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RESEARCH ARTICLE

THE EFFECTIVENEES OF COUNSELING WITH LEAFLET MEDIA ON KNOWLEDGE AND ITS RELATION TO BEHAVIOR AS WELL AS REDUCTION OF PMS SYMTOMS

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ABSTRACT

Introduction: Pre Menstrual Syndrome (PMS) is a collection of symptoms that often appear and occur in young women, including in school-age girls who often interfere in the process of learning activities. Providing knowledge about the definition, symptoms, and cause to reduce symptoms, is expected to eliminate or reduce symptoms.
Objective: The purpose of this research is to know the effectiveness of counseling with leaflet media on knowledge and its relation to behavior and its impact on reducing Prementual Syndrom (PMS) symptoms on student.
Method: The research design used quossi experiment with sampling technique by Accidental sampling. The collection is done by questionnaire using a checklist format. Data processing using SSPS program Version 19. The analysis is done by univariat and bivariate with independent t test (Un-Paired) and Chi-Square test, with α (p = <0,05) at 95% Confident Interval (CI).
Results: The results of this study of 98 respondents showed the most symptoms complained at the time of PMS is menstrual pain (77.8%) and feelings want to get angry (82%). The mean score of post-test knowledge in study group was 5.9 points greater than the control group (78 ± 10.58 vs 72.15 ± 16.5). The calculation of t test statistic Un-paired value of t = 3.049 with p = 0,038 indicating that there is a significant difference. The measurement of the 2nd menstrual cycle (3 months post-intervention) showed a correlation between knowledge with behavior, with a p value of 0.035 with POR (Prevalence Odds Ratio) of 2.81 (95% CI: 1.16 - 6.79.) . On the measurement of symptoms within the next 3 months, the percentage of symptom reduction was reduced to 83.3% from 59.7% with a p value of 0.02 with POR value of 3.431 (95% CI: 1.28 - 9.22).
Conclusion: counseling with media leaflets (study groups) is more effective than counseling with in-focus media (control groups). The behavioral of PMS symptoms and the effect on the reduction of PMS symptoms are seen after 3 months post-intervention.

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INTRODUCTION

Pre-menstrual syndrome (PMS) is common in the younger age group and it is a part of the general health problem of adolescent girls. Pre-Menstrual syndrome (PMS) is a symptom of physical, mental, and behavioral disorders including social and interpersonal disorders. Symptoms of PMS appear in the luteal phase of the menstrual cycle and the disorder appears in about 85% - 90% at reproductive age (Abdollahifard *et al*., 2014). According to Hoyer *et al*. (2013) in his study showed a significant increase (p = 0.001) in emotional conflicts in women with PMS and showed an increase in physiological measures during that phase. The symptoms that arise before the menstrual period interfere with daily activities in adolescent girls.

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According to Dickerson *et al* in Devi (2009) as many as 85% of girls when menstruating experienced one or more symptoms of premenstrual syndrome. While in research Ruhana in (Devi 2009) showed that equal to 87,2%. female students of the Bogor Agriculture Institute (IPB) have premenstrual syndrome. Dalton research in (Devi 2009) found 40-50% of the all female population, there are sociological signs associated with PMS. In addition to physical and social disorders also reported other disturbances. As the results of the study that Pre-Mentrual Syndrome affect the occurrence of emotional and cognitive processes in parallel (Hoyer *et al*., 2013). The cause of PMS is definitely not known, but lifestyle habits such as regular exercise and taste selection are known to have a relationship. Tadakawa *et al*. (2016) conducted a research on high schoolfamale students in Japan which aims to know how the premenstrual symptoms affectred teaching and learning process and whether was a factor in school attendance caused by their pre menstrual symptoms. The research result

showed that one of nine high school famale students in Japan was absent from school caused by pre menstrual symptoms. From the results isknown lifestyles such as love salty food, rarely doroutine exercise, is known as risk factor for absent at school. Severe pre-Mentrual Syndrome is accompanied by decreased daily activity, and symptoms of psychological stress. Older age, rural dwellings, early menarche age, regular menstrual cycles and a positive family history may be a risk factor for pre-menstrual syndrome (Magdy Hassan Balaha1 and MostafaAbd El Monem Amr2, Mohammed Saleh Al Moghannum3 2010) .In situations such as depression, anxiety, aggressive, sensitive personality in the Pre-Mentrual Syndrome group. Significantly higher than the healthy group ($p < 0.005$), and increased the pain of PMS from mild to severe (Reihanefiroozi MSc 1 Mousakafi Ph.D2 Irajsalehi Ph.D 3 Maryam shirmohammadi 2012). Some behavioral efforts to reduce PMS symptoms can be done, among others, by taking thiaminime and riboflavin and food sources will be inversely related to the incident of PMS. Examples of women with the highest quintil riboflavin consumed 2-4 years before diagnosis had a 35% lower risk of developing PMS than the lowest quantil riboflavin (relative risk: 0.65: 95% CI: 0.45, 0.92: P value = 0.02) (Chocano-bedoya *et al*., 2011).

High prevalence and evenly distributed and negative effect PMS towards female students at Mekelle University. Consumption of thiaminime and riboflavin and food sources will be inversely proporsitional to the incident of PMS. Examples of women with the highest quintil riboflavin consumed 2-4 years before diagnosis had a 35% lower risk of developing PMS than the lowest quantil riboflavin (relative risk: 0.65: 95% CI: 0.45, 0.92: P value = 0.02) (Chocano-bedoya *et al*., 2011). Abdollahifard *et al*. (2014) in epidemiologic studies have reported that 5-8% of women of childbearing age have mild pre- menstrual symptoms until severe, and this interferes their daily activities, the combination of calcium and vitamin B6 is used as a control towards the symptoms of premenstrual syndrome. Therefore, it is recommended to use a combination of calcium and vitamin B6 for women suffering from this syndrome. Some efforts to reduce symptoms of PMS, one of its efforts is to provide information through counseling to all women who have the potential to experience symptoms of PMS. Especially school-age adolesent, because the impact is very large on their teaching and learning activities in the classroom as well as at home. Therefore, special health education on ways or behaviors attempt to reduce the symptoms that arise during menstruation. Forms of effort are to provide appropriate treatment and counseling services, as part of the overall health service should be utilized and provided for such (Tolossa and Bekele 2014).

Objective

To know the effectiveness of counseling with Leaflet media on knowledge and its relation to behavior and reduction of symptoms of Pre-Menstrual Syndrome (PMS) in famaleHigh School students.

Research Question

- what is the frequency distribution of PMS symptoms?
- How is effectiveness of counseling with Leaflet media to knowledge of PMS?
- Is there a correlation between knowledge on the behavior of reducing symptoms of PMS?
- Is there a Behavioral relationship with the reduction of symptoms of PMS?

Hypothesis

- Counseling with Leaflet media is more effective than counseling with in Focus media.
- There is a relationship between knowledge of PMS and behavioral reduction of PMS symptoms.
- There is a relationship between the behavioral reduction efforts of PMS symptoms with reduced symptoms of PMS.

MATERIALS AND METHODS

The design of this research is quossi experiment that is doing intervention in counseling group with the aid of Leaflet media and in control group (non Leaflet) in the form of counseling about PMS with in Focus media, then measured the result before and after intervention in the same group and also done measurement of knowledge and reduction of symptoms in different groups. The sample in this study are a small proportion of High School famale Students who experience symptoms of PMS, both physically and psychologically with inclusion criteria: active students, have regular menstruation 21-35 days, 3 – 10day period, not pain mental, not bereaved, do not have physical illnesses like DM, Hypothiroidsm, no post-surgical treatment in the last 3 months, do not take sedative and notdiet. The Determination of the sample waschosen to be carried out by Accidental sampling, the screened sampleshad at least 3 symptoms of PMS and fulfilled the inclusion criteria. The next sample is divided into 2 groups by drawing the study group (counseling with Leaflet media) as many as 49 samples and the rest of the control group (counseling with LCD media) as many as 49 samples.

Data Collection Procedure

Selection Stage

Selection of respondent cases based on inclusion criteria and at least have PMS symptoms. There were 98 respondents divided into study groups (49 respondents) and control group (49 respondents). At this stage do informed concern for willingness to voluntarily becomea respondents.

Intervention Stage

Intervention for the study group

Conducting a PMS counseling meeting on each respondent with material definition, symptoms, causes and efforts to prevent and reduce symptoms of with the help of leaflet media. Further consultation via social media (WA = WatsApp).

Intervention for control group

Conducting Counseling about the definition, symptoms, causes and efforts to prevent and reduce symptoms of PMS with the help of LCD media.

Measurement and Evaluation stage

Measurements and evaluationwere done twice in the study group and control group. The first measurements were performed at 1-1.5 months (measurement on the first cycle) and the second measurement in the next 1-1.5 months

(measurement at the second cycle). Measurement and evaluation materials: knowledge, behavior and PMS symptoms.

- Measurement and evaluation of knowledge in the form of percent of answers divided into categories good (> = median) and poor (<median)
- Behavior: based on 8 items to reduce symptoms of PMS (exercise regularly, enough sleep (7-8 hours), eat vegetables and fruits, recreation, avoid lots of salt consumption, avoid lots of sugar, eating grains and eating lots of snacks), with a choice answers: always, often, sometimes, ever and never (score range: 5,4,3,2,1). The number of behavior scores is divided into 2 categories: good (> = median) and poor (<median)
- Reduction of symptoms both physical and psychological. Reduction of symptoms divided into 2 categories: reduced (if there is a reduction in the number of physical and psychological symptoms than before)

Research Period

The Research was conducted for 4 months 1 month of preparation and 3 months for the research process began Screning until the last measurement, which began in June 2017 - September 2017.

Data Processing and Analysis

Data processing using SPSS Program Version 19.Univariate statistical analysis in the form of prevalence and bevariate with t-dependent test to see the effectiveness of study group and control group, while to see the relation of knowledge to behavior and behavioral relationship to symptom reduction using statistical test of chi- square, with α <0.05, 95% CI.

RESULTS

Interpretation of Table 1

Based on Table 1. above, it appears that physical symptoms that have the highest percentage of symptoms experienced by the respondents are, pelvic pain (60.2%), Acne (57.1%) and menstrual pain (77.6%), while psychological or emotional symptoms experienced by many respondents are: reduced concentration (59,6%), feeling of want to anger (82,7%).

Interpretation of Table 2

The difference in mean score of post-test knowledge in the study group was 5.9 points biggerr than the study group (78 ± 10.58 vs 72.15 ± 16.5). the result of statistical calculation test of "t" Un-paired value of t = -2,181 with p value of 0.032 indicates that there is a significant difference between the study group and the control group to the knowledge or indicate the PMS counseling intervention with the help of the leaflet more effectively than counseling with the infokus media.

Interpretation of Table 3

From the measurement result of the behavior of the effort to reduce the symptoms of PMS, in the first cycle measurement obtained p value 0.449 which shows no correlation knowledge to behavior on the first measurement (+ 1.5 months) with POR 1.5 (95% CI: 0, 65-3,41) which means good knowledge in the first measurement has a 1.5 times chance of behaving well in an effort to reduce PMS. While on the secondmeasurement there is a statistically significant difference, with a value of p

Table 1. Distribution of frequency of respondents based on physical and psychic symptoms (n = 98)

NO	Physical Symptoms	Σ	Prevalence (%)	NO	Psychological	Σ	Prevalence (%)
1.	Pelvic pain	59	60,2	1.	Depressed	26	26,5
2.	Appetite increases	30	30,6	2.	Often anxious	27	27,6
3.	Acne	56	57,1	3	feelings of wanting to cry	39	39,8
4.	Heart palpitation	28	28,6	4	Be aggressive	33	33,7
5.	Sensitive to sound	9	9,2	5.	often forgetful	28	28,6
6.	Breast swelling	25	25,5	6.	Hard to sleep	32	32,7
7.	Flatulence	25	25,5	7.	Feel tense	20	20,4
8.	Weight increases	10	10,2	8.	Want to get angry	81	82,7
9.	Headache	45	45,9	9.	often suspicious	34	34,7
10.	Pain when menstruation	76	77,6	10.	The concentration decreases	46	46,9
11.	Feelings of weakness	41	41,8	11.	Feel less secure	23	23,5
				12.	Feeling suicidal	1	1
				13.	Want to be alone	42	42,9
				14.	Feel guilty	21	21,4
				15.	Often confused	17	17,3

Table 2. Comparison of knowledge values in the study and control group post-intervention

No	Group	Everage	SD	Un-paired 't' value
1	Study group	78,2 %	10,2	t = -2,181
2	Control group	72,1 %	16,5	*p* = 0,032

Table 3. Knowledge relationship with behavioral reduction effort of PMS symptoms

No	Knowledge	Behavioral in first cycle				Total	value	POR
		Good	%	Poor	%		*p*	(CI. 95 %)
1	Good	38	67,9	18	32,1	56		1,50
	Poor	24	57,1	18	42,9	42	0,449	(0,65-3,41)
		Behavioral in second cycle					0,035	2,81
2	Good	45	80,3	11	19,6	56		(1,16-6,79)
	Poor	24	57,1	18	42,9	42		

Table 4. Relationship of behavioral efforts measures to reduce PMS symptoms to reduce PMS symptoms

No	Behavioral	PMS symptoms on the first cycle				Total	Value *P*	POR CI 95 %
		reduced	%	Not reduced	%			
1	Good	37	59,7	25	40,3	62		2,17
	Poor	15	41,7	21	58,3	36	0,102	(0,94-4,97)
		PMS symptoms on the second cycle					0,024	3,43
2	Good	60	83,3	12	16,7	72		(1,28-9,22)
	Poor	16	61,5	10	38,4	26		

0.035 which shows there is a relationship between knowledge and behavioral efforts to reduce symptoms. The value of POR (Prevalence Odds Ratio) of 2.81 (95% CI: 1.16 - 6.79.) Means that the ones with good knowledge in the 3rd month after the intervention have an opportunity of 2.81 times and the behavior is also good effort to reduce the PMS symptoms

Interpretation of Table 4

Table 4 shows there is no difference in the proportion of reducingon first measurement (59.7% VS 41.7%) with p value 0.102 and POR value of 2.17. While in the second measurement there is a difference of proportion (83.3% VS 61.5%) with p value 0,024 and POR value equal to 3,43.that shows there is relation between behavior with reduction of PMS symptoms at second or 3 months of post intervention

DISCUSSION

Symptoms of PMS: These symptomsarea part ofmain symptoms of PMS. The Symptoms of illness include anxiety / stroke, mood swings, pain, appetite / food cravings, cramps, and decreased interest in activity (Freeman *et al*. 2011). A fairly high percentage of physical disorder for teenagers (school age) can interfere their activities. A study conducted by to Sut and Mestogullari (2016) showed that Nurses with PMS have decreased their quality of life-related work in their professional lives. Several methods to help overcome the symptoms of premenstrual cycles have been applied, and consequently, productivity and quality of life associated with work can increase. As described by Setianingsih (2013) stated that PMS is a health disorder experienced by women of childbearing age, characterized by uncomfortable symptoms before menstruation. It usually occurs for 7 - 10 days and ends 4 days after starting menstruation. Premenstrual syndrome in adolescents can decrease attendance in the classroom, interfere of daily activities, and may affect the academic activities of these adolescents. Severe sociological signs result in the disorder, this occurs in 40-50% of the entire female population. From the results of the study also concluded that 70-90% of the population admitted experiencing PMS symptoms. Repeatedly and 20-40% report the presence of physical and mental symptoms so severe that it obstructs daily activities (Mufidah 2014). The incidence of PMS, not only in school-age adolescents but also the high prevalence of Premenstrual Syndrome (PMS), occurs in about 70-90% of women of childbearing age and is more common in women aged 20-40 years (Nashruna *et al*., 2012). Symptoms of PMS include physical changes, mood swings, and mental changes. Physical changes, including: backache, abdominal bloating, full breast and pain, appetite changes, constipation, dizziness, fainting, headache, pelvic area feels heavy or depressed, Symptoms that appear in each woman are different both the number and variations Mufidah 2014). These symptom are very disturbing activities including learning activities for young students.

As the results of a study conducted by Delara *et al*. (2012) of 336 female students stated 18 students. Were absent results showed that of 318 students who studied about the length of menstruation had an average duration of 7.2 days (SD = ± 3.31) and during that time they experienced a lack of comfort in the body. Even according to (Ducasse *et al* 2016) in certain circumstances, it can be aggressive / hostile, anger, affect the nature of the intensity and nature of lability. The results of Potter *et al*. (2009) showed that 4.1% of women had severe PMS (six symptoms) and 8.1% varied PMS symptoms (one to five symptoms). From the results of this study showed as many as 12.2% of women reporting PMS symptoms that affect their daily lives.

Comparison of knowledge value in the study and control group after post intervention

Knowledge of PMS and its mitigation efforts are the first step to establish attitudes and behaviors. In a study of attitudes and behavioral are not illustrated, but they certainly will formally be formed behavior. In a study on Prevalence, impacts and medical management of premenstrual syndrome among female students, by Tolossa and Bekele (2014) showed the prevalence and negative impact of high PMS on students University of Mekelle, and suggests the need for appropriate health education, medical care and counseling services, as part of the overall healthcare service. Events can be the impact of PMS. As the results of research Tadakawa *et al*. Obtained of 11,9% included in absent category have significant difference of all pre menstrual symptoms (P <0.001), in the salty food group (p = 0.001), and lack of regular exercise (20%), p = 0.03) between absent and present groups. Multivariate analysis showed that premenstrual symptoms such as insomnia or hypersomnia had OR = 2.27, 95% confidence interval (CI: 1.46-4.17) and physical symptoms OR 2.24, (95%, CI: 1.37 - 3,66), reduced social life activity OR = 2.71 (95% CI 1.31-5.59), and preference for salty foods (OR 1.89, 95% CI: 1.20-2.98) are all are risk factors for school attendance. The results of this study is a series of responses from the value of knowledge owned by respondents, meaning that the behavior that appears consumption of salty foods, lack of exercise, insomnia (lack of sleep rest) is a risk factor of PMS symptoms. In the research results Freeman *et al*. (2011) assessed six internal symptoms made in diaries to differentiate PMS and not PMS in women seeking treatment and were significantly associated with functional disorder.

The results show that reduced daily loads are decreased

The results above show that health and education authorities need to recognize the problem and provide real, tangible and emotional support for female students who experience premenstrual disorders in school especially for those suffering from PMS. In addition, there is a need to build and strengthen school-based reproductive health education programs so that

female students can learn to overcome this disturbing problem. Future research should focus primarily on the implementation and evaluation of school-based health education programs on this topic (Delara *et al*., 2012). Besides illustrating the importance of giving health education with education method of health education especially reproductive health about pramenstrual syndrome, 77,4% for adolescent since early age, one of them about respondent syndrome has good knowledge level, 22,6% pramenstrual. This is because some parents, especially mothers not repsonden have a level of knowledge enough and never educate his daughter about the various existing respondents who have less knowledge level (Amelia n.d.2014).

The Relationship of knowledge to Behavior Efforts to Reduce PMS symptoms

Knowledge of PMS and its mitigation efforts is the first step to establish attitudes and behaviors. In his research attitude and behavior are not illustrated, but certainly will formally formed behavioral. As the results of research Tadakawa *et al*. (P <0.001), in the salty food group (p = 0.001), and lack of regular exercise (20%), p = 0.03) between absent and present groups. Multivariate analysis showed that premenstrual symptoms such as insomnia or hypersomnia had OR = 2.27, 95% confidence interval (CI: 1.46-4.17) and physical symptoms OR 2.24, (95%, CI: 1.37 -3,66), reduced social life activity OR = 2.71 (95% CI 1.31-5.59), and preference for salty foods (OR 1.89, 95% CI: 1.20-2.98) all of these are risk factors for school attendance. The results of this study is a series of responses from the value of knowledge owned by respondents, it means that the behavior that appears consumption of salty foods, lack of exercise, insomnia (lack of sleep rest) are a risk factors of PMS symptoms. Referring to the conclusion of the results of the Cognitive-Behavior Therapy (CBT) evaluation by Ussher andPerz (2017), that CBT.can have a beneficial effect in reducing premenstrual and premenstrual symptoms, distress, and in improving premenstrual handling. In the research results Freeman *et al*. (2011) assessed six internal symptoms made in diaries to differentiate PMS and not PMS in women seeking treatment and were significantly associated with functional impairment. The results show that reduced daily loads are reduced

The Relationship of Behavior Efforts to reduce PMS Symptoms

The results showed those with good behavior, as many as 59.7% of PMS symptoms in 1.5 months decreased, with p value 0.449 and POR value 1.5 (95% CI: 0.65 - 3.41). While in the next 3 months behavior measurement, obtained a percentage increase where those whose good behavior behavior as much as 83.3% symptoms of PMSnya decreased with a value of p 0.02 which indicates there are behavioral effects on the reduction of PMS symptoms in the last 3 months with a POR value of 3.431 (95% CI: 1.28 - 9.22). Lifestyle (eating habits and stress avoidance) is part of behavioral studies to reduce PMS symptoms. Stress for school teachers including school-age teens can be caused by various things. The results show that student evaluation policies, benchmarking policies and school ethos and tradition habits have a positive effect on stress among high school teachers (Baraza and Simatwa 2017). Therefore, efforts need to be related to the decrease in stress levels in schools because this situation can affect the onset of symptoms of PMS. These results are in line with research from Akhondali *et al*. (2015) proves that lifestyles, especially healthy eating habits, and unhealthy stress and behavior can affect PMS. Stress in teenagers is part of daily life as well as related to family life as well as environment including school environment, so efforts to reduce stress is very important to be a trigger PMS. The findings of Bertone-johnson *et al*. (2014) suggest that abuse, particularly emotional and physical abuse, is a strong risk factor for moderate to severe PMS. Consumption of vegetables and fruits in daily life can reduce premenstrual symptoms, because in vegetables and fruits contain some vitamins and minerals such as vitamin B6, B12. Intakes of thiamine and riboflavin from food sources are each inversely associated with the incident PMS. Women in the highest quintile of riboflavin intake 2-4 y before the diagnosis year did a 35% lower risk of developing PMS than did those in the lowest quintile (relative risk: 0.65; 95% CI: 0.45, 0.92; P for trend = 0.02) (Chocano-bedoya *et al*., 2011). Vitamin B6 and magnesium are most effective against the reduction of PMS (Ebrahimi *et al*., 2012). Women with severe PMS are closely related to their sleep quality (Baker *et al*. N.d.2007). This study shows that high iron and zinc nonheme intake may be associated with lower risk of PMS, whereas high potassium intake may be associated with higher risk (Chocano-bedoya *et al*., 2013). Behavior handling premenstrual manifestations need to involve the psycho-social coping process relevant to premenstrual experience. The importance of the role of awareness and acceptance of premenstrual changes not only as a coping strategy but as a way for women to gain a sense of agency in being able to cope. It also indicates that helping women to develop more awareness and acceptance of premenstrual (Read *et al*., 2014).

Conclusion

We found counseling with media leaflets more effective than counseling with Infocus media, the formation of PMS reduction measures and reduced PMS symptoms after 3 months post-intervention.

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