



Body Mass Index With Dysmenorrhoea In Adolescents Girl

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ABSTRACT

Dysmenorrhoea is one of the most common menstrual disorders in adolescent girl and has quite serious effects because it can cause disruption of daily activities. One factor that causes dysmenorrhoea is due to an abnormal Body Mass Index. This study aims to determine the relationship of Body Mass Index with dysmenorrhoea in adolescent girl. This research was at SMPN 1 Mojoanyar Mojokerto. The population in this study were all adolescent girls of class X majoring in OTKP at SMPN 1 Mojoanyar Mojokerto who met the study criteria amounted to 51 people. The sample in this study were some of the adolescent girls of class X majoring in OTKP at SMPN 1 Mojoanyar Mojokerto who met the research criteria amounted to 45 people. The sampling technique used is probability sampling with sampling techniques using simple random sampling. This type of research is a non-experimental correlational research with cross sectional method. The instruments used in data collection were weight scales, height measurements, observation sheets, and NRS pain measurement scales. The data analysis technique used is the Spearman correlation test using the SPSS program. The results of this study indicate that the respondents who experience severe dysmenorrhoea most are those who have a heavy fat BMI that is as many as 7 respondents (87.5%) with statistical test results showing sig. $0.002 < \alpha (0.05)$ which means that there is a significant relationship between Body Mass Index (BMI) and dysmenorrhoea in adolescent girl in SMPN 1 Mojoanyar Mojokerto. Looking at the results of this study, it is necessary to control the Body Mass Index (BMI) in order to minimize the frequency of dysmenorrhoea experienced by adolescent girl.

Keywords: Body Mass Index; Dysmenorrhea

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INTRODUCTION

Adolescence is a transitional period that occurs between childhood and adulthood that begins at age 12 and ends at age 20. As is the case with other periods or periods of growth and development, in adolescence there are also some changes both physically and psychologically. Physical changes experienced by adolescents are characterized by changes in primary sex and secondary sex. In adolescent girls, primary sex changes are characterized by menstruation and are followed by secondary sex changes in the form of enlarged hips and having breasts.¹ Menstruation is a normal condition that every young woman will definitely experience in normal health, and is very important for young women. At the time of menstruation, there will be some health problems although not all young women will experience them. One of the most common health problems in adolescent girls, which is related to menstruation, is dysmenorrhoea or menstrual pain.² Dysmenorrhoea occurs mainly in the lower abdomen, but can also spread to the lower back, waist, pelvis, upper thighs, to the calves. This process is a normal part of the menstrual process, and usually begins to be felt when bleeding begins and continues for up to 32-48 hours.³ There are many risk factors that cause adolescent girls to experience dysmenorrhoea, one of which is an abnormal Body Mass Index (BMI). Body Mass Index (BMI) is the result of the calculation of the comparison of weight and height through the formula $\text{weight} / \text{height}^2$ (kg / m²).⁴ At SMPN 1 Mojoanyar Mojokerto, there are still many young women who experience dysmenorrhoea during menstruation and some still have an abnormal Body Mass Index (BMI) (underweight or overweight). The incidence of dysmenorrhoea in the world is very large. According to data from the American Congress of Obstetricians and Gynecologists, more than 50% of adolescent girls experience dysmenorrhoea each month. While as many as 90% of adolescent girls worldwide experience problems during menstruation and more than 50% of adolescent girls have dysmenorrhoea with 10-20% of them experiencing quite serious symptoms.⁴

In adolescent girls there are 4 phases of the menstrual cycle, namely the menstrual phase or bleeding (days 1 to 5), the follicular phase (days 6 to 13), the ovulatory phase (day 14), and the luteal phase (days 15 to 28).⁵ In the luteal phase, a corpus luteum is formed in the ovary which is a former follicle after the egg is left. In the luteal phase, estrogen and testosterone will decrease and instead the body begins to produce the hormone progesterone. An increase in the hormone progesterone in the luteal phase will increase prostaglandin levels, causing contractions in the myometrium which can cause dysmenorrhoea.⁶ In addition, abnormal Body Mass Index (BMI) factors can also affect the occurrence of dysmenorrhoea, where in overweight BMI there is excess fat tissue which can result in hyperplasia of blood vessels in the reproductive organs, so that blood flow that should flow during menstruation becomes disrupted and can cause dysmenorrhoea.⁵ While the underweight Body Mass Index (BMI) can also trigger dysmenorrhoea because low nutritional status is one of the important

things and can affect the growth and function of organs so that it can cause disruption of reproductive function including menstruation. Dysmenorrhoea is one of the menstrual disorders that has a serious impact on adolescent girls because it can cause disruption of daily activities, especially learning activities, not excited in doing activities, tired quickly, difficult to concentrate, even to the point of missing school due to dysmenorrhoea.⁶

METHOD

The type of research used is correlational non-experimental research with cross sectional methods. The population in this study was all grade IX adolescent girls at SMPN 1 Mojoanyar Mojokerto who met the research criteria totaling 51 students. The sample in this study was some grade IX adolescent girls at SMPN 1 Mojoanyar Mojokerto who met the research criteria as many as 45 students. The sampling technique used is probability sampling with sampling techniques using simple random sampling. The instruments used in data collection are weight scales, height gauges, observation sheets, and pain measurement scales NRS. Data collection was carried out when there were respondents who experienced menstruation, namely by researchers coming to school to share the NRS pain measurement scale with the adolescent girls and calculating Body Mass Index (BMI) to determine the average BMI number with the calculation of body weight in kilograms divided by the square of height in meters (kg / m²). The criteria in this study were grade IX students at SMPN 1 Mojoanyar Mojokerto, who experienced dysmenorrhoea in three consecutive menstrual cycles, respondents who experienced menstruation.

RESULTS

Based on the research, the results obtained :

Table 1. Characteristics of Respondents Based on Body Mass Index

BMI	Sum	%
Heavy that	5	11,1
Skinny light	12	26,7
Normal	16	35,5
Light grease	4	8,9
Heavy grease	8	17,8
Total	45	100

Based on table 1, almost half of respondents' Body Mass Index (BMI) is normal.

Table 2. Characteristics of respondents based on Dismenorea

Dismenorea	Sum	(%)
Painless	0	0
Mild pain	10	22,2
Moderate pain	23	51,1
Severe pain	12	26,7
Total	45	100

Based on the table of young women who experience dysmenorrhoea with mild degrees as many as 10 people (22.2%), young women who experience dysmenorrhoea with moderate degrees as many as 23 people (51.1%), and young women who experience dysmenorrhoea with severe degrees as many as 12 people (26.7%). From table 2 it can be concluded that most respondents experienced moderate pain as many as 23 respondents (51.1%).

Table 3. Body Index (BMI) Relationship with Dysmenorrhoea in Young Women

BMI	Painless	Mild pain	Dismenorea		Total
			Moderate pain	Severe Pain	
Heavy that	0 (0%)	1 (20%)	4 (80%)	0 (0%)	5 (100%)
Skinny light	0 (0%)	4 (33,3%)	7 (58,4%)	1 (8,3%)	12 (100%)
Normal	0 (0%)	3 (18,75%)	10 (62,5%)	3 (18,75%)	16 (100%)
Light grease	0 (0%)	2 (50%)	1 (25%)	1 (25%)	4 (100%)
Heavy grease	0 (0%)	0 (0%)	1 (12,5%)	7 (87,5%)	8 (100%)
Total	0 (0%)	10 (22,2%)	23 (51,1%)	12 (26,7%)	45 (100%)

Based on table 3, data on adolescents who experience severe dysmenorrhoea the most are those who have a severe fat BMI, which is 7 respondents (87.5%). The results of statistical tests using the correlation test from Spearman showed $\text{sig}.0.002 < \alpha(0.05)$ then H_0 was rejected and H_1 was accepted, which means that there is a relationship between Body Mass Index (BMI) and Dysmenorrhoea in Young Women at SMPN 1 Mojoanyar Mojokerto.

DISCUSSION

Relationship of Body Mass Index with Dysmenorrhoea

The results of cross-tabulation of the relationship between Body Mass Index (BMI) and dysmenorrhoea showed that respondents who experienced the most severe dysmenorrhoea were those who had a severe fat BMI, which was as many as 7 respondents (87.5%). The results of statistical tests using the correlation test from Spearman (rs) showed $\text{sig. } 0.002 < \alpha (0.05)$ then H_0 is rejected and H_1 is accepted which means that there is a relationship between Body Mass Index (BMI) and dysmenorrhoea in adolescent girls at SMPN 1 Mojoanyar Mojokerto. Underweight BMI status is thought to be related to psychosocial factors, namely irregular eating patterns. The energy and nutritional needs of adolescents are quite high because they are used for their growth.⁷ This certainly causes adolescents to experience nutritional deficiencies which certainly affect their daily activities and reproductive system. Obese women have twice the risk of experiencing menstrual cycle disorders than women with normal BMI.

Based on the results of interviews and observations that have been conducted on adolescent girls at SMPNN 1 Mojoanyar Mojokerto, at the time of the study, data was obtained that respondents with a mild thin Body Mass Index (BMI) often experience dysmenorrhoea caused by lack of food intake, including the intake of besi.⁸ Where we know that with the lack of consuming food which contains iron will cause anemia. If you have anemia, the body's resistance will decrease, increasing pain during menstruation.⁹ Likewise, respondents with a Body Mass Index (BMI) of severe fat more often experience dysmenorrhoea with severe pain due to unbalanced nutrition and excessive fat tissue which can result in hyperplation of blood vessels by fat tissue in the female reproductive organs, so that blood that should flow in the menstrual process is disrupted and causes pain during menstruation.⁵ Another factor that affects the BMI of obesity dysmenorrhoea is excessive fatty acids in the body that can interfere with progesterone metabolism in the luteal phase of the menstrual cycle, as a result of which there is an increase in prostaglandin levels which will cause pain during menstruation.¹⁰ Thus, Body Mass Index (BMI) in adolescent girls can cause dysmenorrhoea. Therefore, young women must pay attention so that their BMI is within normal limits.

CONCLUSION

The Body Mass Index (BMI) of adolescent girls at SMPN 1 Mojoanyar Mojokerto is almost half, which is normal as many as 16 respondents (35.5%). Dysmenorrhoea felt by young women at SMPN 1 Mojoanyar Mojokerto is mostly moderate pain, namely as many as 23 respondents (51.1%). There is a significant relationship between Body Mass Index (BMI) and dysmenorrhoea in adolescent girls at SMPN 1 Mojoanyar Mojokerto.

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