

# EFFECT OF AVOCADO JUICE ADMINISTRATION ON *Dysmenorrhea* REDUCTION IN YOUNG WOMEN IN MTS NEGERI 1 BONE BOLANGO

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## ABSTRACT

Indonesia's incidence rate of *Dysmenorrhea* consists of 54.89% primary *Dysmenorrhea* and 9.36% secondary *Dysmenorrhea*. For puberty adolescents with incidence rates of dysmenorrhea range from 45% -75%. Where absenteeism in schools due to *Dysmenorrhea* ranges from 5%-14% So *Dysmenorrhea* is the main cause of absenteeism in young women. The purpose of this study was to find out about the effect of avocado juice administration on the decrease in *Dysmenorrhea* pain in adolescents in MTS Negeri 1 Bone Bolango.

The research method used is Pre experimental design one group pretest posttest with Population 98 schoolgirls and Sample 30 students with sampling techniques using Purposive sampling and Free variables are avocado juice and Bound variables are *Dysmenorrhea*.

The statistical test results paired t test samples obtained a sig value of  $0.000 < 0.005$ , thus  $H_a$  received and  $H_0$  rejected means there is an effect of giving avocado juice to the decrease in *Dysmenorrhoea*. The conclusion is that giving avocado juice is proven to lower the scale of menstrual pain (*Dysmenorrhea*) in young women in MTS Negeri 1 Bone Bolango.

**Kata kunci:** jus alpukat, *dismenorhea*

## INTRODUCTION

During menstruation usually experience abdominal pain, commonly referred to as *Dismenorhea*. This dysmenorrhea is a stiffness or spasm in the lower abdomen that occurs in the time leading up to or during menstruation, which forces women to rest or results in decreased performance and reduced daily activities [10].

Women with dysmenorrhea produce 10 times more prostaglandins than women who are not dysmenorrhea. Prostaglandins cause increased uterine contractions, and at excess levels will activate the colon. Other causes of dysmenorrhea are experienced by women with certain disorders, such as endometriosis, pelvic infections (pelvic area), uterine tumors, appendicitis,

digestive organ abnormalities, even kidney abnormalities [7].

*Dismenorhea* is a *Detrimental* condition for many women and has a huge impact on health-related quality of life. As a result, *Dismenorhea* also holds responsibility for considerable economic losses due to the cost of medicines, medical care, and decreased productivity. In some literature there are reportedly substantial variations in prevalence. *Dismenorhea* makes women unable to do normal activities, for example students who experience primary *Dismenorhea* are unable to concentrate in learning and learning motivation decreases due to perceived pain [6].

Avocados have many health benefits, one of which is to reduce pain. Calcium in avocados can give the effect of reduced

pain in the body. Calcium has a role as a necessary substance as a substance necessary for muscle contraction, namely actin and myosine when muscles contract. Calcium deficiency causes muscles to be unable to loosen after contractions, which can cause muscles to cramp [11].

Most respondents experienced moderate pain before administration of avocado juice (56.3%), and experienced a change in pain levels after administration of avocado juice which is almost half of respondents experienced mild pain (43.8%) [11].

The results of a study conducted in the United States in 2012 to determine the incidence of primary dysmenorrhea in women aged 12- 17 years is 59.7% with a degree of pain 49% mild dysmenorrhea, 37% moderate dysmenorrhea, and 12% severe dysmenorrhea [15].

Indonesia's dysmenorrhea incidence rate consists of 54.89% primary dysmenorrhea and 9.36% secondary dysmenorrhea. All adolescent puberty incidence rates of dysmenorrhea range from 45%-75%. Where attendance in school's ranges from 13%-51% and 5%-14% absence is due to the severity of the symptoms that occur. So dysmenorrhea is the leading cause of absenteeism in young women [2].

Based on data from the Gorontalo Provincial Health Office, the number of young women in 2018 aged 13-15 years in Gorontalo province as many as 7,701 people. In Bone Bolango District 975 people. This age is equivalent to junior high school education.

Based on a preliminary study on September 10, 2019 at MTS Negeri 1 Suwawa Bone Bolango Regency, it is known that the number of young women students in 2019 at MTS Negeri 1 Bone Bolango numbered 98 students. From the results of interviews with 28 students who had menstruation, there were 27 students experiencing dysmenorrhea and 1 student did not experience dysmenorrhea. Of all the stu-

dents interviewed said they did not yet know how to overcome the pain during menstruation or *Dismenorhea*. Their way to overcome the dimenorhea is only by withstanding the pain but some go to the UKS for a break. They say if the impact of *Dismenorhea* will cause them to lack focus or lack of concentration in receiving lessons is also difficult to do activities.

### **Problem Formulation**

Based on the description in the background of the problem above, it can be formulated the following research problem is there any influence of avocado juice administration on the decline of *Dismenorhea* in young women in MTS Negeri 1 Bone Bolango?

### **Tujuan Penelitian**

To find out about the effect of avocado juice administration on *Dismenorhea* pain reduction in adolescents in MTS Negeri 1 Bone Bolango.

1. Identify *Dismenorhea* pain before administering Avocado juice to young women at MTS Negeri 1 Bone Bolango.
2. Identify *Dismenorhea* pain after administering Avocado juice to young women at MTS Negeri 1 Bone Bolango.
3. Analyzing the effect of avocado juice administration on *Dismenorhea* pain reduction in young women in MTS Negeri 1 Bone Bolango.

### **Benefits of Research**

Theoretical benefits, as one of the requirements to complete the study program majoring in Midwifery Gorontalo Health Polytechnic and the results of this study can be useful to add insight to health sciences related to adolescents, especially related to *Dismenorhea*. The results of the study can be continued by other researchers if the researchers next want to use the control group.

The benefits of practitioners, this research can be used as a source for the development of scientific institutions where the results of this research can be used as

a reference material for further research. The results of this study can provide information on how to overcome *Dysmenorhea* in order to improve preventive efforts and further treatment in troubled young women. The results of this study can provide health information, especially in adolescents who have problems during menstruation and as an input for adolescents for countermeasures of adolescents who have problems during menstruation. The results of this study can be used as an alternative that can be used by midwives or other health workers to overcome adolescents who experience *Dysmenoreapain*.

### Library Overview

Menstruation is a normal and natural incidence of endometrial discharge and debris occurring in women due to the detachment of the endometrial lining of the uterus in response to the secretion of ovarian hormones [8].

The start of the first menstruation (menarche) in a woman is characterized by periodic bleeding, namely the discharge of blood from the endometrium that has necrosis (dead cells). Occurs about 14 days after ovulation in a 28-day cycle. Menstrual blood mostly comes from arteries and veins.

The stage of menstruation or menstruation is distinguished into five, namely: menstrual stage (3-7 days) where the unfertilized egg, decaying along with the endometrial wall so that bleeding arises; proliferation stage (7-9 days) starting from the cessation of menstrual blood until the 14th day; ovulation stage [12].

Normal menstruation has a cycle of not less than 24 days and does not exceed 35 days, the duration of menstruation is 3-7 days with the amount of blood during menstruation lasting not exceeding 80 ml, replace pads 2-6 times per day. Normal menstruation is usually 3-5 days (2-7 days is still normal), the average amount is 35 cc (10-80 cc is still considered nor-

mal), approximately 2-3 dressings change per day [12].

Common physical symptoms during women's menstruation are weight changes; swelling of the abdomen, fingers, limbs or ankles, discomfort in the breast as a result of breast enlargement when pressed, will be painful and stiff, headaches, even some women experience migraines, pain and muscle aches [12].

Dysmenorhea, Dysmenorrhea or painful menstruation is a symptom and not a disease. In addition to bleeding and infection, menstrual pain can be one of the symptoms of almost all gynecological abnormalities in women aged 15-24 years, and is a direct cause of loss of work time, school, or other activities in women, which is difficult to calculate in value.

Complaints of menstrual pain can occur varying from mild to severe. The severity of menstrual pain is directly related to the length and amount of menstrual blood. As is known menstruation is almost always followed by heartburn/pain [4].

*Dysmenorhea* is derived from the Greek word dys which means difficult, painful, abnormal; meno which means moon and orrhea which means flow. *Dysmenorrhoea* is a medical condition that occurs during menstruation or menstruation that can interfere with activity and requires treatment characterized by pain or pain in the *abdomen* and *pelvis*[3].

Menstrual pain often occurs in young women, because it has not reached biological maturity (especially the maturity of the reproductive apparatus i.e. endometrial growth is still not perfect) and psychological. Primary dysmenorrhea usually begins at a time when the cycle has become ovulated in the years of reproductive age and the regular cycle. The peak incidence age of women experiencing dysmenorrhea is 20 to 24 years. The frequency of pain will decrease with age. This is thought to

be due to the decline of the uterine nerve due to aging [13].

Menstrual pain can be classified according to the type of pain and the absence of observable abnormalities. Based on the type of pain, menstrual pain can be divided into, spasmodic dysmenorrhea and congestive dysmenorrhea, as follows:

1. Spasmodic Pain Spasmodic pain is felt in the lower part of the abdomen and starts before menstruation or immediately after menstruation begins. Many women are forced to lie down because they suffer so much pain that they can't do anything. Some of them fainted, felt very nauseous, some even actually vomited. Most of the sufferers are young women although they are also found among those aged 40 years and above. Spasmodic dysmenorrhea can be treated or at least reduced by the birth of the first baby although many women do not experience such a thing [7].
2. Congestive Pain Sufferers of congestive dysmenorrhea who will usually know from days in advance that their period will soon arrive. The menstrual process may not cause too much pain if it is already underway. Even after the first day of menstruation, people suffering from congestive dysmenorrhea will feel better. While based on the absence of abnormalities or causes that can be observed, menstrual pain can be divided into, primary dysmenorrhea and secondary dysmenorrhea [7].

Based on the absence of abnormalities or causes, *dismenorhea* pain is divided into two namely primary *dismenorhea* and secondary *dismenorhea*

1. *Dismenorhea* Primer, *Dismenorhea* Primary occurs after 12 months or more post menarche (first menstruation). That is because the menstrual cycle in the first months after menarche is usually anovulatory that is not accompanied by pain. The pain

arises before or together with menstruation and lasts for several hours, although in some cases it can last up to several days. The nature of pain can last up to several days. The nature of pain is an infectious spasm, usually confined to the lower abdomen, but can propagate to the waist and thigh area. Pain can be accompanied by nausea, vomiting, headaches, and diarrhea. Menstruation that causes pain in adolescents is mostly caused by primary *dysmenorrhea*[3].

2. *Dismenorheasekunder*, *Dismenorheasekunder* congenital abnormalities or organic abnormalities in the pelvis that occur in adolescence. Pain caused by pelvic abnormalities, such as endometriosis, uterine myoma (benign tumor of the womb), cervical stenosis, and uterine malposition. *Dismenorhea* that cannot be associated with a particular disorder usually begins before the age of 20, but is rare in the first years after menarche. *Dismenorheais* colic pain and is thought to be caused by uterine contractions by progesterone released during endometrial release. Severe pain can spread from the pelvis to the back and thighs, often accompanied by nausea in some women [3].

There are several factors that can affect/cause *dysmenorrhea*, among others:

1. Primary *dysmenorrhea* psychiatric factors are experienced by adolescents who are experiencing stages of growth and development both physical and psychic. The unpreparedness of the young woman in the face of development and growth in her, resulting in psychic disorders that eventually lead to physical disorders, such as menstrual disorders such as *dysmenorrhea*.
2. Constitutional factors Constitutional factors are related to psychiatric factors as the cause of the onset of primary *dysmenorrhea* that can decrease a per-

son's resistance to pain. These factors include:

- a. Anemia Most of the causes of anemia is iron deficiency necessary for the formation of hemoglobin, so it is called iron deficiency anemia. This iron deficiency can cause disruptions or obstacles to the growth of both body cells and brain cells.
  - b. Chronic disease Chronic disease suffered by a woman will cause the body to lose to a disease or to pain. Diseases that include chronic diseases in this case are asthma and migraines.
3. Cervical Canal Obstruction Factor The oldest theory states that primary dysmenorrhea is caused by cervical canal stenosis. In women with the uterus in hyperantiflexi may occur cervical canal stenosis, but this is not now considered an important factor as the cause of dysmenorrhea. Many women suffer from dysmenorrhea without cervical stenosis and without uterus in hyperantiflexi. On the contrary there are women without dysmenorrhoea complaints, although there is cervical stenosis and the uterus is located in hyperantiflexi or hyperretoflexi.
  4. Endocrine Factors Seizures in primary dysmenorrhea are caused by excessive contractions. This is due to the endometrium in the secretion phase producing prostaglandin F2  $\alpha$  which causes contraction of smooth muscles. If the excessive amount of prostaglandin F2  $\alpha$  will be released in the blood circulation, then in addition to dysmenorrhea, there are also common effects, such as diarrhea, nausea, and vomiting.
  5. Allergy Factors This theory is put forward after the association between primary dysmenorrhea with urticaria, migraine or bronchial asthma. Smith suspects that the cause of allergies is menstrual toxins.

Pain is a defense mechanism of the body, arises when there is damaged tissue and this will cause the individual to react by transferring the pain stimulus. Pain is an unpleasant sensory and emotional experience related to actual and potential tissue damage localized to a part of the body. Often described in the term of the distruksi process, tissues such as punctured, burning heat, wrapped, such as emotions, fear, nausea and fear [3].

Pain based on the location and source of pain, as follows:

1. Superficial somatic pain (skin), skin pain derived from the suoerfisial structure of the skin and subcutaneous tissue. An effective stimulus to cause pain in the skin can be mechanical, temperature, chemical, or electrical excitatory. If the skin is only involved, pain is often felt as stinging, sharp, meinggis or like burning, but when blood vessels contribute to pain, the nature of pain becomes pulsating [3].
2. Deep somatic pain, somatic pain in reference to pain coming from muscles, tendons, ligaments, bones, joints and arteries. These structures have fewer pain receptors resulting in the localization of skin pain and tend to spread to the surrounding area [3].
3. Somatic pain visera, Visera pain refers to pain that comes from the organs of the body. Visceral pain receptors are less frequent compared to somatic pain receptors and are located in the smooth muscle walls of ornate organorgans. The main mechanism of visceral pain is stretching or abnormal distension of walls or organ capsules. Ischemia and inflammation [3].
4. Over pain, over pain is defined as pain originating from one area in the body but felt located in another area. Visceral pain is often transferred to the dermatomy (skin area) that is retired by the same segment of the spinal medulla as the viksus that the pain comes from

the mudigah period, not only where the organ is in adulthood [3].

5. Neuropathic pain, the nervous system normally decreases harmful stimuli from the peripheral nervous system (SST) into the central nervous system (CNS) that cause feelings of pain. Thus, lesions in SST or CNS can cause disruption or loss of pain sensation. Neuropathic pain often has qualities such as burning, soreness or like electrocution. Patients with neuropathic pain suffer from autonomic nervous system (SSO) instability. Thus, the pain often gets worse ole emotional or physical stress (cold, fatigue) and subsides by relaxation [3].

Pain based on the length of time of occurrence of pain, as follows:

1. Acute pain, most of it, is caused by disease, inflammation or unjuri tissue. This type of pain usually comes suddenly, for example, after trauma or surgery and may accompany anxiety or emotional stress. Acute pain indicates that damage or injury has already occurred. Acute pain usually decreases in line with the occurrence of healing. This pain generally occurs less than 6 (six) months the most frequent cause of pain is the act of diagnosis and treatment. in some cases, rarely becomes a chronicle [3].
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3. Characteristics of pain, pain characteristics can be seen or measured based on the location of pain, the duration of pain (minutes, hours, days or months) rhythm/period (continuous, disappearance arises, periods increase or decrease in intensity) and quality (pain such as puncture, burning, deep or superficial pain, or even as in gencet[3].

Characteristics can also be seen pain based on methods PQRST, P Provocate, Q Quality, R Region, S Severe, T Time. Here's the full description:

1. **P:** Provocate, health workers should examine about the causes of pain in sufferers, in this case it is necessary to consider which parts of the body are injured including linking the pain suffered with psychological factors, because it can occur severe pain because of psychological factors not from the wound.
2. **Q:** Quality, the quality of pain is something subjective expressed by the client, often the client describes pain with a sentence of pain such as in a puncture, burning, deep or superficial pain, or even like in a gencet.
3. **R:** Region, to review the location, health workers ask the sufferer to show all parts / areas that feel uncomfortable. To localize more specifically, health workers should ask the patient to show areas where the pain is minimal to the direction of severe pain. However, this will be difficult to do if the pain is spread or diphthuse.
4. **S:** Severe, severity is the most subjective thing felt by sufferers, because it will be asked how the quality of pain, the quality of pain should be described using a scale that is kuantitas.
5. **T:** Time, health workers review about the awitan, duration and series of pain, it is necessary to ask when the pain begins to appear, how long to suffer, how often to relapse, and others. [3].

Juvenile or adolescence, derived from the Latin *adolescere* which means to grow towards maturity. Maturity in question is not only physical maturity, but also social and psychological maturity. The age limit of adolescents according to the WHO is 12 to 24 years. According to the Ministry of Health it is between 10 to 19 years and unmarried. According to BKKBN is 10 to 19 years [16].

Adolescence is a transitional period between childhood and adulthood. In medical sciences (such as biology and physiology), adolescents are known as a stage of physical development when human genitalia reach maturity. This means that, anatomically, the genitals and other organs will get the perfect shape. The period of physical maturation runs approximately for two years. Usually counted from the first menstruation in women and the first wet dream in men [12].

1. Adolescent development and its characteristics, related to adolescent reproductive health we urgently need to know the development of adolescents and their characteristics. Based on the nature or characteristics of its development, the period (time span) of adolescence there are three stages, namely:
  - a. Early adolescence (10-12 years)
    - 1) Look and indeed feel closer to peers;
    - 2) Look and feel free;
    - 3) Look and indeed pay more attention to the state of his body and begin to think the imaginary (abstract).
  - b. Middle youth (13-15 years old)
    - 1) Look and feel like looking for self-identity;
    - 2) There is a desire for dating or attraction to the opposite sex;
    - 3) There is a deep feeling of love;
    - 4) The ability to think abstractly (fantasize) is growing;
    - 5) Fantasize about sexual matters.
  - c. Late adolescence (16-19 years old)

- 1) Reveal self-freedom;
  - 2) In finding more selective peers;
  - 3) Have an image (image, circumstance, role) towards him;
  - 4) Can realize feelings of love;
  - 5) Have the ability to think imaginary or abstract [16].
2. Physical Changes in Adolescence, In adolescence, there is a rapid physical growth accompanied by many changes, including the growth of reproductive organs (sexual organs) so that maturity is achieved indicated by the ability to perform reproductive functions. The changes that occur in the growth are followed by the emergence of the following signs:
  - a. Signs of primary sex, which is meant by the signs of primary sex is the organ of sex. In male gonads or testes. the organ is located inside the scrotum. At the age of 14 new about 10% of the size matures. After that there was a rapid growth for a year or two, then the growth decreased. Testes develops fully at the age of 20 or 21 years. As a sign that the function of the male reproductive organs matures, usually wet dreams occur, meaning he dreams about things related to sexual intercourse, thus removing sperm [16].

Semua organ reproduksi wanita tumbuh selama masa puber. Namun tingkat kecepatan antara organ satu dan lainnya berbeda. Berat uterus pada anak usia 11 atau 12 tahun kira-kira 5,3 gram, pada usia 16 tahun rata-rata beratnya 43 gram [16].

Sebagai tanda kematangan organ reproduksi pada perempuan adalah datangnyahaid. Ini adalah permulaa dan arterangkaian pengeluaran darah, lender dan jaringan sel yang hancur dari uterus secara berkala, yang akan terjadi kira-kira setiap 28 hari. Hal ini berlangsung uterus-

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sampaimenjelang masa menopause. Menopause bisaterjadipadausiasekitar lima puluhan[16].

b. Signs of female secondary sex

- 1) Hair, pubic hair in women also grows as does teenage boys. This growth of pubic hair occurs after the hips and breasts begin to develop. Underarm hair and hair on the skin of the face begin to appear after menstruation. All hair except facial hair is first straight and light in color, then becomes more lush, rougher, darker and somewhat curly.
- 2) Hips, hips become developed, enlarged and rounded. This is as a result of enlarged hip bones and the development of fat under the skin.
- 3) Breast, As the hips enlarge, then the breast is also enlarged and the milk putting protrudes. This happens harmoniously according to the development and the larger mammary glands so that the breast becomes larger and more rounded.
- 4) Fat glands and sweat glands, fat glands and sweat glands become more active. Blockage of fat glands can cause acne. Sweat glands and their smell puncture before and during menstruation[16].

Avocado is one type of fruit that is favored by many people. Avocados are widely grown in tropical areas such as Indonesia. In addition to its good taste, soft, avocado also has a smooth texture covered in a thick dark green color, purplish black and wavy skin. Avocados are also enriched with antioxidants and nutrients. In avocados it has the highest flavonoid content compared to other tropical fruits such as guava, pineapple, mango, papaya fruit, citrus fruits, and tamarind. Flavonoin

content in avocados is used as an antioxidant due to its ability to reduce the formation of free radicals[9].

Many variants of avocados in Indonesia. The latest variety: avocado butter. Named avocado butter because the color of the meat is yellow like butter, it tastes legit and savory so that when processed into juice, for example there is no need to add sugar[3].

Ingredients and benefits of avocados:

1. Avocado content, composition of substances contained for every 100 grams of fruit meat, among others [3]:

**Tabel 1.**KandunganBuahAlpukat

Kandunganbuahalpukatdalam 100 gram	Jumlah
Kalori	85-233 Kal
Protein	0,27-1,7 g
Lemak	6,50-25,18 g
Karbohidrat	5,56-8 g
Kalsium	10 mg
Fosfor	20 mg
Besi	0,9 mg
Vitamin A	0,13-0,51 mg
Vitamin B1	0,025-0,12 m
Vitamin B2	0,13-0,23 mg
Vitamin B3	0,79-2,16 mg
Vitamin B6	0,45 mg
Vitamin C	2,3-3,7 mg
Vitamin D	0,01 mg
Vitamin E	3 mg
Vitamin K	0,008 mg
Kalium	604 mg
Natrium	4 mg
Serat	1,6 g
Air	67,49 g-84,3

**Sumber:**Judha, dkk (2012)

2. Benefits of avocados, explanation of some substances in avocados that are beneficial to our body:
  - a. Vitamin B6, this vitamin is efficacious to relieve pre-menstruation syndrome or pre-menstruation (PMS) commonly suffered by women every month.
  - b. Calcium, avocado fruit has many health benefits, one of which is to reduce pain. Calcium in avocados can give the effect of reduced pain in the body. Calcium has a role as a necessary substance as a substance necessary for muscle contraction,

namely actin and myosine when muscles contract. Calcium deficiency causes muscles to be unable to loosen after contractions, which can cause muscles to cramp [11].

## RESEARCH METHODS

This research is verificative by using a type of quantitative research pre-experiment by using the design *one group pretest-post-test*. In this study, researchers observed and described the scale of pain in young women of *Dysmenorhea* before and after being given avocado juice.

The research site was conducted at MTS Negeri 1 Bone Bolango and the research time was conducted from February 12 to February 24, 2020.

The variable used in this study can be fully explained that the free variable is Avocado Juice while the bound variable is *Dismenorhoe* pain.

The population in this study was all young women who experienced menstrual pain in MTS Negeri 1 Bone bolango. The samples in this study were some of the young women who experienced menstrual pain in MTS Negeri 1 Bone Bolango using a sampling technique that is purposive sampling method. Purposive sampling technique is a technique of applying samples by selecting samples among the population according to the desired researchers (purpose/problem in the study).

Respondents to the study, as follows:

1. Young women who have had menstruation for more than 1 year,
2. History of regular menstruation,
3. No history of disease,
4. Willing to be a respondent,
5. Do not take painkillers,
6. Do not use alternative therapies to relieve pain,

The primary data in the study was data obtained from pain measurements before treatment and after treatment in young women of MTS Negeri 1 Bone Bolango.

Secondary data is data obtained from related agencies such as from books, journals, data from MTS Negeri 1 Bone Bolango in 2019 about the number of young women experiencing pain during menstruation as well as literature used in this study.

The measuring instruments used in this study were digital scales to measure the free variables to be studied, a check sheet to measure the administration of avocado juice and an observation sheet to assess the pain levels of young women.

Data processing is done electronically by using SPSS application (statistical product and service solutions). Data processing can be done with the following steps:

1. Editing, at this stage the authors conducted a study of two data obtained and then examined whether there was a mistake or not in filling it. The results of interviews or questionnaires obtained or collected through questionnaires need to be edited first. If it turns out that there is still incomplete data or information, and it is not possible to re-interview, then the questionnaire.
2. Coding, after editing, then the author gives a certain code on each checklist so that it is easy to do data analysis.
3. Scoring, that is to give a score or weight on each treatment of the checklist.
4. Tabulation, grouping data in a form according to the properties owned according to the purpose of research and presented in the form of narratives and frequency distribution tables.

Presentation of data, data of the results of the study presented in the form of a table according to the frequency of cross tables between free variables and bound variables or in the form of graphs and explanations or narratives to describe the magnitude of the problems found.

Univariate analysis aims to explain or describe the characteristics of each re-

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search variable. The univariate analysis in this study was the data of students who were given avocado juice and noticed a decrease in pain after the administration of avocado juice.

Bivariate analysis was conducted to look at the relationship between independent variables, namely the administration of avocado juice with dependent variables, namely decreased menstrual pain. To find out the effect of avocado juice before and after getting treatment using  $\alpha = 0.05$ . The analysis techniques used in this study used paired T test samples.

### RESULTS and DISCUSSION

MTS Negeri 1 Suwawa is one of the junior high schools in Bone Bolango Regency. This school has a land area of 9681 m<sup>2</sup> and is located at the Sunday Market Street No. 73 Alale Village Suwawa District Bone Bolango with a geographical location North side borders the road, The south is bordered by the Bone River, the east is bordered by the people's house while the west borders the people's house as well. The educators in this school as many as 25 people and the number of students as many as 212 students divided into several classes. The school also has learning facilities, places of worship, computer laboratories, fashion laboratories, multi-purpose halls, libraries and boarding schools as well as BK rooms.

**Tabel 2.** Age Classification Distribution

Age	n	%
10-12	4	14
13-15	25	86
16-19	1	3
total	30	100

The table above shows that most of respondents' ages are in the age range of 13-15 years, namely as many as 25 people (86%) and a small percentage are in the age range of 16-19 i.e. 1 person (3%).

**Tabel 3.** Distribution of First Menstrual

Age	n	%
10-12	26	87
13-15	4	13

total	30	100
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The table above shows that most of the respondents' menarche age is in the age range of 10-12 years, which is as much as 26 people (87%).

**Tabel 4.** Distribution of Menstruation Duration (1 month)

Long menstruation	n	%
3-5 Hari	2	7
6-8 Hari	27	90
>8 Hari	1	3
total	30	100

The table above shows that the length of menstruation of each respondent in 1 cycle is mostly experienced for 6-8 days as many as 27 students (90%) and a small part experienced during the >8 days i.e. 1 student (3%).

1. Univariate analysis, to find out the effect of avocado juice administration on the decrease in *Dysmenorhea* in young women in MTS Negeri 1 Bone Bolango in this study was initiated by distributing respondents to find out the difference between pre and post in the treatment group.

a. Menstrual Pain (*Dismenorhea*) before being given Avocado Juice, the distribution of respondents before being given avocado juice to young women at MTS Negeri 1 Bone Bolango can be seen in the table below:

**Tabel 4.** Distribution of *Dismenorhea* before avocado juice

Pain Level	n	%
Mild Pain	8	27
Moderate Pain	22	73
total	30	100

The table above shows that the level of pain before being given avocado juice is mostly moderate pain which is as much as 22 people (73%). *Dysmenorrhea* makes women unable to do normal activities and requires painkillers. The condition causes a decrease in the quality of life of women, for example students who experience

primary dysmenorhea are unable to concentrate in learning and learning motivation decreases due to perceived pain.

b. Menstrual Pain (*Dismenorhea*) After Avocado Juice

**Tabel 5.** Distribution of *Dismenorhea* after being given Avocado Juice

Pain Level	n	%
Mild Pain	5	17
Moderate Pain	25	83
Total	30	100

The table above shows that the scale of menstrual pain (*Dismenorhea*) experienced by respondents after being given avocado juice largely decreased from moderate pain to mild pain by 83%.

The results showed that most respondents experienced a change in pain levels after administration of avocado juice, namely from moderate pain to mild pain by 80%. So it can be concluded that after administration of avocado juice the pain felt by respondents is reduced.

Calcium in avocados can give the effect of reduced pain in the body. Calcium has a role as a necessary substance as a substance necessary for muscle contraction, namely actin and myosine when muscles contract. Calcium deficiency causes muscles to be unable to loosen after contractions, which can cause muscles to cramp.

2. Bivariate analysis, to find out the effect of avocado juice administration on the decrease in dysmenorhea in young women in MTS Negeri 1 Bone Bolango in this study was initiated by conducting a statistical test paired t test samples to find out the difference between pre and post in the treatment group.

**Tabel 6.** Distribution of *Dismenorhea* before and after avocado juice

Variabel	N	Mean	SD	Std.	Sig
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				Error Mean	
Pretest	30	4.33	1.241	0.227	0,000
Posttest	30	1.67	1.061	0.194	

Based on the table above shows the average result of  $n = 0.000 < 0.005$ , thus  $H_a$  received and  $H_0$  rejected means there is an effect of giving avocado juice to the decrease in dysmenorrhoea in young women in MTS Negeri 1 Bone Bolango. There is an effect of giving avocado juice to *Dismenorheapain* with a value of  $p=0,000$ . Average pain level before: 2.07 and after: 1.20 there is a significant difference with the value  $p=0.000$ .

From the results of the study after being given avocado juice it turned out that from 30 respondents obtained 3 students who did not experience changes in the scale of pain or pain levels felt by these three students is the same as before being given avocado juice. Researchers assume that this is due to some of the first factors being adolescence.

Stress/anxiety factor is the response of the body that is nonspecific to any burden demands on it. If a person after experiencing stress has a disorder in one or more organs of the body so that the concerned can no longer perform their work functions properly, then he is called experiencing distress. The symptoms complained by sufferers are dominated by somatic (physical) complaints, but can also be accompanied by psychological complaints. On the other hand, when stressed, the body will produce excessive hormones adrenaline, estrogen, progesterone and prostaglandins [14].

The second factor is menarche age. Menarche age is too early, where the reproductive organs have not developed to the maximum and there is still a narrowing in the cervix, it will occur pain during menstruation, because the female reproductive organs have not functioned to the maximum [1].

## Effect of Avocado Juice Administration on *Dismenorhea* Reduction in Young Women in MTS Negeri 1 Bone Bolango

Based on the results of observations made in the school MTS Negeri 1 Bone Bolango in respondents who did not experience a decrease in pain was found that the respondent experienced menarche at the age of 10 years or can be said faster than other respondents.

The third factor is the length of menstruation in 1 cycle where the length of menstruation (>7days) can affect the level of dysmenorrhea pain that causes uterine contractions to occur longer resulting in the uterus contracting more often, and more prostaglandins are removed. Excessive production of prostaglandins causes pain, while continuous uterine contractions cause blood supply to the uterus to stop and dysmenorrhea occurs [5].

According to respondent's efforts made to reduce menstrual pain is just rest or go k UKS to lie down without taking painkillers or foods that can contain painkillers because they do not yet know how to reduce the pain of menstruation.

Thus, according to researchers, efforts can be made to reduce pain during menstruation is to provide information on how to overcome pain during menstruation such as exercising and consuming foods that contain many nutrients such as avocado juice, spinach vegetables, nuts, potatoes, tofu, tempeh, and other foods that contain a lot of nutrients, this is better than taking analgetic drugs continuously.

### CONCLUSION

Based on the results of research that has been conducted on 30 respondents, the following conclusions can be drawn:

1. Before being given avocado juice the level of menstrual pain of young women in MTS Negeri 1 Bone Bolango mostly experienced moderate pain as many as 22 people (73%).

2. After being given avocado juice the level of menstrual pain of young women in MTS Negeri 1 Bone Bolango mostly decreased from moderate pain to mild pain as many as 25 people (83%) and painless as many as 5 people (17%).

3. Statistical test results paired t test sample obtained a sig value of  $0.000 < 0.005$ , thus  $H_a$  received and  $H_0$  means there is an influence of giving avocado juice to the decrease in *Dismenorhea* in young women in MTS Negeri 1 Bone Bolango.

For Further Researchers, the results of this study can be

For institutions, the results of this research can be used as a source for the development of scientific institutions where the results of this research can be used as reference material for further research.

For schools, the results of this study can provide information on how to overcome *Dismenorhea* in order to improve preventive efforts and further treatment in troubled young women.

For students, the results of this study can provide health information, especially in adolescents who have problems during menstruation and as an alternative to reduce menstrual pain or *Dysmenorhea* and can improve knowledge for students.

For professions, the results of this study can be used as an alternative that can be used by midwives or other health workers to cope with adolescents who experience *Dismenorheapain*.

### REFERENCES

- [1] Aprilyadi N, Feri HJ, Ridawati ID. *Efektifitas Hypnotherapi Terhadap Penurunan Nyeri Dismenorea Pada Siswi SMA PGRI 1 Lubuklinggau. J Perawat Indones.* 2018;2(1):10.
- [2] Delvi Hamdayani. *Pengaruh Pemberian Minuman Kunyit Asam Terhadap Penurunan Dismenore Primer Pada Mahasiswi Tingkat Ii Prodi S1 Keperawatan Stikes*

- Mercubaktijaya Padang. Menara Ilmu*. 2018;Xii(80):137-145.
- [3] Judha., dkk. 2012. *Teori Pengukuran Nyeri dan Nyeri Persalinan*. Yogyakarta : Nuha Medika
- [4] Khoerunisya Da. *Hubungan Regulasi Emosi Dengan Rasa Nyeri Haid ( Dismenore ) Pada Remaja*. 2015.
- [5] Kristianingsih A. *Faktor Risiko Dismenore Primer pada Siswi Sekolah Menengah Pertama (SMP X) Kecamatan Natar Kabupaten Lampung Selatan. J Aisyah J Ilmu Kesehat*. 2016;1(1):19-27. doi:10.30604/jika.v1i1.4
- [6] Larasati Ta, Alatas F. *Dismenore Primer Dan Faktor Risiko Dismenore Primer Pada Remaja*. 2016;5(3):79.
- [7] Lestari Nmsd. *Pengaruh Dismenorea Pada Remaja. Semin Nas Fmipa Undiksha Iii*. 2013:323-329.
- [8] Meylani C. P. Ndoen, Cicilia Wahyu Djajanti Yk. *Tingkat Nyeri Haid Primer Pada Mahasiswa. J Penelit Kesehatann*. 2019;6(2):89-96.
- [9] Muhammad Fajar Ma'arif , Donna Hermawati Rmda. *Pengaruh Pemberian Jus Alpukat (Persea Americana Mill.) Terhadap Motilitas Spermatozoa Tikus Wistar Yang Dipapar Asap Rokok*. 2019;8(2):832-840.
- [10] Nafiroh D, Dkk. *Gambaran Pengetahuan Remaja Tentang Dismenore Pada Siswa Putri Di Mts Nu Mranggen Kabupaten Demak*. 2013;4(1):157-166.
- [11] Pontoh Ah. *Pengaruh Pemberian Jus Alpukat Terhadap Penurunan Nyeri Dismenorhea Pada Siswi Kelas Xi Sma*. 2015;(110):48-53.
- [12] Rima Maratun Nida Dss. *Pengaruh Pemberian Kompres Hangat Terhadap Penurunan Nyeri Dismenore Pada Siswi Kelas Xi Smk Muhammadiyah Watukelir Sukoharjo (The Influence Of Warm Compress Decrease In Dismenorhea Eleventh Grade Students Of Smk Muhammadiyah Watukelir Sukoharjo)*. 2016;1(2):103-109.
- [13] Rustam E. *Gambaran Pengetahuan Remaja Putri Terhadap Nyeri Haid (Dismenore) dan Cara Penanggulangannya. J Kesehatan Andalas*. 2014;3(1):286-290.
- [14] Sugiarti RK& ST. *Hubungan Antara Kebiasaan Olahraga Dengan Kejadian Nyeri Haid Primer Pada Remaja. J Publ Kebidanan*. 2018;9(1):114-123.
- [15] Wahyuni RS, Oktaviani W. *Hubungan Indeks Massa Tubuh dengan Dismenore pada Remaja Putri SMP PGRI Pekanbaru. J Endur*. 2018;3(3):618. doi:10.22216/jen.v3i3.2723.
- [16] Widyastuti, Yani., Anita Rahmawati. 2009. *Kesehatan Reproduksi*. Yogyakarta : Fitramaya.