anugoro & Wulandari, 2017).

Dysmenorrhea greatly affects young women, this causes disruption of daily activities. Adolescents who experience dysmenorrhea during menstruation limit their daily activities, especially learning activities at school. A student has dysmenorrhea, their learning activities at school are disrupted and it is not uncommon for them to not attend school. In addition, the quality of life decreases, for example a student who experiences dysmenorrhea cannot concentrate on studying and learning motivation will decrease because of the dysmenorrhea that is felt during the teaching and learning process. This situation not only has a significant impact on quality of life and personal health but can also have a global economic impact. The impact of dysmenorrhea if not treated immediately can cause infertility (infertility) (Ariyanti et al., 2020).

The incidence of dysmenorrhea in the world is very large. On average more than 50% of women in every country experience dysmenorrhea, such as in America the percentage rate is around 60%, in Sweden around 72% and in the UK a study states that 10% of high school adolescents appear absent 1-3 days every month because experiencing dysmenorrhea (Ariyanti et al., 2020).

According to the World Health Organization (WHO) in the Journal of Midwifery, the incidence of dysmenorrhea is quite high throughout the world. The average incidence of dysmenorrhea in young women is between 16.8-81%. On average in European countries, dysmenorrhea occurs in 45-97% of women. With the lowest prevalence in Bulgaria (8.8%) and the highest reaching 94% in Finland. The highest prevalence of dysmenorrhea is often found in adolescent girls, which is estimated to be between 20-90%. About 15% of adolescents reported experiencing severe dysmenorrhea (Silviani et al., 2019).

The incidence of dysmenorrhea varies in each country. In the United States, the prevalence of dysmenorrhea is estimated at 45-90%. Dysmenorrhea is also responsible for absenteeism from work and school, as many as 13-51% of women have been absent at least once and 5-14% have been absent repeatedly. Of the 1,266 female students at Firat University Turkey, 45.3% felt pain in each period, 42.5%

sometimes had pain and 12.2% did not experience pain. Epidemiological studies in the adolescent population in the United States, reported a prevalence of dysmenorrhea of 59.7%. Of those who complained of pain, 12% severe, 37% moderate and 49% mild. Dysmenorrhea causes 14% of adolescent girls to often miss school (Anugoro & Wulandari, 2017).

The incidence of dysmenorrhea in adolescents in Asia is 74.5%. In Hispanic adolescent girls, the prevalence of dysmenorrhea is 85%. Meanwhile, the incidence rate in Indonesia is 55%. Looking at the data, it can be interpreted that almost all women have experienced dysmenorrhea (Setyowati, 2018). The incidence of primary dysmenorrhea in Indonesia is around 54.89%, while the rest suffer from secondary dysmenorrhea. Dysmenorrhea occurs in adolescents with a prevalence ranging from 43-93% (Swastika et al., 2019).

Menstrual pain management is divided into two categories, namely pharmacological and non-pharmacological approaches. Pharmacological pain management menstrual pain can be treated with analgesic therapy which is the most commonly used method for pain relief. Analgesic drugs can relieve pain effectively, but the use of analgesics will have an addictive effect and will provide dangerous side effects for the user. Non-pharmacological pain management includes warm compresses, relaxation techniques and deep breathing and yoga, as well as using herbal ingredients that are efficacious in reducing pain due to menstrual disorders, one of which is the provision of honey carrot juice (Ariyanti et al., 2020).

Carrot (*Daucus carota*) is one of the most beneficial vegetables. Carrots contain sugar, carotene, pectin, asparagine, fiber, fat, carbohydrate, calcium, phosphorus, iron, sodium, amino acids, essential oils, and beta-carotene. Carrots also contain lots of vitamins A, B, C, D, E and K. The benefits of vitamin E and beta-carotene are that they can help block the formation of prostaglandins and vitamin E can also help overcome the effects of increasing the production of the hormone prostaglandin. Prostaglandin hormone is a hormone that affects the occurrence of dysmenorrhea. Prostaglandins that play a role here are E2 (PGE2) and F2a (PGF2a). Meanwhile, the benefit of beta carotene is that it can minimize analgesic pain (Damayanti et al., 2020).

Honey is a non-pharmacological therapy that includes herbal therapy, and has many nutrients since ancient times. One of the ingredients is flavonoids (apigenin, pinocembrin, kaempferol, quercetin, galangin, chrysin and hesperetin). The flavonoid content in honey can prevent the production of the cyclooxygenase enzyme. Cyclooxygenase is an enzyme that catalyzes the synthesis of prostaglandins from arachidonic acid. Flavonoids block the action of the cyclooxygenase enzyme, which reduces the production of prostaglandin mediators, thereby inhibiting pain. In addition, honey can reduce prostaglandin E2, prostaglandin alpha 2, and thromboxane B2 in the blood, therefore it can reduce pain (Astarini & Herayanti, 2016).

According to previous research journals, it showed a significant number of giving carrot juice with p. value = 0.000 which means less than $\alpha = 0.05$, thus H_0 is rejected and H_1 is accepted, which means that there is an effect of giving carrot juice on dysmenorrhea pain in adolescent girls (Puspita, 2010). 2018).

According to research (Assyifa, 2018), giving carrot juice can reduce the pain scale of -3.82, namely from 5.64 (before giving carrot juice) to changing down to 1.82 (after giving carrot juice). While in the control group the average pain scale before was 4.45 and the average pain scale after was

3.35, the results showed a decrease in the pain scale of -0.9. Statistical test results obtained p.value = 0.000 (p.value <0.05) meaning that there is an effect of giving carrot juice to reduce primary dysmenorrhoea pain.

Lau Rakit Village is one of the villages in STM Hilir District, Deli Serdang Regency. Through a preliminary survey based on information from midwives in Lau Rakit Village, it was found that 6 young women had primary dysmenorrhea. The six young women, every time they experience menstruation, limit their daily activities and go to the local midwife to get medicine to reduce the pain. The menstrual pain they experience has an impact on their daily activities. Indirectly, the menstrual pain they experience interferes with activities to fulfill daily needs such as attending lessons at school, studying at home, and even completing daily tasks. Meanwhile, efforts to overcome dysmenorrhea by non-pharmacological methods have never been carried out by young women who experience primary dysmenorrhea, namely drinking carrot juice.

Based on the above background, the researcher is interested in researching "The Effect of Honey Carrot Juice on Reduction in Primary Dysmenorrhea Pain Scale in Young Women in Lau Rakit Village, Deli Serdang Regency".

METHOD

This study aims to determine the effect of giving honey carrot juice on reducing primary dysmenorrhea pain in adolescent girls in Lau Rakit Village, Deli Serdang Regency. This type of research is a quantitative research in the form of a quasi-experimental research, which is one type of experimental research where the researcher does not do randomness in determining the subject of the research group, but the results achieved are quite significant, both in terms of internal and external validity. The research design is

a one-group pretest-posttest design. In this design, there is a pretest, before being given treatment. Thus the results of the treatment can be known more accurately, because it can compare with the situation before being given treatment (Yusuf, 2017). The research was conducted in Lau Rakit Village, Deli Serdang Regency. The reason for choosing the research location is that there are still young women in Lau Rakit Village who experience primary dysmenorrhea to the extent that they limit their daily activities and require medication to reduce their pain. So it is necessary to do non-pharmacological efforts to overcome pain due to primary dysmenorrhea, namely drinking honey carrot juice. This research was conducted in 2020. The population of this study were all young women aged 14-17 years in Lau Rakit Village, Deli Serdang Regency who experienced moderate and severe dysmenorrhea as many as 32 people. The sampling technique in this study was using a total sampling technique, that is, all of the population was used as a research sample of 32 people. As for all samples, pretest, treatment and posttest were carried out. The analysis used to determine whether there is a difference between the independent variable and the dependent variable, a paired t-test statistical test was performed. However, after testing the normality of the data in this study using Saphiro Wilk, it was found that the data were not normally distributed. This means that the data is considered not to meet the requirements in parametric statistical testing through paired t-test. So the statistical test used is the Wilcoxon Test.

RESULTS AND DISCUSSION

a. Primary Dysmenorrhea Pain Scale Before Giving Honey Carrot Juice to Adolescent Girls

Table 1
Frequency Distribution of Primary Dysmenorrhea Pain Scale Before Giving Honey Carrot Juice to Adolescent Girls

No	Skala Nyeri	Frekuensi	Persentase (%)
1	4	4	12,5
2	5	12	37,5
3	6	7	21,9
4	7	4	12,5
5	8	5	15,6
Total		32	100,0

Based on table 1, before being given honey carrot juice, the majority of respondents experienced pain on a scale of 5 as many as 12 people (37.5%).

If the scale in the Numeric Rating Scale is grouped into categories of pain intensity, where a scale of 0 is no pain at

all, a scale of 1-3 is mild pain, a scale of 4-6 is moderate pain and a scale of 7-10 is severe pain, then the pain category can be seen in the following table:

Table 2
Frequency Distribution of Primary Dysmenorrhea Pain Categories Before Giving Honey Carrot Juice to Adolescent Girls

No	Kategori Nyeri	Frekuensi	Persentase (%)
1	Sedang	23	71,9
2	Berat	9	28,1
Total		32	100,0

Based on table 2, it can be seen from the pain category that the majority of respondents experienced moderate pain as many as 23 people (71.9%) and the minority experienced severe pain as many as 8 people (28.1%).

b. Primary Dysmenorrhea Pain Scale After Giving Honey Carrot Juice to Adolescent Girls

Table 3
Frequency Distribution of Primary Dysmenorrhea Pain Scale After Giving Honey Carrot Juice to Adolescent Girls

No	Skala Nyeri	Frekuensi	Persentase (%)
1	2	3	9,4
2	3	19	59,3
3	4	7	21,9
4	5	3	9,4
Total		32	100,0

Based on table 3, after being given honey carrot juice, the majority of respondents experienced pain on a scale of 3 as

many as 19 people (59.3%). If grouped by pain category, it can be seen in the following table:

Table 4
Frequency Distribution of Primary Dysmenorrhea Pain Categories After Giving Honey Carrot Juice to Adolescent Girls

No	Kategori Nyeri	Frekuensi	Persentase (%)
1	Ringan	22	68,8
2	Sedang	10	31,2
Total		32	100,0

Based on table 4, it can be seen from the pain category that the majority of respondents experienced mild pain as many as 22 people (68.8%).

c. The Effect of Honey Carrot Juice on Decreasing the Pain Scale of Primary Dysmenorrhea in Adolescent Girls

Table 5
Distribution of Effects of Giving Honey Carrot Juice on Decreasing Primary Dysmenorrhea Pain Scale in Adolescent Girls

No	Kelompok	Mean	SD	Min	Max	P.Value
1	Sebelum	5,81	1,28	4	8	0,000
2	Sesudah	3,31	0,78	2	5	

Based on table 5 it can be analyzed that the average menstrual pain before being given honey carrot juice is 5.81 while the average menstrual pain after being given honey carrot juice is 3.31. It can be concluded that after being given honey carrot juice, the average respondent experienced the effect of decreasing the primary dysmenorrhoea pain scale, which was 2.5 points.

The results of this statistical test using the Wilcoxon sign rank test, the results obtained p. value = 0.000 < 0.05. So H0 is rejected and Ha is accepted, which means that there is a difference in the pain scale of primary dysmenorrhea in adolescent girls before and after giving honey carrot juice in Lau Rakit Village, Deli Serdang Regency in 2020.

highest being 8. If grouped into the categories of mild, moderate and severe pain, it can be seen that the majority of respondents experienced moderate pain as many as 23 people (71.9%).

This study is in accordance with previous research, namely research conducted by Nara Lintan Mega Puspita in 2018, that as many as 81.3% of respondents experienced moderate pain. As a result of the moderate category of pain they experience, it affects the young women themselves, namely the disruption of daily activities (Puspita, 2018).

When viewed from the average pain scale in this study, the results of this study are in accordance with the research of Dwi Ampri Assyifa in 2018 that the dysmenorrhea pain scale before being given treatment was 5.64 with the lowest pain 4 and the highest pain 8. Primary dysmenorrhea often causes physical and mental symptoms. psychological symptoms. Each individual can experience physical symptoms and psychological symptoms at the same time, but also can experience only one symptom, both physical and psychological. Signs of symptoms that can appear such as feeling unwell, tired, nausea and vomiting, diarrhea, lower back pain, headaches, sometimes accompanied by vertigo, feelings of anxiety, restlessness, to loss of balance and loss of patience. The pain that arises has a different nature, sometimes the pain is felt in one place, sometimes the pain is not clear where the center is (Assyifa, 2018).

Therefore, it is necessary to treat menstrual pain, especially non-pharmacological pain management. In this study, primary dysmenorrhea was treated by giving honey carrot juice. Carrots (*Daucus carota*) contain lots of vitamins A, B, C, D, E and K. The benefits of vitamin E and beta-carotene are that they can help block the formation of prostaglandins and vitamin E can also help overcome the effects of increasing the production of the hormone

DISCUSSION

4.1. Primary Dysmenorrhea Pain Scale Before Giving Honey Carrot Juice to Adolescent Girls

Menstruation is an important event in the life of a young woman. Some adolescents experience disturbances during menstruation, namely experiencing pain during menstruation (dysmenorrhea). There are some people who think that menstrual pain is normal. But in some cases, not a few women who experience prolonged menstrual pain. They are constantly in pain, and they can't even do any activities during menstruation because the pain is unbearable and unbearable.

The results showed that the majority of respondents experienced pain on a scale of 5 as many as 12 people (37.5%). This shows that the pain scale of each young woman is different with the lowest pain scale being 4 and the

prostaglandin. Meanwhile, the benefit of beta carotene is that it can minimize analgesic pain (Damayanti et al., 2020).

Honey contains flavonoids (apigenin, pinocembrin, kaempferol, quercetin, galangin, chrysin and hesperetin). The flavonoid content blocks the action of the cyclooxygenase enzyme, which reduces the production of prostaglandin mediators, so that it can inhibit pain. In addition, honey can reduce prostaglandin E2, prostaglandin alpha 2, and thromboxane B2 in the blood, therefore it can reduce pain (Astarini & Herayanti, 2016).

According to the assumption of researchers that menstrual pain can occur in all women. Various ways can be done to overcome the pain experienced during menstruation. Because some women experience moderate or severe pain, it can interfere with their daily activities. Feelings of pain or discomfort are felt by a person due to the response of the pain center to a stimulus, for example the occurrence of tension in the abdominal muscles of pain by contractions of the uterine wall during dysmenorrhea. The feeling of pain will be felt by the sufferer if the center of attention is focused on the pain itself without being diverted to others. The pain felt by everyone is also not the same, there is mild pain, moderate pain to severe pain.

4.2. Primary Dysmenorrhea Pain Scale After Giving Honey Carrot Juice to Adolescent Girls

As in this study, non-pharmacological methods in overcoming primary dysmenorrhea is through the administration of honey carrot juice. Because the menstrual cycles are different, the researchers conducted a study on young women who were recorded to experience menstrual pain, until the 28 young women received honey carrot juice. In this case, the researchers collaborated with each of the parents of the teenage girls to find out when their daughter's menstruation was by recording daily data on the teenage girls who experienced menstrual pain.

The results showed that there was a decrease in the menstrual pain scale after being given honey carrot juice. This can be seen from the research conducted, that after being given honey carrot juice, the majority of respondents experienced pain on a scale of 3 as many as 19 people (59.3%) with the lowest scale being 2 and the highest being 5. Based on the pain category, it can be seen that the majority respondents experienced mild pain as many as 22 people (68.8 %).

This study showed that there was a change in the pain scale of primary dysmenorrhea after giving honey carrot juice. Because when viewed from the scale of pain that occurs, before being given honey carrot juice the majority experienced pain on a scale of 5 as many as 12 people (37.5%), but after being given honey carrot juice the majority on a scale of 3 as many as 19 people (59.3%). Judging from the pain category, it also shows that previously the majority of respondents experienced moderate pain, but after being given honey carrot juice, the majority of respondents experienced mild pain.

The results of this study are in accordance with research conducted by Vivi Dwi Ariyanti in 2020 that the average level of dysmenorrhea pain from 20 respondents after being given carrot juice was 3.15 with a standard deviation of 0.988, a minimum pain scale of 2 and a maximum pain scale of 5 (Ariyanti et al., 2020). The occurrence of a decrease in the pain scale before and after giving honey carrot juice in this study, did not experience a gap with the midwifery journal by Dini Fitri Damayanti in 2020 which stated that the median value of the primary dysmenorrhea pain scale before

giving carrot juice was 6.00 and after giving carrot juice to 2.00. Then the difference between before and after being given carrot juice was 4.00. Based on Std. Deviation before giving carrot juice was 1.437 and after giving carrot juice was 1.068. Based on the minimum and maximum before giving carrot juice is from 3 to 7, while the minimum and maximum after giving carrot juice is 1 to 5 (Damayanti et al., 2020).

Discomfort in menstruation because the endometrium in the secretory phase produces Prostaglandin F2 which causes contraction of smooth muscles. If excessive amounts of prostaglandins are released into the blood circulation, then in addition to dysmenorrhea, general effects are also found, such as diarrhea, nausea, vomiting, flushing. Carrot juice is a vegetable plant material that contains the production of the hormone prostaglandin, where this hormone affects the reduction of pain in dysmenorrhea. Carrots in 100 grams contain Beta Carotene as much as 754 mcg. Beta-carotene apart from being an antioxidant, also has analgesic (anti-pain) and anti-inflammatory (anti-inflammatory) effects (Ariyanti et al., 2020).

According to the researcher's assumption, that honey carrot juice has the effect of reducing the pain scale of primary dysmenorrhea in adolescents. Because there was a decrease in the average pain and pain categories both before and after giving honey carrot juice.

4.3. The Effect of Giving Honey Carrot Juice on Decreasing the Pain Scale of Primary Dysmenorrhea in Adolescent Girls

The results showed that $p.value = 0.000 < 0.05$. So it can be concluded that there is a difference in the pain scale of primary dysmenorrhea in adolescent girls before and after giving honey carrot juice in Lau Rakit Village, Deli Serdang Regency in 2020.

The results of this study are in accordance with the research journal (Puspita, 2018) which shows a significant number in giving carrot juice with $p.value = 0.000$ which means less than $= 0.05$, thus H_0 is rejected and H_1 is accepted which means that there is an effect of giving carrot juice on dysmenorrheal pain in adolescent girls.

This study also did not experience a gap with research (Assyifa, 2018), that giving carrot juice can reduce the pain scale of -3.82, namely from 5.64 (before giving carrot juice) to changing down to 1.82 (after giving carrot juice). While in the control group the average pain scale before was 4.45 and the average pain scale after was 3.35, the results showed a decrease in the pain scale of -0.9. Statistical test results obtained $p.value = 0.000$ ($p.value < 0.05$) meaning that there is an effect of giving carrot juice to reduce primary dysmenorrhoea pain.

This study is also in line with research journals (Noravita, 2017) that the p value in the experiment is 0.000, which is smaller than 0.05, which means that there is a difference between the results of the pretest and posttest and there is an effect of giving carrot juice to the decrease in the level of primary dysmenorrhea. The p -value in the experimental group was also smaller than that in the control group ($0.000 < 0.031$) which means that the experimental group had a more significant reduction in pain than the control group.

The results of this study are in accordance with research (Ariyanti et al., 2020), that the Wilcoxon test results obtained $p.value = 0.000 < 0.05$, meaning that there is an effect of giving carrot juice to the reduction of dysmenorrhea pain. While research (Hunowu, 2019) using the paired sample t -test, the mean value of menstrual pain in the pretest

treatment was 7.00 and the posttest was 3.10 with p.value = 0.000 <0.05. Menstrual pain control pretest was 6.00 and posttest 3.70 with p.value = 0.005 <0.05. The significant value is less than 5% (0.05) meaning that there is an effect of giving carrot juice to the decrease in the level of primary menstrual pain for female adolescents.

According to the researcher's assumption, all this time, young women have overcome the problem of dysmenorrhea by consuming analgesic drugs which are not good for long-term health. This research proves that honey carrot juice can reduce the pain scale of primary dysmenorrhea. The content of vitamin E and beta-carotene in carrots is able to block prostaglandins, which are hormones that affect dysmenorrhea or menstrual pain. Carrots are one of the vegetables that have many uses, for example as an ingredient in vegetable soup or used as a food mixture. Carrots are widely found in Indonesia and their distribution is even. Carrots are easy to find in the market because almost every day carrots are sold in the market. In addition to its delicious taste, carrots are also trusted by the public as a vegetable that has a lot of vitamins at an affordable price. While honey, the flavonoid content in honey can prevent the production of the cyclooxygenase enzyme so that it can inhibit pain.

CONCLUSION

After conducting research on "Giving honey carrot juice as a pain reliever for primary dysmenorrhea in young women in Lau Rakit Village, Deli Serdang Regency", it was concluded that there was an effect of giving honey carrot juice on reducing primary dysmenorrhea pain scale in adolescent girls with p.value = 0.000 (< 0.05). It is hoped that young women can use carrots and honey to make juice to reduce menstrual pain as a non-pharmacological method that is safe and easy to obtain.

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