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EFFECT OF PHYSICAL ACTIVITY AND STRESS LEVEL WITH INTERRUPTION IN MENSTRUAL PATTERN IN WOMEN LAND ARMY IN PUSDIKKOWAD LEMBANG BANDUNG

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ABSTRACT

Menstruation is the periodical monthly discharge of blood and mucosal tissue from the innermost layer of uterus.The aim of this study is to determine the effect of Physical activity level with impairment pattern in menstruation among Army women in Pusdikkowad Lembang Bandung. Research sampling size in this study with probability sampling system was carried out using Krejcie and Morgan table. Data collection was conducted among 84 students who followed Secaba Kowad education in 2015. The study was done by counting pulse after running with a distance of 3200 meters to determine the level of physical activity. Result of research was determined by using statistical test of Chi Square and McNemar. The study shows that (1) there is relationship between menstrual pattern disorders with physical activity with a *P*-0.000> 0.05 (2) there is influence / Menstruation with stress with statistical test results obtained value *P*-0.000> 0.05. In this study a regular surveillance is maintained over a period of 6 months. Further research of similar kind is needed, however, in future as a guide for the institution running similar educational program.

Keywords: Physical Activity, Stress Level, Menstrual Disorder Pattern

INTRODUCTION

Menstruation is a natural process of a woman's desquamation process or the dissolution of the inner uterine wall (Endometrium) that comes out through the vagina together with blood. Menstrual cycle ranges from 21-35 days. Only 10-15% of women in general have a menstrual cycle of 28 days and over 35 days with a menstrual period of 3-5 days, the rest, however, 85-90%, has a menstrual cycle of 7-8 days (Wiknjosastro, 2007). The length of this menstrual cycle is influenced by age, weight, physical activity, stress level, genetic and can also be caused due to chronic diseases such as lupus, diabetes, thyroid disease, kidney disease and abnormalities in the reproductive organs along with their nutritional status (Wiknjosastro, 2007). Prolonged continuous training (infiltration, raiding and defense training), performing all the physical exercises, general sports (volleyball, table tennis, tennis, badminton). Moreover, every individual is made to run more than five rounds outside the building. Several studies suggested that the prevalence of disruption in the menstruation cycle among the female population aged 18-55 years had experienced an abnormal menstrual cycle, associated with psychological stress (Nepomnaschy, 2007).

From the data of several studies; it is said that nursing students in Kushyu University reported as many as 34% experienced irregular menstruation due to stress (Onimura & Yamaguchi, 1996). Other research in Japan stated that 63% female students experience irregular menstruation (Kasharafirard *et al.*, 2012).

Viewed from the physical exercises performed by Polwan and Kowad, it seems almost the same but there are things that do not have same stress level because Kowad quite carried out a lot of exercises which needs resilience. In fact, this makes me interested to conduct the research in the military reign that is, in the army of women, especially, students first level of education is concerned. It makes The Army Women's Army Corps

(KOWAD) to recall various physical exercises, conducted during education as well as the many social environment changes that cause Menstrual Disorder Pattern.

MATERIALS AND METHODS

This is a descriptive research with cross sectional approach based on internal comparison, where the measurement of variables begins with the provision of questionnaires. It aims to find the relationship between the independent variables (physical exercise, psychical stress) and the dependent variable (menstrual pattern) among the Secaba Student Female Army Corps. This research was conducted from November 2015 to January 2016. The sample in this study is the total number of students who followed Secaba Kowad education in 2015; as evaluated by using statistical test of Chi Square and McNamer.

RESULTS

Bivariate Analysis means the analysis of Bivariate data, which consists of independent variables (physical exercise, psychical stress) and the dependent variable (Menstrual pattern) using Chi square and McNemar test.

Table 1: The Frequency Distribution of the Relationship between the Influence of Physical Activity and Stress Level on Army Female

Menstrual Pattern	Physical Activity									Total			P
	Normal		Light		Moderate		Heavy			Very Heavy			
	n	%	n	%	n	%	n	%		n	%	n %	
Menstrual Cycle													
Normal	2	2.4	2	2.4	1	1.2	0	0	0	0	5	6	0.000
Polymenorrhea	0	0	0	0	0	0	0	0	0		0	0	
Oligomenorrhea	0	0	3	3.6	0	0	0	0	0		0	0	
Amenorrhea	9	10.7	32	38.1	35	41.7	0	0	0		76	90.4	
Amount of Blood													
Normal	2	2.4	8	9.5	6	7.1	0	0	0		16	19	0.000
Hypomenorrhea	9	10.7	29	34.63	35.8	0	0	0	0		68	81	
Hypermenorrhea	0	0	0	0	0	0	0	0	0		0	0	
Long Menstrual													
Normal	2	2.4	9	10.7	7	8.3	0	0	0		18	21.4	0.000
Menorrhagia	0	0	0	0	0	0	0	0	0		0	0	
Brakhimenorea	9	10.7	28	33.4	29	34.6	0	0	0		66	78.6	
Total	11	13.1	37	44.1	36	42.9	0	0	0		84	100	

Table 2: The Relationship between the Influence of Physical Activity and Stress Level on Army Female

Menstrual Pattern	Physical Activity						Total		p
	Light		Moderate		Heavy				
	n	%	n	%	n	%	n	%	
Menstrual Cycle									
Normal	0	0	0	0	5	6	7	8	0
Polymenorrhea	0	0	0	0	0	0	0	0	
Oligomenorrhea	0	0	0	0	3	3.6	3	3.6	
Amenorrhea	2	2.4	10	11.9	64	76.1	76	90.4	
Amount of Blood									
Normal	1	1.2	0	0	15	17.9	16	19.1	0
Hypomenorrhea	1	1.2	10	11.9	11.9	57	67.8	68	80.9
Hypermenorrhea	0	0	0	0	0	0	0	0	0
Long Menstrual									
Normal	1	1.2	0	0	17	20.2	18	21.4	0
Menorrhagia	0	0	0	0	0	0	0	0	0
Brakhimenorrhea	1	1.2	10	11.9	55	65	0.5	66	78.2
Total	2	2.4	10	11.9	72	85.7	84	100	

Relationship between Physical Exercises with Menstrual Disorders

The results of the research on students of Secaba Corps of Women Army Pusdikkowad based on McNamer test obtained a *P* value 0.000 ($p<0.005$). It can be seen that the disturbance of menstrual pattern during education due to performing physical exercise differs significantly. Based on these results it can be stated that there is an influence of physical exercise with disorders of menstrual pattern.

Relationship between Stress and Menstrual Disorders

The result showed that there was a significant correlation between stress level and menstrual pattern disorder in the cycle of female students of Pusdikkowad Army Ladies Corps based on statistical test using Chi-square and Mc-Nemar (*P* Value=1,000, $p>0.005$), which means menstrual abnormalities cycle, the number and duration of menstrual bleeding occurs due to stress levels.

Influence between Physical Activity, Stress Level to Menstrual Disorders.

The results showed there was a significant correlation between physical activity and stress level with menstrual pattern disorder in the Pusdikkowad Army Female Corps Student Corps.

Physical exercise can affect the hormonal cycle,

when women perform physical exercise the body weight will experience physical stress which then causes an increase in hormone Corticotropic Releasing Hormone (CRH). The hormone CRH will suppress the production of GnRH in the hypothalamus. In addition, CRH also stimulates the release of Adenocorticotropin Hormone (ACTH).

This will stimulate the release of glucocorticoids, effects FSH-mediated progesterone synthesis causes impaired metabolism of progesterone resulting in Menstrual Disorder Pattern.

DISCUSSION

The research is a cross sectional approach with internal comparison, where the measurement of variables is followed by Krejcie and Morgan table. It aims to find the relationship between the independent variables (physical exercise, psychic stress) and the dependent variable (menstrual pattern) among the Secaba Student Female Army Corps (Giriwijoyo, 2007). The result is obtained by using statistical test of Chi Square and Mc Namer. The study showed:

(1) there is influence and between menstrual pattern disorder with physical activity with a *P*-0.000> 0.05 (2) among the students of Sekaba Army Women Corps for 6 months.

The Relationship between Physical Exercises with Menstrual Disorders showed a disturbed pattern due to performing physical activity at increased rate. Similarly, Relationship between Stress and Menstrual Disorders experienced abnormal duration of menstrual bleeding (Lamina *et al.*, 2013)

CONCLUSION

Influence between physical activities, stress level to menstrual disorders effected hormonal hormonal imbalance in production of estrogen, progesterone, follicle stimulating hormones (FSH) and luteinizing hormone. The low levels of estrogen and progesterone causes irregular and heavy periods (Shaw *et al*., 2010).

Therefore, based on the analysis and discussion of the research results obtained by researchers, it can be concluded that there is a significant relationship between physical exercise and increased level of stress with menstrual pattern disorders.

Moreover, menstrual disorder can have a variety of causes, including pregnancy, infections, hormone imbalance and trauma, to mention a few.

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