THE PREVALENCE AND FACTORS AFFECTING PRIMARY DYMENORRHEA AMONG FEMALE STUDENTS
(Prevalen dan Faktor-Faktor yang Mempengaruhi Senggugut Primer dalam Kalangan Pelajar Wanita)

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ABSTRACT

Hospitals are health care institution that provides medical and surgical treatment and nursing care for sick or injured people. Primary dysmenorrhea is acramp-like pain that usually felt in the lower abdomen. The study was conducted to determine 'The Prevalence and Factors Affecting Primary Dysmenorrhea among Female University Students. A cross-sectional design was used in this study. The sample size of 268 female students from Universiti Teknologi MARA Cawangan Kelantan, Kampus Kota Bharu (UiTMKB) was obtained by using Proportionate Stratified Random Sampling technique. A validated self-administrated structured questionnaire was used for data collection. Descriptive Statistics, Chi-square test and Binary Logistic Regression analysis was performed for this study. The prevalence of primary dysmenorrhea among UiTMKB female students was 60.4%. There was a significant association between primary dysmenorrhea status with menstrual blood loss, family history, stress level and carbonated drink intake. Moreover, there were a significant impact caused by primary dysmenorrhea on students' daily activities. The finding also indicated the factors that affecting the primary dysmenorrhea were only menstrual flow, menstrual blood loss and family history. Therefore, for those who experienced normal average duration of menstrual blood flow, heavy/ heavy with clots of menstrual blood loss and their family members experienced period pain were advised to refer to the doctor for further treatment.

Keywords: primary dysmenorrhea; lifestyle; menstrual flow; mestrual blood loss; binary logistic regression

ABSTRAK

Senggugut primer adalah sakit seperti kekejangan yang biasanya dirasai di bahagian bawah perut. Kajian ini dilakukan untuk menentukan prevalen dan faktor-faktor yang mempengaruhi senggugut primer dalam kalangan pelajar wanita. Reka bentuk keratan rentas digunakan dalam kajian ini. Sampel 268 pelajar wanita dari Universiti Teknologi MARA Cawangan Kelantan, Kampus Kota Bharu (UiTMKB) diperoleh dengan menggunakan teknik Persampelan Rawak Berstrata Berkadaran. Soal selidik berstruktur kendiri yang disahkan digunakan untuk pengumpulan data. Deskriptif Statistik, Ujian Khi Kuasa Dua dan Analisis Regresi Logistik Binari dijalankan untuk kajian ini. Prevalen senggugut primer di kalangan pelajar perempuan UiTMKB adalah 60.4%. Terdapat hubungan yang signifikan antara status senggugut primer dengan kehilangan darah haid, sejarah keluarga, tahap tekanan dan pengambilan minuman berkarbonat. Selain itu, terdapat kesan ketara yang disebabkan oleh senggugut primer terhadap aktiviti harian pelajar. Penemuan juga menunjukkan faktor-faktor yang mempengaruhi senggugut primer hanyalah aliran haid, kehilangan darah haid dan sejarah keluarga. Oleh itu, bagi mereka yang mengalami purata aliran darah haid yang normal, kehilangan darah haid yang teruk/teruk dengan ketulan dan ahli keluarga mereka mengalami senggugut dinasihatkan untuk merujuk kepada doktor untuk rawatan lanjut.

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1. Introduction

Dysmenorrhea is a common gynaecologic disorder faced by many adolescent females around the world. Studies have found that dysmenorrhea is interrupting the educational and social life of students in the adolescent age group (Jaiprakash *et al*. 2016). According to Shah *et al*. (2015), such absences reduce opportunities for successful educational, psychosocial, and cognitive development during the critical period of adolescent growth. Dysmenorrhea can be classified into two categories which are primary dysmenorrhea and secondary dysmenorrhea (Al-Jefout *et al*. 2015). The pain usually starts on the first day of the menstruation and slowly lessened within 1 to 3 days (Apay *et al*. 2012). Primary dysmenorrhea usually has symptoms such as nausea, vomiting, diarrhea, constipation, headache, fatigue and insomnia (Seidman *et al*. 2018). Secondary dysmenorrhea with underlying pathology, and its onset may be years after menarche (Shah *et al*. 2015).

According to the research conducted by the Faculty of Medicine MAHSA University Kuala Lumpur, Malaysia, the prevalence of dysmenorrhea was 78% (Jaiprakash *et al*. 2016). Prevalence rates have been reported to be as high as 92% for female adolescent in Egypt (Arafa *et al*. 2018). The prevalence for the dysmenorrhea from previous study by Turgut Ozal University and Nakhorn Pathom Ratjabhat University were 84% and 84.2% respectively (Aktas 2015; Tangchai *et al*. 2004).

It was found that most female would face mild, moderate or severe dysmenorrhea. The percentage of students with mild dysmenorrhea was 30%, while 52.10% of the students had moderate dysmenorrhea and the rest were having severe dysmenorrhea (Jaiprakash *et al*. 2016). Moreover, a study on female students at Jouf University, Saudi Arabia found that 34%, 57.3% and 8.7% students suffered from severe, moderate, and mild grades of dysmenorrhea respectively (Abdel-Salam *et al*. 2018).

Based on Aktas (2015), age at menarche, low or high BMI, amount of menstrual flow, duration of menstrual flow, frequency of menstrual cycle, family history of dysmenorrhea, oral contraceptive use, smoking, education level, marital status, psychological disturbance, and somatization were related to this disorder. According to Abdel-Salam *et al*. (2018), the most four significant variables contribute to dysmenorrhea were age at menarche, cycle regularity, cycle length and bleeding amount. However, study by Shah *et al*. (2015), revealed that the significant factors contribute to primary dysmenorrhea were menstrual cycle, menstrual flow, and family history.

Information about the risk factors of dysmenorrhea is important since it will affect some of the women by reduced their quality of life and loss their contribution towards daily works (Balık *et al*. 2014). Those women that diagnosed with dysmenorrhea reported that more times of depression compared those without dysmenorrhea since this primary dysmenorrhea were affecting their daily school activities (Titilayo *et al*. 2009). Apart from that, dysmenorrhea has consequences in economics because of costs of health care due to excess use of expensive hormonal drugs, laboratory tests, daily absence from work, school and college which restrain academic performance (Abdel-Salam *et al*. 2018).

Dysmenorrhea is a common gynaecologic problem in menstruating women that faced by a large number of adolescent females around the world. Meanwhile, primary dysmenorrhea is mostly frequent prevalent among female women and girls. It is important to treat this problem since this disorder can reduce productivity, creativity and work performance. Therefore, this

study was conducted to determine the prevalence of primary dysmenorrhea among female undergraduate students of Universiti Teknologi MARA Cawangan Kelantan, Kampus Kota Bharu (UiTMKB), to determine the factors, i.e. age, body mass index (BMI), age at menarche, menstrual flow, menstrual cycle, menstrual blood loss, family history, stress level, physical exercise, caffeine consumption, carbonated drink intake, and fast food consumption significantly affecting the primary dysmenorrhea status and to investigate the significant impacts caused by primary dysmenorrhea on students' daily activities such as social activities, responsibilities, resting time, class absenteeism and interfere normal daily life.

2. Materials and Method

The descriptive and cross-sectional study was applied as a study design in this study. The sampling frame for this study is the list names with additional information on telephone number and programme of all full time female undergraduate students of UiTMKB in Part 1 to 6, Semester March until July 2019. Of 728 female students, the recommended sample size approximately 252 was determined by using *Sample Calculator Online* by *RaosoftInc.* Additional of 11% students were added to the sample size since there would exist non-response. Hence, the final sample size for this study was 268 students. A Proportionate Stratified Random Sampling was applied in this study by separating the population elements into five strata according to the students' courses. The courses are Bachelor in (Hons.) Science Statistics (CS241), Bachelor in (Hons.) Business Administration (Marketing) (BA240), Bachelor in (Hons.) Business Administration (Finance) (BA242), Bachelor in (Hons.) Business Administration (Islamic Banking) (BA249), and Bachelor in (Hons.) Business Economic (BA250). Then, a simple random sampling procedure had been used to select the sample from each stratum. All-female students from these programs were selected as the study population because all the programs are offered at UiTMKB. The α level of 0.05 (5%) had been used in this study to reject or accept null hypotheses.

3. Significance of Study

The study would be beneficial to the several parties such as students, UiTMKB management and academicians in many ways. For students, the findings helped them in determining the factor that contribute to primary dysmenorrhea. This may help them to take precaution towards primary dysmenorrhea disorder so that they would find the proper ways to solve their problem. Other than that, the UiTMKB management especially Student Affairs Unit would find an appropriate action to help female students with primary dysmenorrhea in manage their affected daily life. The finding of this study also significant for the academicians to help and give motivation to the student to cope with academic anxiety caused by primary dysmenorrhea.

4. Research Tool

A validated self-administered questionnaire was used as a data collection tool. This closed-ended questionnaire was adapted by using nine sources which were Abdel-Salam *et al.* (2018), Al-Jefout *et al.* (2015), Arafa *et al.* (2018), Grandi *et al.* (2012), Habibi *et al.* (2015), Jaiprakash *et al.* (2016), Kumar *et al.* (2016), Shamsunarnie *et al.* (2009), and Tangchai *et al.* (2004). The questionnaire had been transformed into *Google Forms* and was distributed to the selected students through *WhatsApp Messenger* application. The questionnaire was constructed and divided into five sections which were on demographic information of

students, primary dysmenorrhea status, students' menstrual history, students' lifestyle, and impact on students' daily activities.

5. Operational Definitions

According to Shamsunarnie *et al.* (2009), those with all following conditions were considered having primary dysmenorrhea: the presence of menstrual cramps and/ or pain; pain starts just before or just after starting of menstruation (less than one day); and lasted for at least 24 to 72 hours; and pain present at least 50% of the menstrual cycles during the past six months; with no previous diagnosed history of primary gynaecological disease. As stated by Shamsunarnie *et al.* (2009), one of those with all following conditions were considered having secondary dysmenorrhea; pain which started two or more days before the menstruation in increasing intensity until the start of a period when the menstrual flow relies on it; pain which started with the period being relieved by the cessation of menstruation; severity of dysmenorrhea was worsened over the years were the criteria for exclusion from the study.

6. Statistical Analyses

Prevalence, sometimes referred to as prevalence rate, is the proportion of persons in a population who have a particular disease or attribute at a specified point in time or over a specified period of time. Prevalence is usually expressed as a percentage of the population. The prevalence of primary dysmenorrhea refers to the percentage of female students that had been diagnosed with primary dysmenorrhea. The prevalence of primary dysmenorrhea and the impact of primary dysmenorrhea on students' daily activities were described as frequency and percentage.

The Binary Logistic Regression with backward selection method was used to determine the selected factors significantly affecting the primary dysmenorrhea status. The Wald test was used to determine statistical significance for each of the independent variables. The goodness of fit of the model was checked using Hosmer-Lemeshow test, Nagelkerke R^2, and classification table. The model is fit if the *p*-value for Hosmer-Lemeshow test is greater than 0.05 which showed that there was no significant difference between the observed probability and expected probability. The common measure for goodness of fit test was coefficient of determination, R^2. It defines as the proportion of variance explained by the regression model makes it useful as a measure to predict the dependent variable of primary dysmenorrhea status from the independent variables. The value of R^2 is between 0 (extremely poor fit) and 1 (perfect fit) usually stated in percentage. However, in logistic regression, the R^2 is referred to Cox & Snell R^2 and Nagelkerke R^2 which is also referred as "pseudo" R^2 that they look like R^2 but cannot be interpreted as the ordinary least squares (OLS) R -squared. Meanwhile, based on classification table, the overall percentage should be greater than 70% to conclude that the model is fit.

The Chi-Square test was used to investigate the significant impacts caused by primary dysmenorrhea on students' daily activities. Both groups i.e., students with primary dysmenorrhea and non-dysmenorrhea were included in the analyses. While those who were diagnosed having secondary dysmenorrhea criteria were excluded from this study. All the analyses were done by using Statistical Package for the Social Sciences (SPSS) version 23 (SPSS 23.0). Table 1 summarized the variables used in this study.

Table 1: Descriptive of Variable

Section	Variables	Category
A: Sociodemographic	Age	None
	Body Mass Index (BMI)	None
B:Primary dysmenorrhea	Primary dysmenorrhea status	0 = "No Dysmenorrhea"
		1 = "Primary Dysmenorrhea"
C: Menstrual History	Age at Menarche	None
	Menstrual flow	None
	Menstrual cycle	0 = "Regular" 1 = "Not Regular"
	Menstrual blood loss	0 = "Little/Moderate"
		1 = "Heavy/ Heavy with clots
	Family history	0 = "No" 1 = "Yes"
D: Lifestyle	Stress level	1 = "Not at all/ Slightly"
		2 = "Moderately"
		3 = "Quite a bit or/ A lot of stress
	Physical exercise	0 = "No" 1 = "Yes"
	Caffeine Consumption	0 = "No" 1 = "Yes"
	Carbonated Drinks Intake	0 = "No" 1 = "Yes"
	Fast Food Consumption	0 = "No" 1 = "Yes"

The estimated "logit" model of Binary Logistic Regression for this study is:

$$\ln\left(\frac{\hat{p}}{1-\hat{p}}\right) = \hat{\beta}_0 + \hat{\beta}_1 X_1 + \hat{\beta}_2 X_2 + \hat{\beta}_3 X_3 + \hat{\beta}_4 X_4 + \hat{\beta}_5 X_5 + \hat{\beta}_6 X_6 + \hat{\beta}_7 X_7 +$$
$$\hat{\beta}_8 X_8(1) + \hat{\beta}_9 X_8(2) + \hat{\beta}_{10} X_9 + \hat{\beta}_{11} X_{10} + \hat{\beta}_{12} X_{11} + \hat{\beta}_{13} X_{12} \tag{1}$$

The estimated probability student had primary dysmenorrhea for this study is:

$$P(Y=1) = \left(\frac{1}{1+e^{-z}}\right) \tag{2}$$

where,

$P (Y=1)$ = the probability that had primary dysmenorrhea
ln = the natural logarithm, log_{exp} where exp=2.71828
e = exponential function/the base of natural logarithms
$$z = \ln\left(\frac{\hat{p}}{1-\hat{p}}\right)$$

$\hat{\beta}_0$ = the constant of equation

$\hat{\beta}_1, \hat{\beta}_2, ..., \hat{\beta}_{13}$ = the coefficient of the predictor variables

X_1 = Age	$X_8(1)$ = Stress Level (Moderately)
X_2 = Body Mass Index (BMI)	$X_8(2)$ = Stress Level (Quite a bit or/ A lot of stress)
X_3 = Age at Menarche	X_9 = Physical Exercise
X_4 = Menstrual Flow	X_{10} = Caffeine Consumption
X_5 =Menstrual Cycle	X_{11} = Carbonated Drink Intake
X_6 =Menstrual Blood Loss	X_{12} = Fast Food Consumption
X_7 = Family History	

An odds ratio in this study is a measure of association between an exposure (factor) and primary dysmenorrhea status. The odds ratio represents the odds that students experience primary dysmenorrhea given a specific exposure, compared to the odds of the primary dysmenorrhea occurring in the absence of that exposure. The estimated odds ratio in Binary Logistic Regression for this study is:

$$e^Z = e^{\ln\left(\frac{\hat{p}}{1-\hat{p}}\right)} = \left(\frac{\hat{p}}{1-\hat{p}}\right) \tag{3}$$

where,

$\hat{p}$ = the probability of student had primary dysmenorrhea

ln = the natural logarithm, log_{exp} where exp=2.71828

e = exponential function/the base of natural logarithms.

7. Results

A total of 268 students participated in this study and completed the questionnaire. However, only 222 students were included in the analysis and the rest of 46 students were excluded since the students were having secondary dysmenorrhea criteria. The associated factors of primary dysmenorrhea by using Binary Logistic Regression were summarized in Table 2. Meanwhile, the description and analyses on the impact of primary dysmenorrhea on students' daily activities were presented in Table 3.

7.1. *Prevalence of primary dysmenorrhea*

The prevalence of students that had been diagnosed with the primary dysmenorrhea were 134 (60.4%) while students with no dysmenorrhea were 88 (39.6%).

7.2. *Factors associated with primary dysmenorrhea*

Table 2 shows the contribution of each independent variables to the model and its statistical significance. By using Binary Logistic Regression, three variables were significantly associated with primary dysmenorrhea which were menstrual flow, menstrual blood loss and family history. Based on Nagelkerke R^2=0.221 and overall percentage in classification table, the Binary Logistics Regression obtained in this study explained 22.1% of the variance in primary dysmenorrhea status and correctly classified 72.5% of cases. The interpretation of odds ratio for the significant predictor of menstrual flow when holding menstrual blood loss and family history at a fixed value is, the odds of having primary dysmenorrhea decreases by 0.836 for a one day increase in menstrual flow. The interpretation of odds ratio for the significant predictor of menstrual blood loss when holding menstrual flow and family history at a fixed value is, those whose their menstrual blood loss was heavy and/ or heavy with clots were 2.551 times more likely to have primary dysmenorrhea compare with those whose their menstrual blood loss was little and/ or moderate. The interpretation of odds ratio for the significant predictor of family history when holding menstrual flow and menstrual blood loss at a fixed value is, those whose their family members experienced the period pain were 5.646 times more likely to have primary dysmenorrhea compare with those whose their family members do not experienced the period pain.

Table 2: Associated Factors of Primary Dysmenorrhea by Using Binary Logistic Regression

Variables	b^a	OR^b (95% CI^c)	Wald (*df*)	*p*-value
Constant	0.517	1.676		
Menstrual Flow (days)	-0.179	0.836 (0.704,0.993)	4.179 (1)	0.041
Menstrual Blood Loss	0.937	2.551 (1.139,5.715)	5.178 (1)	0.023
Family History	1.731	5.646 (3.036,10.499)	29.905(1)	<0.001

[a] *$\hat{\beta}$ Coefficient*

[b] *Odd Ratio*

[c] *Confidence Interval*

Notes: The significant of the model and model fitness: Omnibus test (p<0.001); Hosmer Lemeshow goodness-of-fit test (p=0.840); correctly classified=72.5%

The estimated logit models of Binary Logistic Regression and the estimated probability students had primary dysmenorrhea for this study are shown as below:

$$\ln\left(\frac{\hat{p}}{1-\hat{p}}\right) = 0.517 - 0.179X_1 + 0.937X_2 + 1.731X_3$$

$$P(Y=1) = \left(\frac{1}{1+e^{-0.517+0.179X_1-0.937X_2-1.731X_3}}\right)$$

where,

$P(Y=1)$ = The probability that had primary dysmenorrhea
ln = The natural logarithm, log_{exp} where *exp* = 2.71828
e = Exponential function/ the base of natural logarithms
X_1 = Menstrual flow
X_2 = Menstrual blood loss
X_3 = family history

Based on the findings, the $\hat{\beta}$ coefficient for menstrual flow can be interpreted as, for every one day increased in duration of menstrual flow, the log-odss of having primary dysmenorrhea will decrease about 0.179, holding all other independent variables constant. Meanwhile for menstrual blood loss, for those whose their menstrual blood loss with heavy/ heavy with clots, the log-odss of having primary dysmenorrhea will increased about 0.937, holding all other independent variables constant. Also, female students with their family member experienced the period pain, the log-odds of having primary dysmenorrhea will be increased about 1.731, holding all other independent variables constant.

7.3. *Impact of primary dysmenorrhea on students' daily activities*

Table 3 shows there were significant impacts caused by primary dysmenorrhea on students' daily activities. The students' daily activities for those with primary dysmenorrhea were significantly affected compared to those with no dysmenorrhea. There is a significant association between primary dysmenorrhea and students' daily activities namely social activities, responsible, time spent for resting, class absenteeism and interfere with normal daily life since all the *p*-values for the Chi-Square test were less than 0.05.

Table 3: Impact of Primary Dysmenorrhea on Students' Daily Activities

Variables	n(%)[b]	Primary Dysmenorrhea Status[a]		Chi- Square (df)	p-value
		Yes n(%)[c]	No n(%)[c]		
Social activities					
Not limited	70 (31.5)	18 (25.7)	52 (74.3)	72.805 (4)	<0.001
Slightly limited	62 (27.9)	34 (54.8)	28 (45.2)		
Mildly limited	40 (18.0)	34 (85.0)	6 (15.0)		
Moderate Limited	31 (14.0)	29 (93.5)	2 (6.5)		
Completely limited	19 (8.6)	19 (100.0)	0 (0.0)		
Responsible					
No interference	64 (28.8)	12 (18.8)	52 (81.2)	80.342 (4)	<0.001
A little bit interference	66 (29.7)	43 (65.2)	23 (34.8)		
Moderatelyinterference	44 (19.8)	31 (70.5)	13 (29.5)		
Quite bit interference	31 (14.0)	31 (100.0)	0 (0.0)		
A lot / extremely Interference	17 (7.7)	17 (100.0)	0 (0.0)		
Time Spent for Resting					
No time at all	33 (14.9)	1 (3.0)	32 (97.0)	86.004 (4)	<0.001
A little of the time	44 (19.8)	18 (40.9)	26 (59.1)		
Some of the time	82 (36.9)	55 (67.1)	27 (32.9)		
Most of the time	51 (23.0)	48 (94.1)	3 (5.9)		
All of the time	12 (5.4)	12 (100.0)	0 (0.0)		
Class Absenteeism					
No time missed at all	179(80.6)	96 (53.6)	83 (46.4)	17.489	<0.001
One day and more	43 (19.4)	38 (88.4)	5 (11.6)		
Interfere Normal Daily Life					
No interference	89 (40.1)	24 (27.0)	65 (73.0)	81.978 (4)	<0.001
A little bit interference	54 (24.3)	35 (64.8)	19 (35.2)		
Moderately interference	47 (21.2)	43 (91.5)	4 (8.5)		
Quite bit interference	22 (9.9)	22 (100.0)	0 (0.0)		
A lot / extremely Interference	10 (4.5)	10 (100.0)	0 (0.0)		

[a] *Dependent variable*
[b] *Row percent*
[c] *Column percent*

8. Discussion

In this study, 12 factors that are involved in determining the factors affecting the primary dysmenorrhea. The factors include age, Body Mass Index (BMI), age at menarche, menstrual flow, menstrual cycle, menstrual blood loss, family history, stress level, physical exercise, caffeine consumption, carbonated drink intake and fast food consumption.

Based on a study by Kumar *et al.* (2016), the prevalence of dysmenorrhea was 76%. Meanwhile this study found that, the prevalence of primary dysmenorrhea among female undergraduate students at UiTMKB was 60.4% which was quite similar with the previous study. From the result, it showed that the prevalence for students who experienced primary dysmenorrhea was higher than no dysmenorrhea students.

This study found, menstrual flow, menstrual blood loss and family history were significantly affected the the primary dysmenorrhea among female university students in

UiTMKB. According to previous studies by Grandi *et al.* (2012), Kumar *et al.* (2016), Ozerdogan *et al.* (2009), and Potur *et al.* (2014), menstrual flow was one of the factors that influenced primary dysmenorrhea. Instead of that, another works by Abdel-Salam *et al.* (2018), Kumar *et al.* (2016), Nooh *et al.* (2016), and Tangchai *et al.* (2004), stated that there was a significant association between menstrual blood loss and primary dysmenorrhea status. Based on the previous study, family history also significantly contributed to the intensity of primary dysmenorrhea (Aktas 2015; Al-Jefout *et al.* 2015; Habibi *et al.* 2015; Pejčić & Janković 2016; Potur *et al.* 2014; Shiferaw *et al.* 2014).

This study also indicated that the students' daily activities for those with primary dysmenorrhea were significantly affected compared with those with no dysmenorrhea. According to Potur *et al.* (2014), dysmenorrhea will also give a negative effect on students' daily activities which was 39.5% of students were reported having limitations on their daily activities and about 49.9% has a limitation on their social activities. Studies done by Aktas (2015), Potur *et al.* (2014), and Tangchai *et al.* (2004) also concluded that class absenteeism was one of the impacts of students' daily activities due to primary dysmenorrhea.

9. Conclusion

This study was conducted to investigate the prevalence and factors affecting primary dysmenorrhea among female students at UiTMKB. The prevalence of primary dysmenorrhea among female students in UiTMKB was 60.4%.

A Binary Logistic Regression was performed to ascertain the effects of demographics factor, menstrual history factor and lifestyles factor on the likelihood that students have primary dysmenorrhea. In conclusion, the model was statistically significant. The model explained 22.1% of the variance in primary dysmenorrhea status and correctly classified 72.5% of cases. There were only three factors significantly associated with primary dysmenorrhea which were menstrual flow, menstrual blood loss and family history. An increase in the number of days of menstrual flow was associated with a reduction in time likelihood of having primary dysmenorrhea. Those with having heavy and/ or heavy with clots of menstrual blood loss were 2.551 times more likely to experience primary dysmenorrhea than those with little and/ or moderate of menstrual blood loss. Those with family members who experienced the period were 5.646 times more likely to experience primary dysmenorrhea than those who had no family members experienced the period pain.

Impacts in aspects of social activities, responsibility, resting time, class absenteeism and normal daily life reported by those with primary dysmenorrhea were worse than those with no primary dysmenorrhea.

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