



Determinants of the Menstrual Cycle of Midwifery Students Level I And II at High School Health Science (Stikes) Mitra Ria Husada, East Jakarta in 2016

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Abstract - The purpose of this study was to study and explain the description and factors related to the menstrual cycle in I and II level midwifery students at STIKes Mitra Ria Husada East Jakarta in 2016. This study used a quantitative approach with cross sectional design. The entire population used in this study was 83 people. The population of this study were midwifery students at STIKes Mitra Ria Husada East Jakarta level I and II, which observed from age factor, stress level, diet, lifestyle, sport and family history. Based on bivariate analysis with Chi square test obtained results from 83 respondents there are 52 respondents (62.7%) experienced irregularity of the menstrual cycle. In multivariate analysis using simple logistic regression, the main cause factor is stress, where respondents who experienced severe stress with irregularity of menstrual cycles that is there are 78.3% with p-value 0,000 which means there is a significant relationship between stress and menstrual cycle. It was concluded that stress is the dominant variable with menstrual cycle, after being controlled by family history and lifestyle. This research can be taken into consideration to pay more attention to scheduled lectures that have been established, whether burdensome students who study at the institution. STIKes is deemed necessary to socialize how to divide the time to perform daily activities by dividing time to rest and adding knowledge about healthy lifestyles for the students.

Keywords – Student; Menstrual Cycle; Stress; Family History; Lifestyle.

I. INTRODUCTION

Women in their life cycles do not escape the existence of many normal, irregular menstrual cycles, more often or not at all. The causes of menstrual disorders can be due to biological abnormalities (organic or dysfunctional) or may also be psychological as well as stressful and emotional or biologic and psychological conditions of association (Atikah, 2009 in Mulastin, 2011).

The menstrual cycle is the time from the first day of menstruation until the arrival of menstrual periods whereas the length of the menstrual cycle is the distance between the starting date of the last menstrual period and the start of the next menstruation. The menstrual cycle in women normally ranges from 21-35 days and only 10-15% has a menstrual cycle of 28 days with a menstrual period of 3-5 days, some 7-8 days (Proverawati & Misaroh, 2009). The normal menstrual cycle lasts for 21-35 days, 2-8 days is the time of menstrual discharge that ranges from 20-60 ml per day. Research shows women with normal menstrual cycles are present in only 2/3 (67%) of adult women (Anonymous, 2014)

Irregular menstruation in adolescents needs to be alerted because it may indicate symptoms of a new serious illness will appear in the future. Irregular menstrual cycles can be

caused by Polycystic Ovarian Syndrome (PCOS), a sex hormone that is generally more predominant in men. PCOS hormone imbalances are closely related to the growth and release of eggs from the ovaries. The result is not just irregular menstrual cycles, but also the opportunity to have offspring also becomes smaller. Women with PCOS also tend to be prone to high blood pressure, high cholesterol and even endometrial cancer. Insulin resistance also often accompanies this syndrome, making it more susceptible to diabetes (Anonymous, 2014).

Based on the results of interviews survey on 06-07 October 2016 from 30 students of semester 1 and 3 midwifery department, 18 of them said experiencing changes in the menstrual cycle during facing the activities of dormitories and lectures, 12 people said no appetite because of the food menu mismatch consumed by students, and in the last 12 months the 12 students experienced a change of menstrual cycle and 8 of them did not menstruate at all, and 4 others said they did not experience menstrual cycle problems. The purpose of this study to determine what factors are associated with the menstrual cycle in midwifery students of the final semester at STIKes Mitra Ria Husada East Jakarta in 2016.

II. RESEARCH METHODS

This research was conducted at STIKes Mitra Ria Husada East Jakarta in November 2016. The population in this research is the first and second level in midwifery department students at STIKes Mitra Ria Husada of East Jakarta, amounting to 87 students. Sampling in this study was conducted using the total population.

The design of this study using cross sectional with quantitative approach. In this study the authors use the primary data that is data directly taken from the respondents by using a questionnaire that has been designed based on research needs. After meeting the respondents for approval as a sample in the study, respondents were immediately given the opportunity to be filled out.

Univariate analysis, which is an analysis of independent variables and dipenden so that the resulting frequency distribution and known variations of each variable. Bivariate analysis, that is analysis by using statistical test of chi-square. With a 95% confidence level on the 2x2 cross table. The value of OR is said to be significant if p (value) is smaller than $\alpha = 0.05$. Multivariate analysis, that is analyze the relationship one with some independent variable with dependent variable. Next do a multivariate analysis by including the variable p-value <0.25 . Multivariate analysis used in this research is logistic regression.

III. RESULTS AND DISCUSSION

A. Result Of Univariate Analysis

TABLE 1. RESULT OF UNIVARIATE ANALYSIS

No	Variable	Frequency (n)	Percentage (%)	
1.	Uge	< 20 years	66	79.5
		≥ 20 years	17	20.5
	Total	83	100.0	
2.	Menstrual Cycle	Regular	31	37.3
		Irregular	52	62.7
	Total	83	100.0	
3.	Stress	Light	23	27.7
		Severe	60	72.3
	Total	83	100.0	
4.	Diet	Yes	31	37.3
		No	52	62.7
	Total	83	100.0	
5.	Lifestyle	Healthy	40	48.2
		Unhealthy	43	51.8
	Total	83	100.0	
6.	Sport	Light	50	60.2
		Strenuous	33	39.8
	Total	83	100.0	
No	Variable	Frequency (n)	Percentage (%)	
7.	Family History	Regular	45	54.2
		Irregular	38	45.8
	Total	83	100.0	

Most respondents aged <20 years were 79.5% who had irregularities in their menstrual cycle of 62.7%, had stress at 72.3% weight level, the diet used by respondents was not with good and correct consumption pattern as much as

62.7% with an unhealthy lifestyle of 51.8%, exercise done in mild levels of 60.2% and have a family history with regular menstrual cycle of 54.2%.

B. Results of Bivariate Analysis

TABLE 2. RESULTS OF BIVARIATE ANALYSIS

Age	Menstrual Cycle				Total		p Value	OR (95% CI)
	Regular		Irregular		N	%		
	N	%	n	%				
< 20 years	26	39.4	40	60.6	66	100.0	0.633	1.560 (0.492– 4.948)
≥ 20 years	5	29.4	12	70.6	17	100.0		
Total	31	37.3	52	62.7	83	100.0		
Stres	Menstrual Cycle				Total		p Value	OR (95% CI)
	Regular		Irregular		n	%		
	n	%	n	%				
Light	18	78.3	5	21.7	23	100.0	0.000	13.015 (4.057–41.757)
Severe	13	21.7	47	78.3	60	100.0		
Total	31	37.3	52	62.7	83	100.0		
Diet	Menstrual Cycle				Total		p Value	OR (95% CI)
	Regular		Irregular		N	%		
	n	%	N	%				
Yes	17	54.8	14	45.2	31	100.0	0.021	3.296 (1.293–8.403)
No	14	26.9	38	73.1	52	100.0		
Total	31	37.3	52	62.7	83	100.0		
Lifestyle	Menstrual Cycle				Total		p Value	OR (95% CI)
	Regular		Irregular		N	%		
	n	%	N	%				
Healthy	18	45.0	22	55.0	40	100.0	0.245	1.888 (0.767–4.648)
Unhealthy	13	30.2	30	69.8	43	100.0		
Total	31	37.3	52	62.7	83	100.0		
Sport	Menstrual Cycle				Total		p Value	OR (95% CI)
	Regular		Irregular		n	%		
	N	%	N	%				
Light	24	48.0	26	52.0	50	100.0	0.025	3.429 (1.259–9.340)
Strenuous	7	21.2	26	78.8	33	100.0		
Total	31	37.3	52	62.7	83	100.0		
Family History	Menstrual Cycle				Total		p Value	OR (95% CI)
	Regular		Irregular		n	%		
	n	%	N	%				
Regular	25	55.6	20	44.4	45	100.0	0.000	6.667 (2.329–19.083)
Irregular	6	15.8	32	84.2	38	100.0		
Total	31	37.3	52	62.7	83	100.0		

C. Results of Multivariate Analysis

TABLE 3. RESULTS OF MULTIVARIATE ANALYSIS

No	Variable	B	p	OR	95% CI
1.	Stress	2.819	0.000	16.767	4.150 – 67.745
2.	Lifestyle	1.132	0.065	3.103	0.933 – 10.313
3.	Family History	2.119	0.001	8.323	2.275 – 30.450

Age

The results showed that respondents aged <20 years who had irregular menstrual cycles were 60.6% and age ≥ 20 years for those with irregular menstrual cycle was 70.6%.

There was no statistically significant proportion difference in menstrual cycle between students <20 years old and ≥20 years according to p-value > 0.05. So there is no relationship between age and menstrual cycle.

This is consistent with Sejati theories of 2009, that is, menstrual disorders often occur in about 70-90% of women with various factors other than age, diantaranya are hormonal factors, diet, stress and lifestyle in women who are still active with menstruation.

Stress

The results showed that respondents who experienced severe stress with irregular menstrual cycle were 78.3% and mild stress with irregular menstrual cycle was 21.7%. There is a significant difference in propriety between mild stress and severe stress, according to p-value 0,000 (<0.05).

Thus there is a significant relationship between stress and menstrual cycle. The value of OR 13,015 means that respondents who experience severe stress 13.0 times chance to affect the irregular menstrual cycle compared to students with mild stress.

Diet

The results showed that the respondents who did not diet experienced irregular menstrual cycle is 73.1% and the diet has an irregular menstrual cycle is 45.2%. There was a significant difference of proportion between dieters using good and correct consumption pattern with those who did not diet with good and proper consumption pattern, according to p-value 0.021 (<0.05).

Thus there is a significant relationship between diet and menstrual cycle. The value of OR 3,296 means that respondents who do not do diet using a good consumption pattern and correct chance 3.2 times affect the irregularity in menstrual cycle compared with students who use the pattern of good and right consumption.

Lifestyle

The results showed that respondents who have an unhealthy lifestyle experience irregular menstrual cycle is 69.8% and who have a healthy lifestyle experience irregular menstrual cycle is 55.0%. There is no significant difference in proportion between healthy lifestyle and unhealthy lifestyle according to p value $> 0,05$, so there is no significant relationship between lifestyle and menstrual cycle.

Sejati, 2009 states lifestyle factors in women to dietary regulation, adequate rest and physical needs also play a role that is not less important. Too much or too little rest, greatly contributes to the symptoms of menstrual disorders.

Sport

The results showed that the respondents who exercise and become a heavy burden for him to experience irregular menstrual cycle is 78.8% and who do mild exercise irregular menstrual cycle is 52.0%. There was a significant proportion difference between mild exercise and severe exercise, according to p-value 0.025 (<0.05).

Thus there is a meaningful relationship between exercise and menstrual cycle. The value of OR 3.429 means that the respondent who exercises and becomes a heavy burden for himself has a chance of 3.4 times affecting irregularities in the menstrual cycle compared with students who do light exercise.

Family History

The results showed that respondents who had a family history with irregular menstruation, there were irregular menstrual cycle is 84.2% and who have a family history with regular menstruation is found in those who have irregular menstrual cycle is 44.4%. There is a significant proportion difference between family history with regular menstrual cycles and family history with irregular menstrual cycles, according to p-value 0.000 (<0.05).

Thus there is a meaningful relationship between family history and menstrual cycle. The OR value of 6,667 means that respondents who have a family history with irregular menstruation are 6.6 times more likely to have an irregularity in the menstrual cycle than those with a family history with regular menstrual cycles.

D. Results of Multivariate Analysis

After multivariate results obtained from the last modeling there is the highest OR value in the stress variable, the dominant factor of menstrual cycle is stress after controlled by family history. The lifestyle variable is a counfounding variable. Then, from result of multivariate analysis obtained variable which related and significant with menstrual cycle is stress variable and family history. While the lifestyle variable is a counfounding variable. The result of OR analysis from stress variable is 16.76 means that respondent suffering from stress will experience unstable on menstruation cycle equal to 16.8 times higher than respondent who do not experience stress after controlled by family history and lifestyle variable.

IV. CONCLUSION

The prevalence of irregular menstrual cycle in midwifery students at STIKes Mitra Ria Husada East Jakarta was obtained as much as 62.7%. Factors related to the menstrual cycle in this study were found in stress, diet, exercise and family history. Where the stress variable in respondents who experienced severe stress 13.0 times affecting the menstrual cycle, the diet variable of respondents who do not diet using a pattern of good and true consumption more likely 3.2 times affect irregularity in the menstrual cycle. Furthermore, sports variables, respondents who exercise and become a heavy burden for themselves more likely 3.4 times affect the irregularity in menstrual cycle and the last on the family history variable, respondents who have a family history with irregular menstruation more likely 6.6 times affects irregularities in the menstrual cycle of respondents.

The dominant factor of the menstrual cycle is stress after being controlled by family history and lifestyle variables. Stress factors in midwifery students in STIKes Mitra Ria Husada East Jakarta one of them is due to lack of rest caused by density of lecture schedule and the difference of origin and residence of some areas on the students, so that students must adapt to their environment. This is evident from the results obtained from the respondents at the time of research with the results of students who are experiencing severe stress and menstrual cycle disorder disorder of 78.3%.

Diet and exercise are very influential on the menstrual cycle, lack of exercise and a bad diet will affect the hormone and will affect the menstrual cycle. The results obtained from this study were respondents with no good consumption pattern and experienced irregular menstrual cycle was 73.1% with p-value <0.05 which means there is a significant relationship between diet with menstrual cycle. Meanwhile, in sports variables also have significant relationship with menstrual cycle with p-value <0.05 where student who do sport and become heavy burden and experience irregular menstruation cycle is equal to 78.8%.

Strenuous sports and unbalanced diet are almost the same. Can be seen in bivariate analysis where the proportion of severe sports that experienced irregularity of the menstrual cycle is as much as 78.8% while in the unbalanced diet that also experienced irregularity in the menstrual cycle is as much as 73.1%. The frequency of diet is not balanced 62.7%, sports weight 39.8%, so the effect of diet is greater than the influence of severe sports.

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