

The Effect of Youth's Healthy Packages on Premenstrual Syndrome

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Abstract—Most women of reproductive age have premenstrual symptoms which consist of emotional and physical symptoms. Many factors can affect PMS including physical activity, nutrition such as drinks containing calcium and ginger, massage and other factors. This study aims to determine the effect of a healthy package consisting of (exercise, giving ginger milk and effleurage massage) on premenstrual syndrome.

The design of this study was a quasi-experimental pre-post with control group. The research variables were measured in 2 groups, There are the intervention group and the control group. The number of samples in this study consisted of 38 girls in the intervention group and 38 girls in the control group with simple random sampling. The analysis used univariate (frequency distribution) and bivariate (T Test, Chi-Square).

The results showed that there was an influence between the effect of a healthy adolescent package (consisting of exercise, giving ginger milk and effleurage massage) on premenstrual syndrome.

Keywords— Pre Menstrual Syndrome, Exercise, GingerMilk, EffleurageMassage

Introduction

Premenstrual syndrome (PMS) is defined as recurrent physical and psychological symptoms that appear 7-14 days before the menstrual cycle and interfere with several aspects of a woman's life. The results showed that the menstrual cycle modulates the integration of emotional and cognitive processes in all women. Premenstrual syndrome (PMS) often occurs in teenage girls. Menstruation can be irregular, heavy and / or painful, especially in the first few years after menarche. 75% of women of reproductive age are affected, premenstrual symptoms are very common, ranging from emotional and cognitive to physical symptoms (Wiliam, 2012).

PMS consists of emotional and physical symptoms as well as functional impairment following premenstrual symptoms. Women with PMS respond differently to normal hormonal fluctuations. This susceptibility may involve the serotonin system, altered sensitivity of the GABAA receptor to the neurosteroid allopregnanalone, and changes in brain circuits involving emotional and cognitive function. Women with severe PMS had a higher prevalence of personality disorders ($p = 0.003$) than women without symptoms (27 % versus 0%), and were more likely to have personality disorder traits of odd-eccentric, dramatic-erratic, and anxious-timid ($p < 0.05$) (Lanza 2017).

PMS can also affect arterial stiffness, this is due to the presence of arterial stiffness that increases significantly during the luteal and menstrual phases (final follicle: 6.48 ± 1.07 , luteal: 7.1 ± 1.26 , menstruation: 7.12 ± 1.19 m / s, $p = 0.003$), while blood pressure peaked at that time. Sixty four (9.9%) suffered from STDs. More emotional regulation deficits were observed in the PMS group compared to the control group. In addition, there were more deficits of emotional regulation among

dominant psychological symptom subtypes and mixed symptoms compared to the dominant physical symptom subtype group (Reuveni et al. 2016).

Many factors can influence PMS including physical activity, nutrition, massage and other factors. Physical activity factors such as exercise can relieve PMS. Physical activity can increase endorphins, reduce estrogen and other steroid hormones, increase oxygen transport in muscles, reduce cortisol levels and improve psychological. Based on the results of the study, there was a relationship between risk factors, namely sports activity ($p = 0.002$) and the incidence of premenstrual syndrome (Rizka et al. 2016). Physical activity can reduce stress that triggers PMS. Based on the results of the study (Binbay 2017) states that the prevalence of premenstrual syndrome was found to be higher among students who were less extroverted ($P = 0.007$) and less conscientious ($P = 0.001$); and among students with higher neuroticism ($P = 0.000$).

Nutritional factors or food intake can also affect PMS such as calcium intake. Calcium can affect mood and behavior that occurs during menstrual syndrome. Research Jacobs and Susan (2000) also said that giving calcium was shown to significantly result in a 50% reduction in symptoms of premenstrual syndrome. High calcium intake can improve symptoms of mood disorders, behavior, pain, and water retention during the menstrual cycle. The main source of calcium comes from milk and other preparations.

The development of PMS management is very important to help every woman accept her condition. Management of menstrual pain is usually carried out through pharmacological and non pharmacological. Non-pharmacological pain management includes massage effleurage. Eflurage massage is a massage in the lower abdomen to the umbilical region to reduce pain when PMS and eventually the wellbeing of young women increases. According to (Perry 2009) management of PMS to reduce pain can be done non pharmacologically with massage. Based on this, the researchers conducted research on a healthy package consisting of exercise, giving ginger milk and efflurage massage on the level of premenstrual syndrome.

Methodology

The design of this study was a quasi-experimental, pre-post test with control group design, namely the research variable was measured in 2 groups, namely the intervention group and the control group. The intervention group carried out the intervention between 2 weeks after menstruation until the first 3 days of menstruation. During that time, the intervention group carried out light stretching exercises for 20 minutes every 2 days, were given ginger milk once a day and effleurage massage 5 minutes / day. The control group was managed according to the existing program. Measurements were made before and after the intervention through a questionnaire.

The research sample was adolescents who met the inclusion and exclusion criteria. The minimum number of samples in this study is 38 people in the intervention group and 38 people in the control group. Inclusion criteria: Adolescents aged 11-21 years, already menstruating, history of smooth menstruation every month, Experiencing PMS, Willing to be research subjects, No history of taking analgesic drugs when menstruating. Exclusion criteria: Known disease of the uterus or ovaries. Samples were selected by simple random sampling.

Researchers asked respondents to fill out a pre-test questionnaire before giving. Intervention. After filling out the initial questionnaire, respondents in the treatment group were given a healthy package training for adolescents consisting of exercise, drinking ginger milk and effleurage massage. . The intervention group carried out the intervention between 2 weeks after menstruation until the first 3 days of menstruation. During that time, the intervention group carried out light stretching exercises for 20 minutes every 2 days, were given ginger milk once a day and effleurage massage 5 minutes / day. Meanwhile, the control group was managed according to the existing program. The control group was provided with a checklist sheet for the implementation of the youth health package intervention. Observation of the implementation was carried out by the enumerator. After the intervention was carried out the respondents filled out a post test questionnaire.

In this study, the analysis was conducted to describe each variable being measured including the independent variable and the dependent variable. The analysis to be carried out is univariate with frequency distribution and bivariate with unpaired T test, paired T test, Mann Whitney, Chi-square

RESULTS

1. Description of PMS between the Treatment and Control Groups

Table 1.1 Description of PMS between the Treatment and Control Groups

Variable	Intervention	P Value	Control	P Value
	n=38		n=38	
Before				
- X (SD)	23,66 (8,6)		24,16 (7,9)	
- Median	23	-	24	-
- Range	10-46		10-40	
After				
- X (SD)	16,05 (8,3)	0,000*	19,95 (7,9)	0,001*
- Median	15,5		19	
- Range	1-32		8-37	

*T Test

Based on the table above, it can be seen that in the treatment group, the average PMS score after intervention decreased by 7.61 (PMS score before intervention 23.66 and PMS score after intervention 19.9) with a P value of 0.000. This is different from the control group which showed that there was a decrease in the PMS score of 4.21 (PMS score before intervention: 24.16 and PMS score after intervention 19.9) with P Value: 0.001. Based on these data, it can be seen that the PMS score after being given the healthy package intervention for adolescents in the treatment group was lower than the PMS score in the control group.

2. The Influence of Healthy Packages for Adolescents on PMS In The Treatment And Control Groups

Table 2.1 Effect of healthy packages of adolescents on PMS in the Treatment and Control Groups

Variable	Group		P Value
	Intervention	Control	
	n=38	n=38	
- X (SD)	16,05 (18,3)	19,9 (7,9)	0,04*

*T Test

Based on table 2.1, the results of the PMS score bivariate test were carried out after an investigation of the healthy package of adolescents with a P value of 0.04 (<0.05). It can be assumed that there is an effect of giving adolescent healthy packages consisting of exercise, effleurage massage and ginger milk on Pre Menstrual Syndrome soreness. The group given the adolescent healthy

package had a lower PMS score (16.05) than the control group who was not given the adolescent healthy package (19.9).

DISCUSSION

Premenstrual syndrome (PMS) is defined as physical symptoms and repetitive, repetitive behaviors that occur 7-14 days before the menstrual cycle (occurring in the luteal phase of the menstrual cycle) and interfere with a woman's life. PMS is thought to affect up to 40% of women who are menstruating, and the worst cases occur in 2% -5% of women between the ages of 26 and 35. PMS have been recognized as medical disorders for many years; however, the cause is not yet known with certainty. Increased prolactin, a hormone primarily involved in regulating breast development during pregnancy, has been linked to PMS, menstrual irregularities, and breast tenderness, while low thyroid hormone levels can contribute to depression, fatigue, and heavy periods. (Anon n.d.) (Hoyer et al. 2013).

The results showed that all respondents experienced PMS symptoms from mild to severe levels. After being given the adolescent healthy package intervention, the treatment group had a lower PMS symptom score than before the treatment. The decrease in PMS symptom scores in the intervention group was lower than in the control group. This is in line with the theory that 5-8% of women have moderate to severe PMS symptoms. However, several studies have shown that up to 20% of all women of childbearing age have PMS complaints that clinically affect their physical condition. Other studies have shown the prevalence of PMS as much as 78.7%. PMS is a common problem among women of reproductive age which has a negative impact on the quality of life and productivity of women. These findings indicate that many young women feel ashamed and reluctant to report PMS and consequently they do not receive health services, which affects their daily activities. (Ashfaq 2017)

Exercise makes the muscles contract regularly also contributes to angioedema in physical activity, resulting in prostaglandins increasing the amount of other substances and preventing accumulation in the pelvis and reducing back pain and abdominal discomfort. Therefore, exercise, which is a series of muscle contractions, also contributes to the muscular endurance of the abdominal region and, on the other hand, helps the movement of prostaglandins, which can reduce muscle soreness in the upper body, especially the stomach and muscles. lower back. (Alikiani et al. 2017) (Syndrome 2017). Exercise affects circulating steroid hormone levels in women of reproductive age and this is what may cause exercise to relieve symptoms of premenstrual syndrome (PMS). Increased levels of endorphins due to exercise can lead to reduced depression and improve mood and pain perception. Exercise may play a role in distracting distracting thoughts and promoting positive thinking, reducing short-term depression, improving mood and habits. Exercise training can increase progesterone levels in the luteal phase, this may be effective in reducing several symptoms including drowsiness and depression (Silvana, 2012). (Kusumawardani & Adi 2017)

Milk contains Calcium. Calcium can affect mood and behavior during menstrual syndrome. The recommended daily intake for calcium is 1000 mg / day. Research Jacobs and Susan (2000) also said that giving pure calcium was shown to significantly result in a 50% reduction in symptoms of premenstrual syndrome. A high calcium intake of 1,336 mg / day can improve symptoms of mood disorders, behavior, pain, and water retention during the menstrual cycle.

One theory that explains the causes of dysmenorrhea is the contraction and vasoconstriction theory. Other studies have shown that giving calcium 1,200 mg / day to women aged 18-45 years reduces pain that arises before and during menstruation compared to giving placebo. (Tih et al. 2017) .

Ginger is a type of spice and herbs and can also be used for medicinal properties. Ginger has a

warm spicy taste. Ginger with anti-inflammatory function inhibits prostaglandin production. Ginger is a safe therapy for pain relief in women with primary dysmenorrhoea at the start of menstruation until the 3rd day of menstruation. (Amelia & Isna 2017). Ginger contains gingerol. One of the health benefits of ginger is to reduce inflammation, swelling, and pain. [6]-gingerol (Jewell & Young 2003), dry ginger extract, and dry gingerol enriched extract (Minghetti et al. 2007) exhibited strong analgesic and anti-inflammatory effects. The data suggest that ginger may exhibit anti-inflammatory effects through modulation of calcium levels mediated via the potential of the transient subtype 1 vanilloid receptor (TRPV1), which is a heat and pain receptor that can interact with [6]-gingerol (Dedov et al. 2006). [6]-gingerol has been reported to induce a substantial increase in intracellular calcium levels in the renal tubular cells of Madin-Darby renal by stimulating both extracellular calcium entry and thapsigargin (endoplasmic reticulum Ca²⁺ + pump inhibitor) sensitive intracellular calcium remover (Chung-Yi Chen, Ching-Hsein Chen, Chiu-Hu Kung 2008). Gingerol is known as a TRPV1 agonist (Dedov et al. 2006), and [6,8,10]-gingerol and [6,8,10]-shogaol can increase intracellular calcium concentration in HEK293 cells expressing TRPV1 via TRPV1 (Iwasaki et al. . 2006). Shogaol appears to be stronger than gingerol, and most of the compounds induce an adversarial or nociceptive response mediated by TRPV1 when applied to the eye or after subcutaneous injection into the hind limb, respectively (Iwasaki et al. 2006). In this regard, most of the ginger compounds also promote adrenal catecholamine secretion, which affects energy consumption (Iwasaki et al. 2013).

Effleurage massage is a massage in the lower abdomen to the umbilical region to reduce pain when PMS and eventually the wellbeing of young women increases. According to Potter & Perry (2009) management of PMS to reduce pain can be done non pharmacologically with massage.

Effleurage massage is in the form of gentle, slow and long strokes or not intermittent. This technique has a relaxing effect. Effleurage is done using the tip of the finger that is pressed gently and lightly. Apply light strokes and without strong pressure, but keep the fingertips from leaving the skin surface. The benefits of effleurage massage are to relieve pain, improve blood circulation, warm the abdominal muscles and increase physical and nervous relaxation. The results of the study (Adiputri et al. 2018) Lavender oil therapy using effleurage massage techniques effectively led to a significant reduction in the intensity of dysmenorrhea.

CONCLUSION

There is an influence between the healthy package for adolescents with Pre menstrual syndrome. Based on the results of the study, it is recommended that the adolescent healthy package influence package which consists of (exercise, giving ginger milk and effleurage massage) is recommended to reduce symptoms of Pre menstrual Syndrome.

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