CONSUMING BANANA TO OVERCOME PREMENSTRUAL SYNDROME

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ABSTRACT

Objective: *Menstruation is normal monthly cycle of women in childbearing age. It is sometimes felt by periodic and complaints before getting it. Premenstrual syndrome is physical problems before getting period and will disappear when it is coming. The purpose of this research is to know the effectiveness of banana to decrease premenstrual syndrome.*

Methods: *This study used Experimental and Pre and Post-Test with Control Group design. The sample is 57 students , 27 students of experimental group and 30 students of control group. The exprimental group get Treatment group which consumes banana three times a day for two months. Premenstrual syndrome was observed before and after the sample consumed banana. Bivariate analysis was applied to do difference test of premenstrual levels before and after consuming banana using Paired Sample Test with significance level of 0.05. To know the difference between experimental and control group, this study applied Independent Sample Test with significance level of $p<0.05$.*

Results: *The finding shows that there is difference in the decreasing levels of premenstrual syndrome at the group before and after being given intervention that is $p<0.001$. Whereas, the sudenys in control group experienced increasing of premenstrual syndrome in pre and post-test that is $p=0.003$. Independent Sample Test got the score of $p<0.00$,it means there is a significant difference in the decreasing levels between experimental and control group.*

Conclusion: *Banana has so many benefits in health because it contains of vitamins. One of the benefits of banana is to decrease premenstrual syndrome. So, it is hoped that women in childbearing age are able to consume banana every day.*

Keywords: consuming banana, premenstrual syndrome

INTRODUCTION

Puberty is one life bilogical cycle of adolescence, it is the time a woman has the conception that with the onset of menarche (Sayogo, 2006). The young women who have menstrual syndrome can not be separated from the problem PMS / Premenstrual Syndrome (PMS), plus a variety of lifestyle factors make the symptoms of PMS is getting worse (Anthony, 2002).

Premenstrual syndrome, also known as Premenstrual Syndrome terminology, an accumulatuin of complaints and / or physical symptoms, emotional, and behavior that occurs in the reproductive women; which appeared in a cyclic period of 7-10 days before menstruation and disappear after the menstrual blood out. Many references has documented more than 150 physical symptoms, psychological, and behavior can be summarized as PMS

ISSN: 2223-9944, e ISSN: 2223-9553

(Suparman, 2011). Actually, if explored further, PMS problems are the most common health problems experienced by women, and it has implications on the daily activities both in social life, the environment, and the woman herself (Khomsan, 2007).

Clark (2004) in Suparman (2011) stated that the prevalence rate can reach 30% of the entire population of reproductive women o, and one third of them gets PMS severe degree. Strickler (1997) also states that the prevalence of STDs accounted for approximately 85% of the reproductive women population, and almost half do not seek medical attention. Only about 5% of those recorded as suffering from severe PMS degrees. Freeman (1995) said that at least 79% got PMS sufferers in the United States, it has confirmed for getting Premenstrual Dysphoric Disorder (PMDD) (Supaman, 2011).

The research finding of Khayat, et al (2014) stated that in Iran 80% of women sufferers PMS, 20% -50% had moderate PMS, and 55 women experience severe PMS. While the research finding of Maryam, et al (2015) states that 75% of women sufferers PMS, and 20% - 32% of women got PMS symptoms.

In contrast to the clinical manifestations of PMS that has been associated with cyclic disorders that arise during the period of premenstrual reproductive women, the etiology of PMS is still not clearly known. The results of the STDS conclude that the etiology of PMS is not actually a single, but an interaction is very complex set of hormones the ovaries, peptides endogenous opioids, various neurotransmitters, prostaglandins, by the circadian system, peripheral, autonomic and endocrine (Suparman, 2011).

PMS will be a significant impact on productivity decline in work, school and interpersonal relations. Borenstein (2004) reported a decrease in productivity of 436 patients with PMS were highly significant compared to the control, which is associated with complaints of difficulty of concentration, decreased enthusiasm, forgetfulness, irritability and emotional lability, and decreased ability to coordinate. The data showed higher numbers do not come to work for more than 5 working days per month, reduced work productivity by 50%, and higher incidence of disruption of interpersonal relationships and social activities, work or school on a group of patients with PMS (Supaman 2011).

The conservative approach is nutritional supplementation. Whytney and Sizer (2000) states that the main connection between PMS and nutrition focused primarily on energy metabolism and vitamin. Nutritional factors that play a role in reducing the symptoms of PMS consume foods that contain lots of vitamin E, vitamin B, Potassium, Calcium, Iron, and Magnesium. Two nutrients are widely studied because of its association with PMS is vitamin B6 and calcium. Vitamin B6 mentioned can help reduce feelings of depression in women caused by PMS. While calcium has long been known to have impact with the menstrual cycle. Clinical studies prove that calcium supplementation can reduce the physical and psychological disorders caused by PMS. Based on the reason, the necessary intake of Vitamin B6 is sufficient to reduce the emotional feelings that often happened to the women before menstruation. Bananas contain vitamin B6 and calcium, so it is best consumed every day women of childbearing age. Especially during pregnancy, lactation, or suffering of PMS (Khomsan, 2007). Bananas is highest of vitamin B6, which serves as an antidepressant that helps reduce its before menstruation. Vitamin B6 triggers increased hormone serotonin, which plays a role in providing energy for the brain. The release of serotonin affects a person's feelings, thus reducing excessive emotional feelings that arise when PMS (RSUA Web Team, 2013).

Based on the research finding conducted by Susan Thys-Jacobs an endocrinology specialist from St. Luke, S-Roosevelt Hospital Center in New York, calcium plays a role in alleviating

ISSN: 2223-9944, e ISSN: 2223-9553

premenstrual syndrome. Increased calcium intake affects estrogen levels during the menstrual period. It effects in menstrual cycle (Harahap, et al, 2008). Based on research conducted by Sarah RA, et al (2008) stated that as many as 70.5% of the sample had more than 5 symptoms of PMS and turns are often found in those with lower calcium intake.

THE PURPOSE

To determine the effectiveness of bananas to the decrease premenstrual syndrome.

MATERIALS AND METHODS

Experimental design type of research Pre Test - Post Test with Control Group Design. The research phase is 1) Pre Experiment Measurement is to do pre test of the experimental group and the control group., 2) Treathment which provides treatment in the experimental group given bananas 3 times a day for 2 months., 3) Post Experiment Measurenment is doing measuring to the experimental group and the control group.

The population is all students Departement of D3 Midwifery STIKes Muhammadiyah Lamongan are experiencing PMS numbered 60 students. Total population is 30 experimental group and 30 control group. There are three students who drop out of treatment because they do not regularly consume bananas and not leave diaries.

The data analysis used Bivariate analysis using Paired T test and Independent sample T test with significance level of $p < 0.05$.

1. The Respondents Age Experimental Group

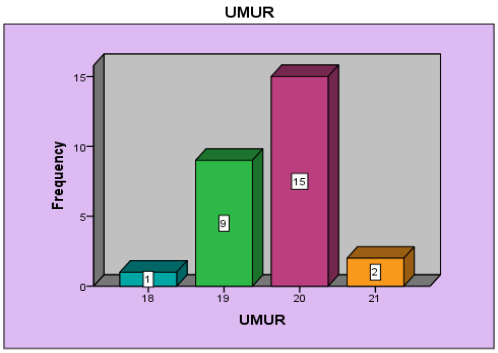

Figure 1. The Distribution of Respondents Age experimental group

Based on the figure above 1, it is known, the respondents are 20 years old, the total number is 15 students (55.6%).

2. The Respondents Age Control Group

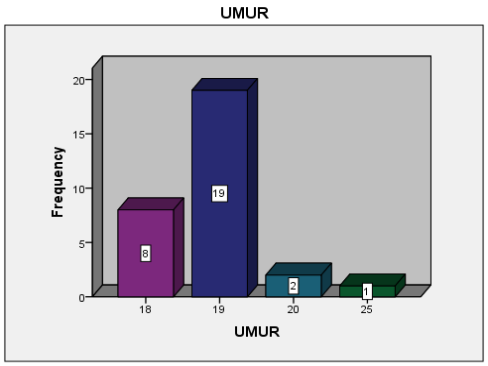

Figure 2. The Distribution of Respondents Age Control Group

Based on Figure 2, the respondents are re 19 years, 19 students (63.3%).

3. The Respondents menarche age Experimental Group

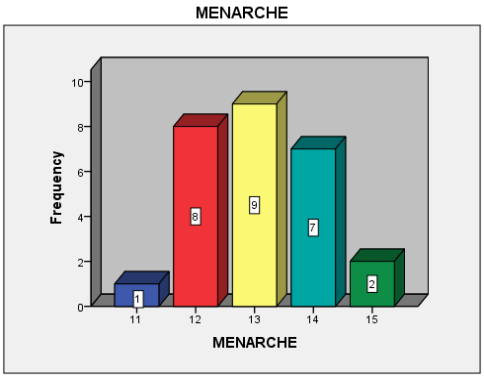

Figure 3. The Distribution of Respondents menarche Group

Based on the figure 3, the respondents of menarche are 13 years old, (9) students (33.3%).

4. The menarche age Respondents Control Group

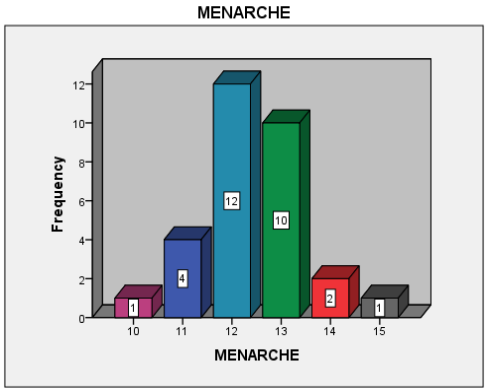

Figure 4. Age Distribution of Respondents menarche Control Group

Based on 4 pictures known that students in the control group almost half the age of menarche 12 years as many as 12 people (40%).

5. Distribution of respondents IMT Treatment Group

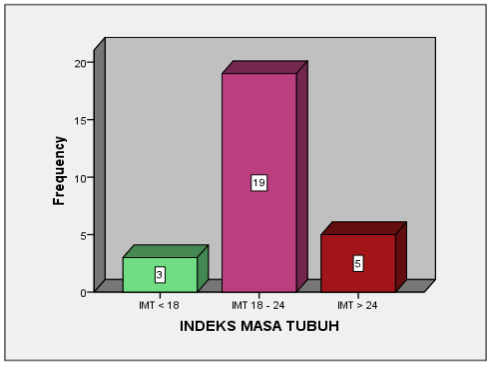

Figure 5. The Distribution of Respondents IMT Treatment Group

Based on the figure 5 picture above, the respondents are students BMI 18-24 (good nutrition) 19 students (70.4%).

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6. The respondents Menstrual Cycle experimental Group

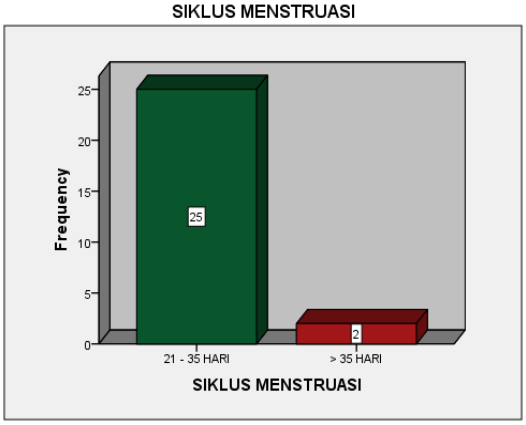

Figure 6.The Distribution of Respondents Menstrual Cycle Experimental Group

Based on the picture can be seen that the menstrual cycle is 21-35 days of 25 students (92.6%).

7. The respondents Menstrual Cycle Control Group

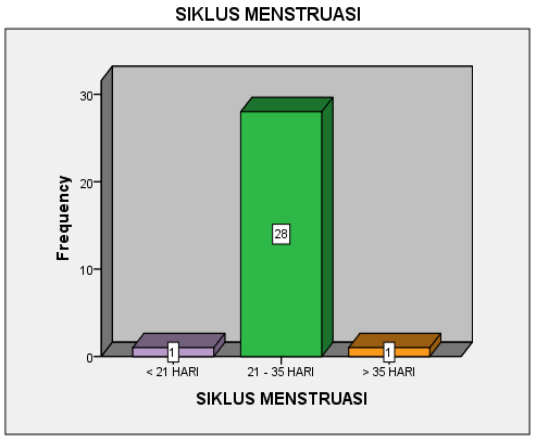

Figure 7. The Distribution of Respondents Menstrual Cycle exprimental group Group

Based on the picture above, it shows the menstrual cycle respondents are 21-35 days for 28 students (93.3%).

8. The respondents of long period Menstruation Experimental Group

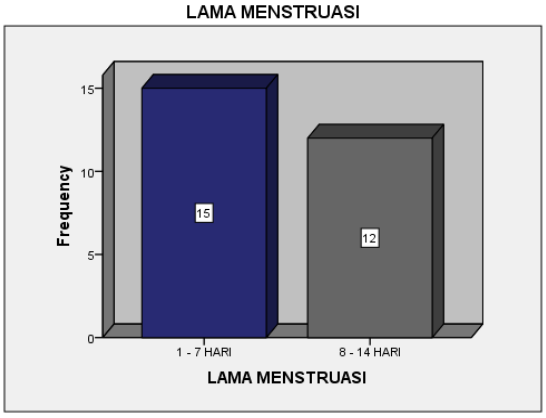

Figure 8. The Distribution of Respondents long period Menstruation experimental group

Figure 8 Based on the picture above, that long periods of 1-7 days menstruation is 15 students (55.6%).

9 The long period Menstruation Respondents Control Group

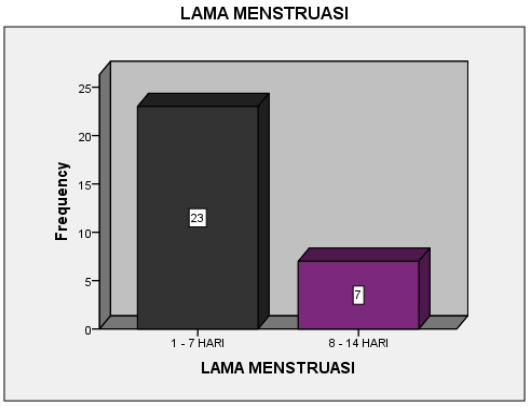

Figure 9. the Distribution of the long period menstruation respondents Control Group

The figure above shows that 1-7 respondents are 23 students (76.7%).

10. PMS before and after the experimental group

Table 1. The result finding of Paired Samples Test

		t	df	Sig. (2-tailed)
Pair 1	Pretest – Postest	11.992	26	.000

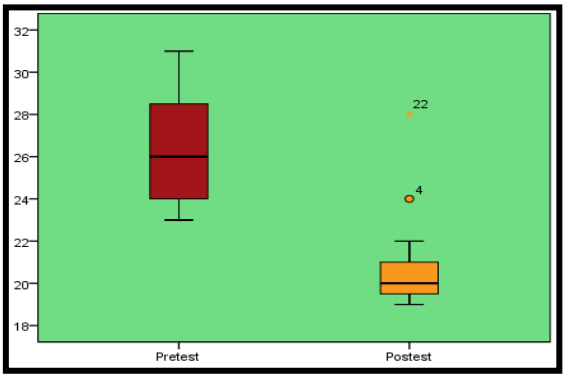

Figure 10. Pre Test dan Post Test experimental group

Based on the tables 1 and 10 shows that there is a decrease PMS symptoms in the treatment group before and after eating a banana. the resultshows of Paired Sample Test p <0.001, it means no difference.

11. Premenstrual Syndrome Before and after treatment Control Group

Table 2. The Results of Paired Samples Test

		t	df	Sig. (2-tailed)
Pair 1	Pretest - Postest	-3.194	29	.003

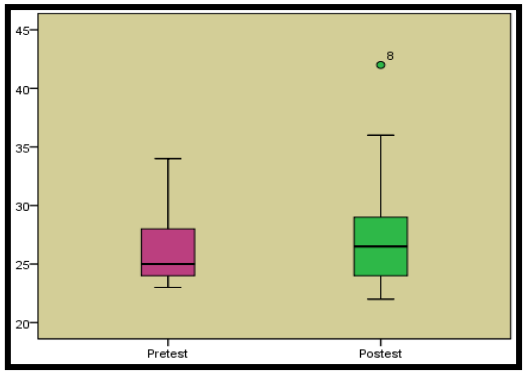

Figure 11. Boxplot Pre Test and Post Test control group

Based on the tables 2 and 11. it shows the increase in PMS symptoms in the control group in the initial assessment and the final assessment with the results of Paired Sample Test p <0.001

12. The difference in incidence of PMS Post Test on Second Group

Table 3. Independent Test Results

		t-test for Equality of Means		
		Sig. (2-tailed)	Mean Difference	Std. Error Difference
PMS	Equal variances assumed	.000	-8.83333	1.39673
	Equal variances not assumed	.000	-8.83333	1.39673

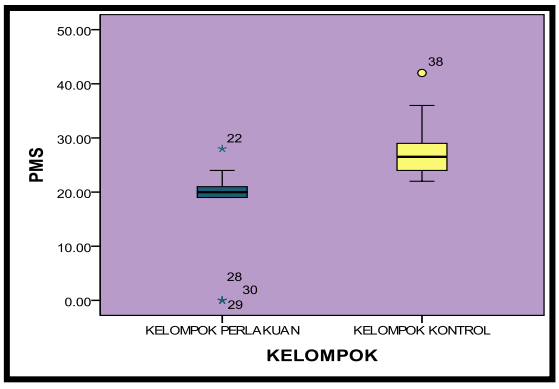

Figure 12. Boxplot the difference of PMS syndrome both group

DISCUSSION

This study states that statiscally, Based on respondents' age of menarche no relationship with PMS. The average age of menarche respondents treatment group and the control group was 12-13 years old. These results are supported by research Woods et. al in Nurmiaty (2011) that the symptoms of PMS is not associated with the age of menarche. While in the treatment group and the control group for a long menstrual average is ≤ 7 days which is the normal duration. From the results of other studies that women who experience menstrual long

ISSN: 2223-9944, e ISSN: 2223-9553

duration, more experienced anything cramps / pain PMS, irritability and depression (in Nurmiaty Woods et.al, 2011).

The value of body mass index (BMI) both groups are predominantly 18 - 24. This shows that BMI was not associated with the incidence of PMS, but there is a tendency STD incidence increased with increasing BMI. According to Mayo, JL in Nurmiaty (2011) mentioned that there was a significant relationship between weight of PMS symptoms, especially the state of discomfort in the abdomen. Many theories explain that obese women are more prone to experiencing PMS. Body fat affects the menstrual cycle. Adipose cells produce estrogen in obese women, estrogen circulation larger than normal women.

Results of statistical test by Paired Sample Test in the treatment group obtained p value <0.001. While the control group there was an increase of the initial evaluation of PMS symptoms compared to the final assessment is p-value of 0.003. Statistical test results Independent Sample Test results obtained p <0.001 which is less than 0.05, it means there is a difference between students who eat bananas and who do not eat bananas.

PMS in every woman is not the same, many women are not constantly sufferes and got symptoms every month. However, the PMS will be very disturbed woman to perform daily activities. PMS is characterized by the presence of physical and psychological symptoms that occur during the late luteal phase of the menstrual cycle and is associated with a major disruption in social relationships, lifestyle, and school performance. Although the pathophysiology of PMS is unknown, the interaction between ovarian hormones and neurotransmitters, mineral and vitamin deficiencies, and reduced levels of serotonin may play a role in the etiology of PMS.

Bananas as fruit is a source of energy and minerals, especially potassium. Banana has a variety of nutrients include carbohydrates, dietary fiber, pectin, tryptophan, tannins, polyphenols, phospholipase, potassium, magnesium, vitamin B6, folic acid, vitamin C, carotenoids (Hardiansyah, 2015). One banana contains of 30 grams carbohydrates, 1 gram protein, 0.5 mg of vitamin B6, manganese 0.3 mg, 9 mg vitamin C, 450 mg potassium, magnesium 34 mg, 25 mcg of folic acid, and riboflavin 0.1 mg . The increasing consumption of bananas can reduce the incidence of premenstrual syndrome because of their content of vitamin B6 and magnesium. It proves that vitamin B can affect the decrease PMS symptoms by helping the synthesis of neurotransmitters in the brain. Vitamin B2 as the formation of vitamin B6, which contributes to a serotonin, if high serotonin levels can reduce the occurrence of anxiety, depression, and headaches when sufferes from premenstrual syndrome. Vitamin B6 is also as the synthesis of prostaglandins and fatty acids that reduce the symptoms of PMS as well. In addition, vitamin B6 also increases dopamine. Dopamine reduces the incidence of edema or swelling in the extremities, and discomfort in the abdomen and chest.

One treatment approach is proposed to address PMS supplement therapy, including those containing magnesium (Mg). A banana contains of 34 mg of magnesium, under normal circumstances each individual needede 320 mg a day . According to Abraham in Fathizadeh N (2010) stated that magnesium deficiency as a cause of PMS. Magnesium controls neuromuscular stimulation resulting in a relaxing effect. The Better results for reducing the symptoms of PMS is a combination of vitamin B6 and magnesium. Magnesium reduces PMS symptoms such as bloating or water retention. Reviewing various studies on the effect of Mg on PMS symptoms indicate that at least two months is required for the effect of magnesium, as was done in this study. The students consumed bananas three times a day for 2 months.

ISSN: 2223-9944, e ISSN: 2223-9553

Other studies suggest that the diet high in protein with lots of fresh vegetables and fruit is recommended for patients with PMS. Some women get reduction in symptoms after eating more carbohydrates and salt. Banana is a fruit that contains a lot of carbohydrates, about 30 grams of carbohydrates contained in a banana (Devi, 2009).

Based on the research conducted by Fathizadeh N (2010) that the combination of magnesium and vitamin B6 showed that the highest effectiveness in reducing the symptoms of PMS. According to Facchinetti in Fathizadeh N et al (2010) reported the people who consume magnesium for two months group experienced a significant reduction in the severity of PMS symptoms. Selian, was also a significant decrease from water retention and pain. The results of another study conducted by Masoumi SZ, et. All (2016) showed that the decrease PMS symptoms in the two groups, but this decrease was significantly greater to the people who take calcium and vitamin B6. Vitamin B and Calcium plays an important role in the regulation of liver, psychological imbalance, especially symptoms of depression. This effect is related to serotonin production and metabolism. According to Khasanian (2007) in Masoumi SZ, et. All (2016) states that the use of 80 mg of vitamin B6 for two consecutive cycles decreased some mental symptoms, including irritability, anxiety, crying for no reason, forgetful, and a tendency to eat. It is also reported on the results of research conducted by Ebrahim et al (2012) that the respondents got supplements of vitamin B6 and asked to fill in diaries PMS for two months and the results of vitamin B6 efficiency is highest in reducing the symptoms of PMS with p value <0 05.

PMS and a lot of effects that occur in the women of childbearing age, health workers should be able to provide health education to reduce the severity of PMS. Since there is no definite etiology and treatment of this syndrome, many researchers have tried to find the best and most effective drug with the least effect to prevent STDs. This study was also conducted to provide another alternative in reducing the symptoms of PMS with natural materials and easily obtained without any chemicals effects. In addition health education regarding the improvement of health and nutrition is needed.

CONCLUSION

There are differences between students PMS symptoms experimental group with a control group of students.

ISSN: 2223-9944, e ISSN: 2223-9553

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ISSN: 2223-9944, e ISSN: 2223-9553