Stress Triggers Dysmenorrhea in The Final Year Female Students

Putri Yuliantie[1,*], Nidatul Khofiyah[2], Luluk Rosida[3]

[1,2,3] Universitas 'Aisyiyah Yogyakarta, Jalan Ringroad Barat No.63 Nogotirto Gamping Sleman, Daerah Istimewa Yogyakarta 55592, Indonesia
[1]putriyuliantie15@gmail.com*, [2]nidatulkhofiyah@unisayogya.ac.id, [3]lulurosida@unisayogya.ac.id
* corresponding author
Submission date: 26 November 2020, Receipt date: 12 Februari 2021, Publication date: 1 April 2021

Abstract

The reproductive health of womenis an essential component, several problems that can occur in the reproductive health of women, one of which is menstrual pain, this complaint is affected by psychological conditions. As a result, if it is not addressed immediately, it emerges the disruption in the routine and depression. The purpose of this study was to find out whether stress affects the occurrence of dysmenorrhea on the final year female students. The research method was the observational analytic with cross sectional approach. Sample consisted of 211 respondents, the analysis used was Kendal Tau. The result of the p-value was 0.000 and the contingency coefficient value was 0.378. It indicated that there was relationship between stress and dysmenorrhea in final year female students of Universitas 'Aisyiyah Yogyakarta.

Keywords: *dysmenorrhea, pressure, pain, stress*

INTRODUCTION

Dysmenorrhoea is a gynecological disorder that occurs in women of childbearing age. The prevalence of dysmenorrhea is reported from 43% to 90%. Approximately 10-15% of women undergo the dysmenorrhoea that accompanied by the disturbancesthat cannot carry out the activities, thus, it encourages them to stay on the bed which results the absence from school, loss of work time, and decreased quality of life (Wang et al. 2014). The prevalence of dysmenorrhea of 72.89% increases in developing countries. Dysmenorrhea occurs in women that aged 15-30 years, while in Yogyakarta the rate of dysmenorrhea is around 52%, some of the women deal with the dysmenorrhea by taking pain relievers (Sabaruddin 2017).

The issue of menstrual pain can have a serious impact if it is ignored continuously, due to it can interfere with daily activities, it encourages women to be restless, and become more serious till depression. Issues that often occur are menstrual cycle irregularities, infertility, and infections caused by dysmenorrhea (Lianawati dan Anjarwati, 2011) . The occurrence of dysmenorrhea in adolescents is considered as natural thing for women so that this problem get less attention from women and society, some women are silent to acceptthis discomfort, women become lethargic, pale, lack of meditation, so that it can cause negative matterson the activity (Khotimah, Kirnantoro, dan Cahyawati, 2014).

Dysmenorrhea can be viewed as the condition of multifactorial. Many studies show the factors that associated with dysmenorrhea and it covers early menarche, nulliparity, history of dysmenorrhea, menorrhagia, psychology, and lifestyle such as smoking, drinking alcohol, and caffeine intake (Ju, Jones, and Mishra 2014). In this regard, the study about psychological stress and dysmenorrhea is rarely to be examined, so then the aim of this study was to know theoverviewon the characteristics of final yearfemale students who experience dysmenorrhea, stress, and analyze the relationship between stress and dysmenorrhea. A preliminary study conducted in 2018 on final year female students, it consisted of 448 female students and there were 196 (44%) female students who undergone dysmenorrhea during menstruation.

RESEARCH METHODS

This cross-sectional study was conducted in 2019 and it useda sampling quota of 211 female student as the respondents at Universitas'Aisyiyah Yogyakarta. Primary data collection used a valid and reliable questionnaire, the adobsi questionnaire from the DASS 42 (Depression Anxiety and Stress Scale) used a 16-item Stress Scale (Lovibond. 1995)and a Visual Analog Scale questionnaire to measure pain levels(Kersten, Küçükdeveci, and Tennant 2012). The analytical method used was the statistical test using univariate analysis and bivariate analysis (Kendal Tau) with the confidence was 95%.

RESULTS AND DISCUSSION

Table 1. Characteristics of respondents

Characteristic	Frequency	Percentage
Age 21	90	42.7
22	70	33.2
23	34	16.1
24	11	5.2
25	6	2.8
BMI Underweight	26	12.3
Normal	150	71.1
Overweight	35	16.6
Total	211	100

Based on the table, it indicates that 90 respondents (42.7%), the majority are 21 years old, 35 respondents (16.6%) are BMI of overweight. The finding that the frequency of dysmenorrhea is higher in young women (Iacovides, Avidon, & Baker, 2015) and women who experience longer menstrual periods and more menstrual bleeding is consistent with previous studies (Martínez, et al. 2018). This illustrates the relationship between body mass index and dysmenorrhea, the underweight and overweight significantly are associated with dysmenorrhea (Andriani and Khusnus 2015). The results are consistent with previous research on the relationship between low body mass and dysmenorrhea in adolescents and women aged 19-21 years (Chauhan and Kala 2012). However, being overweight

has been shown to be a risk factor for dysmenorrhea, increasing the risk of experiencing severe pain (Ozerdogan et al. 2009).

Table 2. Distribution of frequency based on the level of dysmenorrhea pain in female students

Dysmenorrhea	Frequency	Percentage
No Pain	2	0.9
Mild Pain	62	29.4
Moderate Pain	113	53.6
Severe pain	32	15.2
Very Severe Pain	2	0.9
Total	211	100

There are 113 respondents (53.6%) who experience moderate pain of dysmenorrhea, and 2 respondents (0.9%) experienced very severe dysmenorrhea. This illustrates that everyone has a different reaction to menstrual pain, the occurrence of dysmenorrhea is due to the faster secretion of prostagladins which emerge the dysmenorrhea, prostagladin affects the uterine muscles (Nursalam et al. 2018). Excessive prostagladin levels will trigger more uterine contractions frequently so that women can undergo severe pain (Ammar 2016). The imbalance of prostaglandin is associated with dysmenorrhoea. Besides the progesterone, hormone relates to stress, includes adrenaline and cortisol, and influences prostaglandin synthesis, which points out that stress may have both a direct and secondary effect on the concentration of prostaglandin in the myometrium (Wang et al. 2014).Pain in menstruation is caused by several factors, including heavy menstrual bleeding and longer menstrual duration. Parity and age are very influential in reducing the occurrence of dysmenorrhea(Petraglia et al. 2017).

Table 3. Frequency distribution based on the level of stress in female students

Stres	Frekuensi	Persentase
Normal	8	3.8
Mild	61	28.9
Moderate	90	42.7
Severe	45	21.3
Very Severe	7	3.3
Total	211	100

Most of the respondents (42.7%) with moderate stress. Several studies have shown a relationship between stress and dysmenorrhea, previous studies have not shown a relationship definitely(Prabin Kumar et al. 2017).Stress is affected by various causes or stressors, including pressure, workload, economy, work, and family conflicts. (Nagma et al. 2015). This study points out that the burden of final project that assigned to female students is part of the stressors.There are various coping strategies that are grouped into 2 types, namely problem focused and emotion-focused. Problem-focused coping aims to solve problems or do something to change the source of stress. Emotion-focused coping aims to reduce or manage emotional distress associated with the situation. Although in most stressors both types of coping are found, problem-focused

coping is more dominant than emotion-focused coping(Shah navas 2012). Research conducted in 2015 reported that the more positive the coping strategy was, the lower the stress level, and vice versa(Busari 2014).

Table 4. Dummy table of stress on dysmenorrhea

Stres	Dysmenorrhea										Total		p-value	Coefficient of Correlation
	No Pain		Mild		Moderate		Severe		Very Severe					
	f	%	f	%	f	%	f	%	f	%	f	%		
Normal	2	0.9	4	1.9	2	0.9	0	0	0	0	8	3.8		
Mild	0	0	33	15.6	25	11.8	4	1.9	0	0	62	29.4		
Moderate	0	0	25	11.8	49	23.2	15	7.1	0	0	89	42.2	0.000	0.378
Severe	0	0	5	2.4	29	13.7	10	4.7	1	0.5	45	21.3		
Very Severe	0	0	1	0.5	2	0.9	3	1.4	1	0.5	7	3.3		
Total	2	0.9	68	32.2	107	50.7	32	15.1	2	0.9	211	100		

The significant value of the stress correlation test with dysmenorrhea used the formula of Kendal Tau and it has been obtained a p-value of 0.000 (<0.05). It is discovered that stress affects the occurrence of dysmenorrhea in final year female students at Universitas 'Aisyiyah Yogyakarta. The value of the correlation coefficient is positive (0.378), it indicates that stress affects the occurrence of dysmenorrhea by having sufficient strength. Previous research has revealed that the relationship between psychological stress and dysmenorrhea is not fully understood. However, the individual who is under stress, the individual willundergo a neuroendocrine response. Cortisol which is regulated by corticotropin releases the hormone Corticotrophin Releasing Hormone (CRH) as the main stress response, namely the hypothalamus will secrete through the pituitary adrenocorticotrophic hormone (ACTH) and progesterone has a role in forming follicles so that it is disturbed due to thestimulating hormone of the follicle causes the hormone disturbances (Fernández-Martínez and Zafra 2019).This condition is assumed to play an important role in the mechanism of dysmenorrhea and it has been shown that it can affect both prostaglandin of PGE2 and PGF2 synthesis as well as binding to myometrial receptors which will affect uterine muscle and vascular tone (Ortiz 2010).

CONCLUSION

Regarding to the characteristics of the respondents, the average age was 21-22 years who experienced stress and dysmenorrhea, the body mass index triggered dysmenorrhea in women, and most respondents underwent moderate stress (42.3%), while the respondents experienced dysmenorrhea with moderate pain (53.6%). Further, the results of statistical tests indicated that stress affected the occurrence of dysmenorrhea in final year female students at Universitas 'AisyiyahYogyakarta, whose strength was quite tight. Thus, the stress

management could be applied to reduce the level of stress, prevent severe dysmenorrhea and increase the productivity of women with dysmenorrhea.

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