

GIVING PINEAPPLE JUICE AND HONEY TO REDUCE THE INTENSITY OF PRIMARY DYSMENORRHEA IN ADOLESCENT GIRLS

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ABSTRAK : PEMBERIAN JUS NANAS DAN MADU UNTUK MENURUNKAN INTENSITAS *DISMENOREA* PRIMER PADA REMAJA PUTRI

Latar Belakang: *Dismenorea* primer merupakan nyeri menstruasi yang terjadi sejak *menarch* tanpa adanya kelainan/patologis. *Dismenorea* primer dapat menimbulkan dampak pada remaja putri karena akan mengganggu aktivitas selama disekolah, akan tetapi dapat diatasi dengan terapi nonfarmakologi salah satunya dengan minum jus nanas madu.

Tujuan: Mengetahui efektivitas dari jus nanas madu terhadap intensitas *dismenorea* primer pada remaja putri.

Metode: Jenis Penelitian kuantitatif, desain yang digunakan *true eksperiment* dengan rancangan *pretest-posttest control group design*. Teknik pengambilan sampel menggunakan *simple random sampling* dengan jumlah 30 responden yang terbagi menjadi 15 kelompok eksperimen dan 15 kelompok kontrol. Penelitian ini dilakukan selama 1 bulan. Analisis yang digunakan yaitu uji beda mean dan uji *independent simple t test*.

Hasil: Menunjukkan pada kelompok eksperimen rata-rata intensitas nyeri sebelum diberikan perlakuan sebesar 4,67 dan sesudah diberikan perlakuan menurun menjadi 1,27, sedangkan pada kelompok kontrol rata-rata intensitas nyeri sebelum diberikan perlakuan sebesar 4,80 dan sesudah dengan tanpa diberikan perlakuan menjadi 4,60. Hasil uji *independent simple t test* dengan nilai *p value* $0.000 < 0.05$, artinya pemberian jus nanas madu efektif menurunkan *dismenorea* primer.

Kesimpulan: Pemberian jus nanas dan madu efektif menurunkan intensitas nyeri *dismenore* primer yang diberikan pada hari ke 1 dan ke 2 sebanyak 450 ml/hari dengan dosis 250 gram buah nanas dan 20 ml madu dengan menunggu reaksi selama 3 jam. Maka jus nanas dan madu dapat menjadi salah satu terapi nonfarmakologi yang digunakan untuk mengatasi *dismenorea* primer.

Saran: Diharapkan dengan adanya penelitian ini remaja putri dapat mengimplementasikan jus nanas dan madu sebagai alternatif untuk menurunkan *dismenorea* primer.

Kata Kunci : *Dismenorea* Primer, Jus Nanas dan Madu, Remaja Putri

ABSTRACT

Background: Primary dysmenorrhea can be said as menstrual pain which occurs since menarche without any abnormalities/pathology. Primary dysmenorrhoea bring impact to adolescent girls because it interfere with their activities at school, but it can be treated with non-pharmacological therapy, which is drinking honey pineapple juice.

Purpose: To determine the effectiveness of honey pineapple juice regarded into the intensity of primary dysmenorrhoea in adolescent girls.

Methods: This type of quantitative research uses a true experiment with a pretest-posttest control group design. The sampling one about technique used simple random sampling with 30 respondents divided into 15 experimental groups and 15 control groups. This research was conducted for one month. The analysis used is the mean difference test and the independent simple t test.

Results It shows that in the experimental group the average pain intensity before being given treatment was 4.67 and after being given treatment decreased to 1.27, while in the control group the average pain intensity before being given treatment was 4.80 and after being given no treatment. to 4.60. The independent simple t test results with a *p value* of $0.000 < 0.05$, meaning that giving honey pineapple juice is effective to reduce the primary dysmenorrhea.

Conclusion: Giving pineapple juice and honey was effective in reducing the pain intensity of primary dysmenorrhea given on days 1 and 2 as much as 450 ml/day with a dose of 250 grams of pineapple and 20 ml of honey by waiting for a reaction for 3 hours. So pineapple juice and honey can be a non-pharmacological therapy used to treat dysmenorrhea pain.

Suggestions: It is hoped that with this research, young women can implement pineapple juice and honey as an alternative to reduce primary dysmenorrhoea.

Keywords: Adolescent Girls, Dysmenorrhea Primer, Pineapple Juice and Honey

INTRODUCTION

One of the characteristics of puberty in adolescent girls is menstruation. Menstruation is the condition where blood comes out of the vagina every month due to unfertilized egg cells (Ilham et al, 2023). However, most women especially adolescent girls experience physical discomfort during menstruation occurs, namely pain in the stomach or what is called pain dysmenorrhoea (Sari, 2021).

Dysmenorrhea is divided into two, namely primary dysmenorrhea and secondary dysmenorrhoea. Primary dysmenorrhea is pain which occurs in the abdomen starting from menarche without any abnormalities / pathology. Meanwhile, secondary dysmenorrhoea is pain or cramps which usually occur after menarche due to abnormalities/pathological conditions such as the presence of the endometrium (Sinaga, 2017).

In the world of prevalence the incidence of dysmenorrhea is quite high in various countries with an average incidence menstrual pain in adolescent girls is between 17-81% (Gumarães & Póvoa, 2020). While in Indonesia, the cases of dysmenorrhoea is high, around 64.25%, which is mostly found in teenagers (Silaen et al, 2021). In East Java, there are 4,653 young women who experience dysmenorrhoea. The prevalence for primary dysmenorrhoea is 90.25% or 4,297 people, while for secondary dysmenorrhoea it is 9.75% or around 365 people (Meinawati & Nurlia, 2021).

Primary dysmenorrhea occurs due to an excessive increase in the hormone prostaglandin F_{2α} in the endometrium, which usually causes symptoms during menstruation. The symptoms felt are pain or cramps in the lower or middle abdomen, if the pain is severe it can spread to the hips, lower back and inner thighs (Mouliza, 2020). Sometimes during menstruation there are also other symptoms such as nausea, vomiting, dizziness, and even diarrhea (Misliani et al, 2019). In each woman, the intensity of pain felt vary and will usually interfere with daily activities (Hayati et al, 2020).

Dysmenorrhea can have an impact on school-age adolescents because will interfere with activities during school. If a student experiences pain dysmenorrhoea, their learning activities at school will be disrupted resulting in decreased learning concentration and automatically academic achievement as well also decreases. Sometimes

they also miss school due to pain the weight he felt (Azagew et al, 2020). This causes a decrease in the quality of life for adolescent girls. Another impact that can occur is disruption infertility and sexual dysfunction if not treated, depression and alteration autonomic activities (Marni & Farhandika, 2022).

To overcome this problem, it can be overcome with pharmacological and non-pharmacological therapy. Pharmacological therapy includes giving anti-pain medication such as analgesics and anti-inflammatory drugs so that the pain felt decreases, however if consumed excessively and in the long term it will certainly have a bad impact on health. Some of the side effects experienced are nausea, vomiting, allergies, and so on (Setiawati et al, 2019). As an alternative, adolescent girls can use non-pharmacological therapy, including exercise, endorphin massage, warm compresses, music therapy, relaxation, consuming lots of water, balancing with nutritious foods, and herbal drinks, one of which is giving pineapple juice and honey (Rachmawati et al, 2020; Widowati et al, 2020).

Pineapples contain the enzyme bromelain, which has an analgesic effect to reduce dysmenorrhoea. Bromelain is a proteolytic enzyme found in *Ananas Comosus* L (Wulandari, 2021). Moreover the bromelain enzyme, pineapple also contains pectin and vitamin C which function to reduce pain, heal wounds, and improve blood circulation (R.A Mella et al, 2022).

Honey is one of the herbal ingredients that can reduce reduce dysmenorrhea. Honey contains vitamin E and flavonoids where the function of these flavonoids is to relax the uterine abdominal muscles (Bustamam et al, 2021). From the results of research conducted by Simamora et al (2023), one of the non-pharmacological therapies to reduce the intensity of pain in dysmenorrhoea is by giving pineapple juice and honey to YP Singosari Deli Tu Middle School students with the result that, there is an effect on reducing the intensity of menstrual pain (dysmenorrhoea), in general those who were previously given pineapple juice and honey experienced severe pain and after being given pineapple juice and honey experienced moderate pain.

Based on the description above, the researches is interested in conducting research with

the aim to find out the effectiveness of honey pineapple juice regarded to the intensity of primary dysmenorrhoea in adolescent girls.

RESEARCH METHODS

The type of research used is quantitative research, the design that is a true experiment, with a pretest-posttest control group design, where in this research there is a treatment (experimental) group and a control group chosen randomly. Pineapple juice and honey are given on days 1 and 2 during menstruation as much as 450 ml/day with a dose of 250 grams of pineapple juice and 20 ml of honey and wait for a reaction for 3 hours. This research was conducted at the MTsN 2 Lamongan school for one month.

The population used was 108 female students. The sampling technique used simple random sampling with 30 respondents divided into 15 experimental groups and 15 control groups. This study used instruments in the form of questionnaires and observation sheets on the CPS pain scale (comparative pain scale). The analysis used is the difference test between two means and the independent simple t test.

RESEARCH RESULTS

Univariate analysis

Based on table 1 above, it can be seen that almost all of the control groups were 14 years old, amounting to 86.7% (13 respondents), while in the experimental groups the majority were 14 years old, namely 73.3% (11 respondents).

Table 1
Frequency Distribution of Respondent Characteristics Based on Age

Age	Control groups		Eksperimental Groups	
	N	%	N	%
14 years	13	86,7	11	73,3
15 years	2	13,3	4	26,7

(Sourch : Primary Data, 2024)

Table 2
Frequency Distribution of Respondent Characteristics Based on Age of Menarche, Family History, and Menstrual Period

Characteristics	Control groups		Eksperimental Groups	
	N	%	N	%
Menarch Age				
<12 years	12	80	11	73,3
>12 years	3	20	4	26,7
Family History				
Yes	8	53,3	8	53,3
No	7	47,7	7	47,7
Menstrual Period				
<28 days	8	53,3	3	20
28-35 days	4	26,7	10	66,7
>35 days	3	20	2	13,3

(Sourch : Primary Data, 2024)

Based on table 2 above, it is known that almost the entire control groups experienced menarche at <12 years of age, 80% (12 respondents). In the experimental groups, the majority experienced menarche at the age of <12 years, amounting to 73.3% (11 respondents).

Most of the control groups and experimental groups had a family history of dysmenorrhoea, 53.3% each (8 respondents).

Most of the control group had a menstrual period <28 days, 53.3% (8 respondents). In the experimental groups, the majority had a menstrual cycle of 28-35 days, amounting to 66.7% (10 respondents).

Table 3
Intensity of Primary Dysmenorrhea Before and After Treatment

Pain Category	Before Treatment				After Treatment			
	Control groups		Eksperimental Groups		Control groups		Eksperimental Groups	
	n	%	N	%	n	%	N	%
Mild pain	5	33,3	3	20	4	26,7	14	93,3
Moderate pain	9	60	10	66,7	11	73,3	1	6,7
Severe pain	1	6,7	2	13,3	0	0	0	0

(Source : Secondary Data, 2024)

Based on table 3 above, it can be seen that the majority of the control groups before being given treatment had primary dysmenorrhea pain intensity in the moderate category of 60% (9 respondents), whereas after being given treatment the majority had primary dysmenorrhea pain intensity in the moderate category of 73.3%. (11 respondents).

Most of the experimental groups before being given treatment had primary dysmenorrhea pain intensity in the moderate category of 66.7% (10 respondents), whereas after being given treatment almost all had primary dysmenorrhea pain intensity in the mild category of 93.3% (14 respondents).

Byvariate Analysis

Table 4
Average Intensity of Primary Dysmenorrhea Before and After in the Experimental Group

Group	Mean	SD	Min	Max
Pre-eksperiment	4,67	1,496	3	8
Post-eksperiment	1,27	0,799	1	4

(Source: SPSS data processed)

Based on table 4 above, it can be seen that the average pain intensity before treatment was given to the experimental groups was 4,67, while after treatment the average pain intensity decreased to 1,27.

Based on table 5 above, it can be seen that the average pain intensity before treatment in the control group was 4,80, while after treatment the average pain intensity was 4,60.

Table 5
Average Intensity of Primary Dysmenorrhea Before and After in the Control Group

Kelompok	Mean	SD	Min	Max
Pre Control	4,80	1,612	3	8
Post Control	4,60	1,639	2	8

(Source: SPSS data processed)

Table 6
Effectiveness of Honey Pineapple Juice in Reducing Primary Dysmenorrhea in Adolescent Girls

Hasil	Mean	SD	p-value
Eksperimental Group	3,40	1,183	0,00
Control Group	0,33	0,488	

(Source: SPSS data processed)

Table 6 shows that the results of the independent samples t test obtained a value of $p = 0,000$ ($p < 0,05$), where these results indicate that H_1 is accepted and H_0 is rejected. This means that there is effectiveness of giving pineapple juice and honey

on the intensity of primary dysmenorrhea pain in adolescent girls

DISCUSSION

Average Intensity of Primary Dysmenorrhea Before and After in the Experimental Group

Based on research that has been conducted, the average intensity of primary dysmenorrhoea in adolescent girls before being given treatment is on a scale of (4.67) with the moderate pain category and after being given pineapple juice and honey the pain intensity decreases to (1.27) with the mild pain category. This means that there is a significant reduction in the intensity of primary dysmenorrhoea pain in young women at MTsN 2 Lamongan.

These results are in line with research conducted by Anissa Ariyanto where the average pain intensity of primary dysmenorrhea before and after treatment decreased (Ariyanto et al, 2023).

Primary dysmenorrhoea can be treated with non-pharmacological therapy, one of which is by administering pineapple juice and honey which can reduce the intensity of primary dysmenorrhoea. This decrease can be influenced by the enzyme content of bromelain which comes from pineapple, while honey contains flavonoids and vitamin E (Gani, 2023; Indrayani et al, 2023).

According to the researchers' assumptions, the intensity of primary dysmenorrhoea could decrease due to the content contained in pineapple which functions as a pain reliever and honey as a pain inhibitor during dysmenorrhoea which was given for two consecutive days, resulting in a significant decrease in the experimental group.

Average Intensity of Primary Dysmenorrhea Before and After in the Control Group

Based on research that has been conducted, the average intensity of primary dysmenorrhoea in adolescent girls before treatment is on a scale of (4.80) with the moderate pain category and after treatment the pain intensity decreases to (4.60) with the moderate pain category. This shows that there was no significant decrease in the control group in the intensity of primary dysmenorrhoea in adolescent girls at MTsN 2 Lamongan.

These results are in line with research conducted by Yana Agustin Setianingsih, with results in the control group before treatment being average the intensity of pain was (2.62), whereas after being given the treatment it became (3.75). This shows that there was no reduction in pain intensity in the group control (Setianingsih, 2018).

Based on the theory, each individual's pain intensity is different, influenced by the individual's description of pain, perception and experience of pain. Each person gives different perceptions and reactions to each other regarding pain, this is because pain is a subjective feeling that only the

individual himself understands the level of pain he feels (Karlinda et al, 2022).

According to the researchers' assumptions, there was no significant decline in the control group because they were not given any treatment for two days. Some respondents experienced a decline because these respondents had enough rest. However, for the majority of respondents there was no change in pain intensity, some even experienced an increase in pain intensity.

Effectiveness of Honey Pineapple Juice on the Intensity of Primary Dysmenorrhea in Adolescent Girls

The results of the independent simple t test showed a p value of 0.00 (p value <0.05). These results show that H1 is accepted and H0 is rejected so that it can be seen that there is effectiveness of giving pineapple juice and honey on the intensity of primary dysmenorrhoea in adolescent girls at MTsN 2 Lamongan.

The results of this research are in line with research conducted by Merry Krista Simamora, namely by giving pineapple juice and honey which can have the effect of reducing menstrual pain in young women at Singosari Deli Tua Middle School in 2022 (Simamora, 2023).

Primary dysmenorrhea occurs due to an increase in the prostaglandin F_{2α} hormone in the luteal phase of the menstrual cycle, resulting in an increase in the frequency of uterine contractions and causing stomach cramps for sufferers (Afiyanti, 2016).

Pineapples contain the enzymes bromelain, pectin and vitamin C which can reduce pain during menstruation (Wrisnijati et al, 2019). The bromelain enzyme is a proteolytic enzyme which obtained from pineapple which can reduce the level of menstrual pain by inhibiting the production of prostaglandins which are the body's pain stimulus receptors (Safitri & Fatihatul H, 2024).

The mechanism of action of pineapple is to inhibit the formation of arachidonic acid by blocking protein kinase C which will affect enzyme activity phospholipase. So when both of them don't work as they should then can inhibit the formation of arachidonic acid and cause hormones prostaglandins decrease (Nurnasari & Khuluq, 2017).

Honey contains vitamin E and flavonoids where the function of these flavonoids is to relax the abdominal muscles of the uterus by inhibiting the production of cyclooxygenase so it can reduce the intensity of dysmenorrhea (Riskasari et al, 2023). Meanwhile, vitamin E suppresses the production of

phospholipase A and cyclooxygenase enzymes by inhibiting prostaglandin production (Silaban et al, 2019).

The combination of pineapple and honey has been proven to reduce the intensity of menstrual pain (dysmenorrhea). Pineapples contain the enzyme bromelain which has benefits as an analgesic and anti-inflammatory, by slowing uterine contractions so that excessive prostaglandin production does not occur and dysmenorrhea pain will be reduced or even disappear, while the function of honey is to relax the uterine muscles so that they do not contract (Harahap et al, 2020).

According to researchers' assumptions, giving pineapple juice and honey is effective in reducing the intensity of primary dysmenorrhoea. Pineapple juice was given for two consecutive days, namely on days 1 and 2, 450 ml/day with a dose of 250 grams of pineapple and 20 ml of honey, waiting for a reaction for 3 hours. Consuming pineapple juice and honey is a non-pharmacological way to reduce pain without side effects. Apart from that, the manufacturing process is quite easy and also cheap so it doesn't require expensive costs.

CONCLUSION

In the experimental group experienced a significant decrease from the previous average of 4,67 (moderate pain) to 1,27 (mild pain), in the control group there was no significant decrease with the previous mean being 4,80 (moderate pain) to 4,60 (moderate pain). Giving honey pineapple juice is effective to reduce the intensity of primary dysmenorrhoea in adolescent girls with a p-value of 0,00 (<0,05).

SUGGESTION

With this research, it is hoped that adolescent girls can implement pineapple juice and honey as an alternative to reduce primary dysmenorrhoea and it is hoped that schools, especially in UKS, can use pineapple juice and honey as a non-pharmacological treatment to reduce dysmenorrhea pain in their female students.

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