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Determinants Of Premenstrual Syndrome And Premenstrual Dysphoric Disorder In Adolescent In Covid-19 Era

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ABSTRACT

This pandemic has resulted in many changes, one of which is online learning. This change causes increased stress on students. In women, stress is one of the factors causing the symptoms of premenstrual syndrome (PMS) and premenstrual dysphoric disorder (PMDD). Women who experience PMS and PMDD will interfere with daily activities and interfere with social relationships. The occurrence of PMS and PMDD will reduce the quality of life of adolescents and will result in disrupted learning processes, so we need to know whether the pandemic affects the increase in PMS and PMDD so that we can determine preventive measures. This needs to be done considering that this pandemic will continue and we need to adapt to these changes. This study aims to see if there is a difference in the prevalence of premenstrual syndrome and premenstrual dysphoric disorder before and after the pandemic occurs and to find out what factors can influence it. This study will use quantitative research methods with a cross sectional approach. Data collection will be carried out at three high schools, namely public, private and high schools with dormitories. Determination of schools using simple random sampling technique and for respondents using total sampling. The sample in this study amounted to 252 students in grade 3 SMA. This data collection is done by filling out a questionnaire. Data collection was carried out after the researchers determined the school as the research location and permission was obtained. The data that has been collected will be processed using SPSS 21. Data analysis will use univariate, bivariate and multivariate data analysis. In this study, the factors that did not affect the occurrence of PMS/PMDD in adolescents were coffee consumption, calcium, body weight and heredity. The factor that influences the occurrence of PMS and PMDD is stress with a P-value of 0.000. Stress is a determining factor in the occurrence of PMS or PMDD in adolescents, students, teachers and health workers should collaborate in dealing with stress in adolescents, especially during the COVID-19 pandemic.

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1. INTRODUCTION

The pandemic period causes us to adapt to new habits. The changes that have occurred due to the pandemic are experienced by everyone, including the students. The limited face-to-face causes students to have to attend school through online media. This online school causes anxiety and stress levels to increase among students who are still in their teens. Adolescence is a transitional period where in adolescence they will experience various changes that will also increase their own stress. Changes in adolescents coupled with adaptation to the learning process carried out online will increase the level of anxiety and stress in adolescents. This is evidenced by several studies, including a study conducted on 340 students who did online learning, it was found that 18% of them had a moderate level of anxiety, 7% of whom had a severe level of anxiety[1]. Another study on student anxiety found that the anxiety that occurs in students is mainly caused because they do not understand the material presented besides that their anxiety is due to fear of an unstable internet connection[2] Anxiety and stress experienced by

students can cause various negative impacts. In female students, for example, anxiety and stress will cause premenstrual *syndrome* and *premenstrual dysphoric disorder*.

This is evidenced by research in students who found that there is a significant relationship between stress levels and the occurrence of premenstrual syndrome with a p value of 0.001 Research in Japan recently found that there is a significant influence between the occurrence of premenstrual syndrome [3] and pandemic and in this study it was found that during COVID-19 premenstrual syndrome that occurs experiences more severity than before the onset of COVID-19. Currently, there is no research in Indonesia that has found whether there is an increase or influence of the COVID-19 pandemic on the occurrence of premenstrual syndrome like the Japanese study, so it is necessary to conduct this research to update existing data on premenstrual syndrome that occurs in Indonesia. The purpose of this study was to compare the prevalence of adolescents who experienced premenstrual syndrome and [4]premenstrual dysphoric disorder before and after the pandemic and find out what factors influenced it. This research needs to be carried out considering that this pandemic will continue and will cause stress in students which will indirectly result in premenstrual syndrome and premenstrual dysphoric disorder. As a result of premenstrual syndrome itself will result in disruption of the learning process, social relationships so that later it will reduce the quality of life of adolescents. This study is a basic study, so that later it will determine what steps we can take to prevent or reduce the occurrence of premenstrual syndrome and premenstrual [5] dysphoric disorder in adolescents.

2. METHOD

In this study, the method used was a quantitative research method with a cross-sectional approach. This type of study aims to determine the correlation between factors that influence the occurrence of symptoms of premenstrual syndrome and *premenstrual dysphoric disorder* with the incidence of PMS and PMDD. Data collection in this study was carried out once measurements using questionnaires as a measuring tool. The population in this study was all 3rd grade high school students in the city of Metro Lampung. The choice of Metro city as a research place because Metro city is known as a student city where in this city there are 28 high schools and equivalent. In this study, the samples used were 3 schools, namely 1 private school, 1 school with a dormitory and 1 public school. The selection of the school will be carried out using a simple random sampling technique where the researcher will draw off which school will be the research location, after finding the school that will be used as the research location, the researcher will take all the students in the school as research samples (*total sampling*) . The inclusion criteria for respondents in this study were having menstruation, being willing to be respondents and being present at the time of data collection, so that the number of samples in this study was obtained as many as 252 students.

This research has received an ethics permit from the Health Research Ethics Commission of the Tanjungkarang Health Police with what is stated in the ethics letter number 203/KEPK-TJK/X/2022. This study will use an instrument in the form of PMDD diagnosis criteria using the *Diagnostic and Statistical Manual of Mental Disorder* (DSM-IV). This diagnosis has been standardized and has been translated into Indonesian by Hapsari et al in 2006 which was cited from Dewi's research. The determination of the diagnosis of PMDD is carried out retrospectively with PMDD criteria if for 5 days before menstruation until several days after menstruation there are five or more symptoms point a to point n and or appear at least one symptom in points a, b, c, d and the symptoms interfere with daily activities such as work, study, relationship with family, relationships with friends and so on. The symptoms of PMDD in this instrument are:[6]

a. Anxious
b. Difficulty concentrating
c. Suddenly feeling sad or crying
d. Irritability
e. Easy to feel tired
f. Changes in appetite (laziness to eat or increase appetite)
g. Having a sleep disorder (e.g., difficulty starting sleep, difficulty maintaining a good night's sleep or needing more sleep

h. Breasts feel tight
i. Headache
j. Muscle or joint pain
k. Weight gain
l. Depression (feeling sad or feeling hopeless in the future)
m. Decreased interest in routine activities (e.g. studying, hanging out with friends)
n. Irritable

The results of this study were analyzed using SPSS IMB 21 with the tests used were univariate and bivariate tests

3. RESULT AND DISCUSSION

In the following, is a table of characteristics of respondents

Table 1. Characteristics of Respondents

Variable	Category	Frequency	Submit %
Age	13-17 years (early	236	93,6
	adolescence)	16	6,34
	18-21 years (late teens)		
Menarche age	< 12 years	123	48,8
	12-14 years	111	44,0
	> 14 years	18	7,1
Duration of	< 3 days	2	8
menstruation	3-7 days	192	76,2
	> 7 days	58	23
Menstrual	PMS/PMDD	198	78,6
Complaints	Tidak PMS/PMDD	54	21,4
Total		252	100

Source: Primary Data, 2022.

In the data above, it can be seen that the majority of respondents in the study of adolescents with ages that fall into the category of early adolescents and the age of first time get menstruation at the age of under 12 years with the most menstrual length between 3 to 7 days and this study also found that most respondents experienced PMS / PMDD symptoms.

Table 2. Correlation test results of PMS, PMDD with coffee consumption

Menstrual Complaints	Coffee Consumption		Total	p-value
	Already	Do not		
PMS/PMDD	37	161	198	
Tidak PMS/PMDD	14	40	54	0,241
Total	51	201	252	

In the results above, a p-value above 0.05 is obtained so that it can be concluded that there is no relationship between the occurrence of PMD / PMDD and coffee consumption

Table 3. Results of the PMS, PMDD correlation test with calcium consumption

Menstrual Complaints	Calcium Consumption		Total	p-value
	Already	Do not		
PMS/PMDD	58	140	198	
Tidak PMS/PMDD	16	38	54	0,962
Total	74	178	252	

In the results above, a p-value above 0.05 is obtained so that it can be concluded that there is no relationship between the occurrence of PMD / PMDD and calcium consumption

Table 4. PMS, PMDD correlation test results with body weight (BMI)

Menstrual Complaints	Weight loss (BMI)		Total	p-value
	Normal	Less/more		
PMS/PMDD	124	74	198	
Tidak PMS/PMDD	38	16	54	0,293
Total	162	90	252	

In the results above, a p-value above 0.05 was obtained so that it can be concluded that there is no relationship between the occurrence of PMD / PMDD and body weight.

Table 5. Results of the correlation test of PMS, PMDD with heredity

Menstrual Complaints	Descendents		Total	p-value
	Already	Do not		
PMS/PMDD	70	128	198	
Tidak PMS/PMDD	15	39	54	0,298
Total	85	167	252	

In the results above, a p-value above 0.05 is obtained so that it can be concluded that there is no relationship between the occurrence of PMD / PMDD and heredity

Table 6. Results of the PMS, PMDD correlation test with stress

Menstrual Complaints	Stress levels		Total	p-value
	Light	Medium/Heavy		
PMS/PMDD	21	177	198	
Tidak PMS/PMDD	18	36	54	0,000
Total	39	213	252	

Based on the correlation table above, it was found that factors that are not related to the occurrence of PMS / PMDD symptoms in adolescents are coffee, calcium, heredity and weight while factors related to the occurrence of PMS / PMDD symptoms in adolescents are stress with a p-value of 0.000

The age of menarche in this study was less than 12 years, this is not the same as n what was found in previous research studies, namely the study conducted by those who found the average age of menarche was 12.9 years. The average menarche age of respondents in this study is also below the national average age of menarche found in the 2018 riskesdas data The age of menarche that is too fast will cause several problems such as increasing early pregnancy and increasing the transmission of sexual infections and increasing the rate of marriage in children. The duration of menstruation in this study was 3-7 days, this is in accordance with what was found in another study with the number of subjects 158 with an average menstrual length of 3-7 days The duration of menstruation is included in the normal category [7][8][9][10] where a study[11] states that menstruation in katakana is normal if the menstrual cycle is 21-35 days with a menstrual duration of 3-7 days. In this study, the number of respondents who experienced PMS / PMDD symptoms amounted to 78.6% of the total population of 252 respondents when comparing with previous studies conducted during the COVID-19 period, none of which were carried out by the PMS and PMDD numbers were lower, namely 66.1%.[12]Goddess, Tri Kesuma year 2019

In the results of this study, it was found that there was no relationship between coffee consumption and the occurrence of PMS / PMDD with a p-value of 0.241. The results of this study are in accordance with what was found in a study published in 2016, namely that there is no relationship

between the risk or specific symptoms of PMS with coffee intake and kaffein levels. This is in contrast to the results of studies conducted by those who found that the total consumption of caffeinated beverages is closely related to the occurrence of moderate and severe PMS symptoms. [14]R.A et al., year 2018[11]

In the correlation test between PMS / PMDD symptoms and calcium consumption, no relationship was found, namely with a p-value of 0.962. The results of this study are not in line with the studies conducted by those who found that the daily consumption of calcium 500mg is effective in reducing PMS symptoms, but this study is in line with the research conducted by those who found that there is no relationship between calcium consumption and PMS symptoms with a p-value of 0.878. Shobeiri et al., year 2017[17]

In the results of the correlation test analysis between PMS / PMDD and body weight (Body Mass Index) it was found that there was no relationship with the p-value value of 0.29 this result supported previous research conducted by those who found that women with normal BMI also had PMS compared to women who had BMI above 25. This is in contrast to studies that have found that there is a significant association between BMI and STDs, young women who are overweight have a higher severity of STDs.[18]The-Banna dkk year 2019

In the correlation test results between PMS / PMDD and offspring, the results of the p-value of 0.298 were obtained so that it can be concluded that there is no relationship between the two variables. The results of this study are not in line with the research conducted which found that there was a significant relationship between family history and the incidence of PMS / PMDD with 0.002[11]

In the results of the analysis of the relationship between PMS / PMDD and stress, significant results were obtained with a p-value of 0.000. This is in accordance with the napa found in the study which found that there was a significant relationship between stress andAndani, 2020 PMS/PMDD with a p-value of 0.001, but this is not in line with the research conducted by [21] those who found no significant relationship between oral contraceptives, drug use and stress.

4. CONCLUSION

There is no relationship between PMS / PMDD symptoms and coffee consumption (caffeine), calcium, BMI and hereditary history, while the variable that shows a significant relationship is stress with a p-value of 0.000.

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