

The Relationship Between Menarche Age and Body Mass Index on Dysmenorrhea Pain in Young Women

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Abstract

Dysmenorrhea can limit the social interaction and learning activities of adolescent girls, causing excessive discomfort and anxiety. The incidence of dysmenorrhea in adolescent girls is 54.89% in Indonesia. Body mass index and age of menarche are one of the risk factors for primary dysmenorrhea. The study aimed to determine whether there is a relationship between Menarche Age and Body Mass Index in Primary Dysmenorrhoea Pain. Research methods with quantitative methods. This study used an analytical survey method with a cross-sectional approach. The sampling technique used with the total sampling technique amounted to 80 adolescent female students who had menstruated. The data collection method in this study used a standard NRS pain scale questionnaire and Microtoise to determine BMI. Data analysis using Spearman rank statistical tests. The results of the study obtained were the majority of normal menarche aged 12-14 years, as many as 44 female students (55.0%), the majority of normal BMI 18.5-25 as many as 35 female students (43.8%) and the majority experienced moderate pain as many as 35 female students (46.2%) statistical test results were obtained namely 0.636 and significance 0.024. Based on this value, it can be concluded that there is no relationship between the age of menarche and dysmenorrhea pain and there is a relationship between body mass index and dysmenorrhea pain. It is recommended that students be motivated to reduce dysmenorrhea by sleeping regularly and routinely exercising 1 to 2 times a week.

Keywords: age of menarche; body mass index; dysmenorrhea pain

1. Introduction

Reproductive health for a woman is a very important component. Women have a reproductive system that is very vulnerable to disorders that can cause problems with their reproductive health. One of the problems that occur in adolescent reproductive health during menstruation is dysmenorrhea or pain during menstruation (Sinaga, 2017).

The incidence of dysmenorrhea is quite high worldwide. According to the World Health Organization (WHO) data report, 1,769,429 people (90%) of women experienced dysmenorrhoea, with 10-15% experiencing severe dysmenorrhea (Palembang, 2022). The highest prevalence is often found in adolescents, which is estimated to be between 20%-90%. The vulnerable age of adolescent girls who are most often dysmenorrhea is the age of 14-19 years. In line with Sanctis' 2015 study, which found that adolescents with the most dysmenorrhea, the average age was 17 years (Parker Ma, Sneddon Ae, 2010).

Based on research in the United States, menstrual pain or dysmenorrhea is a case that often occurs in women of productive age, which is 45%-90%, and 60%-70% in unmarried adult women (Parker Ma, Sneddon Ae, 2010). On average, in European countries, dysmenorrhea occurs in 45%-97% of women, with the lowest prevalence being in Bulgaria at 8.8% and the highest in Finland at 94%. In East Asia, the prevalence of dysmenorrhea was found to be 46.8% in Japan. According to the study, a study in Indonesia reported a dysmenorrhea incidence rate of 64.22% consisting of 54.89% primary dysmenorrhea and 9.36% secondary dysmenorrhea (Parker Ma, Sneddon Ae, 2010).

Based on research conducted in Surakarta, it was reported that the prevalence of dysmenorrhea in junior high school adolescents there was quite high at 87.7%. Yogyakarta there is no exact data on the prevalence of dysmenorrhea written in the Yogyakarta Health Office, but a study conducted in Bantul, Yogyakarta on students of one of the junior high schools, found that 64.4% had dysmenorrhea, the majority of whom were 14 years old (Sanday et al., 2019).

Based on survey results (Issabella et al., 2022) in Sleman Regency the increasing prevalence of dysmenorrhea in adolescent girls in Sleman Regency causing excessive discomfort and anxiety, 254 adolescent girls have experienced menstruation and 186 adolescent girls (73.22%) have dysmenorrhea. Dysmenorrhea can be detrimental to the personal lives of young women and limit their social interactions and learning activities. A research study that has been conducted in Mexico found dysmenorrhea has an effect of 65% on students' daily activities. Characteristic factors of menstruation that limit students' daily activities are abdominal cramps in the lower abdomen at 93%, flatulence by 67%, easy emotions by 50%, depression by 48%, breast pain by 45%, low back pain by 43%, gastrointestinal disorders by 26%, headaches by 24%, and swelling in the legs by 19%, in the research conducted by Issabela, research was only through surveys during the COVID-19 outbreak where this survey was carried out through social media / online research titles are different and the number of respondents studied is also different. Therefore, the researcher is interested in conducting research.

Students who missed school due to inability to concentrate at school during dysmenorrhea were 79%, the poor class presentation was 27%, and those focused on pain experienced 19.7%. During menstruation, students cannot come to school, or even once they come to school, they cannot concentrate on lessons and are worried about leaking, so they keep thinking about their period. They do not want to come to school, even if they are in the exam they cannot concentrate on doing the exam questions (Parker Ma, Sneddon Ae, 2010).

Symptoms of primary dysmenorrhea that are felt are pelvic or lower abdominal pain (generally lasting 8-72 hours), which radiates to the back and along the thighs and occurs before and during menstruation. In addition, it is not accompanied by an increase in the amount of menstrual blood and the peak of pain often occurs when bleeding is still small (Laila, 2016).

The causes of dysmenorrhea are divided into primary dysmenorrhea and secondary dysmenorrhea. Secondary dysmenorrhea can be caused by endometrioses, fibroids, pelvic inflammatory disease, IUDs, tumors in the fallopian tubes, while the cause of primary dysmenorrhea is often associated with several things, including the age of <30 years, long menstrual cycles, heavy menstrual bleeding, psychological disorders, under/low body mass index status, length of menstruation, family history of dysmenorrhea and menarche age less than 12 years, Menarche age less than 12 years causes the uterus to contract more often, as a result of which more prostaglandins are produced, causing pain (Icema, 2013).

Body mass index (BMI) is one of the risk factors for primary dysmenorrhea. Women with a low body mass index (BMI) can experience dysmenorrhea due to insufficient food intake, causing anemia, which is one of the factors that can cause primary dysmenorrhea, while women who have more weight than normal experience primary dysmenorrhea because the more fat the more prostaglandins which is formed, while the enhancement prostaglandins In blood circulation is suspected as the cause of dysmenorrhea (Savitri, 2019).

From the results of research on the relationship between menarche age and body mass index for dysmenorrhea pain at SMP Muhammdiyah 2 Gamping, Sleman Yogyakarta with 80 respondents, it was obtained that the results of the frequency of menarche age in adolescent girls were mostly normal age ranging from the age of 12 years to the age of 14 years as many as 44 female students (55.0%) and the results of the frequency of body mass index in adolescent girls the majority of normal, namely BMI 18.5-25 as many as 35 female students (43.8%) with The result of the relationship between menarche age and the incidence of primary dysminorrhea in adolescent girls was a p-value of >0.05, which is 0.636. So, there is no relationship between the age of menarche and the incidence of dysmenorrhea, and

the relationship between body mass index and the incidence of primary dysmenorrhea in adolescent girls is a p-value of <0.05 , which is 0.24. So, there is a relationship between the body mass index and the incidence of dysmenorrhea.

In improving reproductive health, the government issued Law No. 36 of 2009 concerning reproductive health in the sixth part of articles 71-77, which contains articles saying that reproductive health is carried out through promotive, preventive, curative, and rehabilitative activities. Teenagers in Indonesia who experience desminore overcome it more by consuming painkillers circulating in the market. Society also has the wrong assumption that dysmenorrhea can disappear in its own way if the teenager concerned is going to marry so that society allows the disorder (Ministry of the Republic of Indonesia, 2009).

Midwives are one of health workers, and the role of midwives in reproductive health problems, with one of the problems being menstrual pain (dysmenorrhea). Efforts to prevent and handle it are by promoting health, for example counseling on menstruation in adolescents and non-pharmacological handling such as relaxation techniques in the desminore according to the authority of midwives based on the competence of the 1st midwife in Indonesia (Kepmenkes Number 369 / Menkes / SK / III / 2007). Midwives provide continuous and complete service, focusing on aspects of prevention, handling and health promotion based on partnerships (MOH, 2010). The results of preliminary studies at the research location showed that there were 1-2 female students every week entering UKS due to desminore and the school was given to drink warm water and dysmenorrhea pain relievers, therefore researchers were interested in conducting this study which aimed to find out whether there is a relationship between Menarche Age and Body Mass Index on Primary Dysmenorrhoea Pain.

2. Research Methods

Quantitative research method analytical survey with cross-sectional approach. The sampling technique used with total sampling technique amounted to 80 female students of grades VII and VIII who had menstruated at SMP Muhammadiyah 2 Gamping. The data collection method in this study used primary data with the NRS pain scale questionnaire instrument to determine the desminore pain scale and Scales and Microtoise to determine BMI with the aim of determining the relationship between menarche age and body mass index to dysminorrhea pain.

1. The research will be conducted on Thursday, May 25, 2023
2. The places that have been prepared in this study are in the UKS pavilion for filling out questionnaires and in the UKS to measure TB and BB alternately at SMP Muhammadiyah 2 gamping.
3. Time spent \pm 240 minutes
4. Researchers assisted by assistants, namely 4 assistants and assisted by BK teachers coordinate students, before the start of the research
5. The researcher shares the SOP that has been made with the assistant
6. The researcher conveys the purpose of the meeting and asks for respondents' consent. Distributing pain questionnaires (NRS) and explaining how to fill out questionnaires, respondents are asked to fill out questionnaires according to the instructions that have been explained by researchers with a filling time of 5-10 minutes; waiting for respondents to fill out questionnaires
7. Researchers assisted by 4 assistants who help check TB and BB respondents to determine BMI with 30 minutes every 1 class; researchers measuring TB change measuring BB and apply questionnaires back to each class alternately. After completing the filling, the questionnaire is returned and checked one by one for the completeness of the data and filling in the answers obtained and then coding, entered into the computer program, tabulated according to the

purpose of calculating data management then shame the purpose analysis is carried out data management calculations then conducting data analysis using SPSS.

This research has received an ethical permit from the research ethics committee of Universitas 'Aisyiyah Yogyakarta with No.2772/KEP-UNISA/IV/2023. The data obtained were processed, and bivariate analysis was carried out with a statistical Spearman rank test.

3. Research Results

3.1.Result

3.1.1. Univariate Analysis

The following is a table of respondent characteristics.

Table 1. Age Frequency Distribution of Menarche

Age of Menarche	Total (n)	%
Abnormal(age< 12 yrs old and >14 yrs)	36	45,0
Normal (12 – 14 years old)	44	55,0
Total	80	100

(Source: primary data 2023)

Based on the table above, the frequency distribution of female students with menarche age is mostly normal, starting from 12 to 14 years, with as many as 44 female students (55.0%).

Table 2. Frequency Distribution Body Mass Index

Body Mass Index	Total (n)	%
BB less (BMI < 18.5)	31	38,8
Obesity, (BMI > 25)	14	17,5
Normal, (BMI 18.5 –25)	35	43,8
Total	80	100

(Source: primary data 2023)

Based on the table above it shows that the frequency distribution of the Body Mass Index of the majority of female students Normal BMI 18.5-25 is 35 female students (43.8%)

Table 3. Frequency Distribution of Dysmenorrhea Pain

Body Mass Index	Total (n)	%
No pain (score 0)	5	6,2
Mild pain (score 1-3)	33	41,2
Moderate pain (score 4-6)	37	46,2
Severe pain (score 7-10)	5	6,2
Total	80	100

(Source: primary data 2023)

The table above shows the frequency distribution of dysmenorrhea pain. Most female students experience moderate pain (score 4-6). As many as 37 female students (46.2%)

Table 3. Frequency Distribution associated with Dysmenorrhea

Information	(n)	%
Family history of dysmenorrhea		
Yes	38	47,5
Not	42	52,5

Information	(n)	%
Regular exercise		
Orderly	34	42,5
Disorganized	46	57,5
Sleep patterns		
Regular (7-8 hours)	30	37,5
Irregular (< 8 hours)	50	62,5

(Source: primary data 2023)

Based on the table above, it can be explained that the results of the frequency distribution of supporting questions are the majority of answers related to no. 3, namely 50 female students (62.5%) do not regulate their sleep patterns, no. 2 as many as 46 female students (57.5%) are female students who do not exercise regularly, and no. 1 as many as 42 female students (52.2%) are families that do not have a history of dysmenorrhea / menstrual pain.

3.1.2. Bivariate Analysis

The test used is the Spearman rank test. Here are the results

Table 4. Relationship Between Menarche Age and Dysmenorrhea Pain

Menarche Age	Dysmenorrhea pain				Total	p-value
	No pain (0)	Mild pain (1-3)	Moderate pain (4-6)	Severe pain (7-10)		
Abnormal (age < 12 years and >14 years)	0	8	21	7	36	0,636
Normal (Age 12 – 14 years)	4	4	25	11	44	
Total	4	12	46	18	80	

(Source: primary data 2023)

Based on the Spearman rank test results to determine the relationship between menarche age and dysmenorrhea pain with a p-value > 0.05, which is 0.636. So, there is no relationship between menarche age and dysmenorrhea pain; if p-value > 0.05, then H_0 is accepted, and H_a is rejected, meaning there is no relationship between menarche age and dysminority pain.

Table 5. The relationship of body mass index to dysmenorrhea pain

Body Mass Index	Dysmenorrhea pain				Total	p-value
	No pain (0)	Mild pain (1-3)	Moderate pain (4-6)	Severe pain (7-10)		
BB less if BMI < 18.5	0	4	18	9	31	0,024
Obesity, if BMI > 25	0	3	5	6	14	
Normal, if BMI 18.5 – 25	4	5	23	3	35	
Total	4	12	37	5	80	

(Source: primary data 2023)

Based on the results of the Spearman rank test in the table above to determine the relationship of body mass index to dysmenorrhea pain with a p-value < 0.05, which is 0.024. So, there is a relationship between body mass index and dysmenorrhea pain. If p-value \leq 0.05, then H_0 is rejected and H_a is accepted, which means a relationship exists between body mass index and dysminor pain.

3.2. Discussion

Based on the results of bivariate analysis, the relationship between menarche age and dysmenorrhea pain shows. The results of data analysis can be found that the majority of respondents with normal-age menarche (aged 12-14 years), as many as 25 people with moderate pain levels (4-6) with abnormal age differences (< 12 years and >14 years) with moderate pain levels (4-6) as many as 21 female students. Based on the results of data analysis with the Spearman rank test, the relationship between menarche age and dysmenorrhea pain obtained a value of 0.636. Based on this value, because the p-value of < 0.05 means that H₀ is rejected, H_a is accepted if the significance value is smaller (<) than 0.05, it can be partially concluded that there is no "relationship between menarche age and dysmenorrhea pain in students of SMP Muhammadiyah 2 Gamping Sleman Yogyakarta."

In this study, there was no relationship between the age of menarche and dysmenorrhea; this is by the theory that menarche is interpreted as the first menstruation in adolescent girls. Menarche usually occurs between the ages of 10 and 16, with the average onset of menstruation at age 12. Menarche tends to be painless and occurs without warning. The first cycle is usually anovulation of varying length and flow. Menarche signifies the beginning of reproductive ability and is closely related to the ongoing development of secondary sexual characteristics. Menarche occurs at a time when the hypothalamic-pituitary-ovarian (HPO) axis matures and relies on the following processes: normal hypothalamic and pituitary function, normal female reproductive anatomy, normal nutrition, and the absence of other interfering chronic diseases. It is a marker of normal female reproductive health and well-being (Lacroix, 2023).

The results of the relationship between body mass index and the incidence of dysmenorrhea show a significant relationship. This follows the theory that explains that one of the problems that can cause dysmenorrhea is nutritional status. Overweight or obesity is one of the risk factors for dysmenorrhea. However, on the other hand, someone who is underweight can also experience dysmenorrhea. The mechanisms underlying the association between BMI and dysmenorrhea are not fully understood. There may be differences between the mechanisms in underweight and overweight-obese women. 31 Insufficient food intake in women with underweight nutritional status can trigger dysmenorrhea because 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. Low caloric intake, body weight, and body fat interfere with the pulsatile secretion of pituitary gonadotropins, leading to an increased incidence of dysmenorrhea. However, a certain amount of body fat can be an important influence for maintaining a normal ovulation cycle where too much or too little fat can affect reproductive health (Harahap et al., 2021)

The first menstruation, or menarche, is a time when a sign that the female reproductive organs have matured; this can have an impact on adolescents, based on the theory that says that the early years of menarche become a time that is prone to menstrual disorders. The age of menarche that occurs at the age of <12 years is the age of menarche, which is classified as early or fast, while the age of menarche at the age of 12-14 years is classified as normal. Internal factors cause adolescents to experience premature menstruation (premature) due to hormonal imbalance in congenital birth; this is also correlated with external factors such as nutritional intake in food consumed. From the results of the study (Anwar & Rosdiana, 2019) of 51 respondents with the age of menarche <12 years, there were 48 (94.1%) respondents who had dysmenorrhoea, this can happen because the earlier a person menstruates, the longer menstruation occurs, the more often the uterus. Contracting, as a result, more prostaglandins are produced. As a result of excessive prostaglandin production will cause severe pain when menstruation (Indah et al., 2019).

This is in line with research from (Gustina, 2015), which explained that there is no relationship between menarche age and dysmenorrhea pain shown from the calculation results of the Fisher's Exact

test with a 95% confidence level obtained a p-value of $0.049 = 0.05$, so that it can be concluded that there is no relationship between menarche age and primary dysmenorrhea pain in adolescent girls at SMK Negeri 4 Surakarta. This is due to differences in nutritional intake in adolescents varies. The types of food available in Makassar City and Surakarta City must also have differences that can affect adolescent health.

However, there are gaps with research from (Yeita B 2020) explained that the results of bivariate analysis of the total number of samples studied as many as 130 people obtained data that respondents who had menarche age ≥ 11 years experienced primary dysmenorrhoea as many as 114 people (87.69%) and did not experience primary dysmenorrhoea as many as 7 people (5.38%). While respondents who had a menarche age of < 11 years experienced primary dysmenorrhoea, as many as 17 people (5.38%), and those who did not experience primary dysmenorrhoea as many as 2 people (1.54%). In the results of statistical tests, it was found that the Odds Ratio (OR) value, which is 1.92 (CI: 0.37-10.00) students aged ≥ 11 years will be at risk of experiencing primary dysmenorrhea 1.9 times higher than students aged < 11 years (Yeita B, 2020).

This research is an analytical research using a cross-sectional design with a total sampling data collection method. Respondents were female Faculty of Medicine Class of 2019, 2020 and 2021 students who met the inclusion criteria. Data on the age of menarche and dysmenorrhea were obtained from filling out questionnaires and data on the degree of dysmenorrhea were obtained using the Numeric Rating Scale (NRS). The analysis used is chi-square. The results of the study found that of 164 female students who were included in the inclusion criteria, the majority experienced menarche at the age of 12-13 years, namely 70 people (42.7%) and as many as 140 people (85.4%) experienced primary dysmenorrhea. There is a relationship between the age of menarche and the incidence of primary dysmenorrhea in female students of the Faculty of Medicine class of 2019, 2020, and 2021, with a p-value of 0.04. It was concluded that there was a significant relationship between the age of menarche and the incidence of primary dysmenorrhea (Anugraha, 2022).

Based on the results of statistical tests using the chi-square test obtained The results were 145 respondents (78.4%) who did not have dysmenorrhoea, 153 respondents (82.7%) had a body mass index, and 152 respondents (82.2%) who had normal menarche age experienced desminore There was a significant relationship between body mass index and the incidence of dysmenorrhoea with p values of $0.000 < \alpha 0.05$. There was a significant relationship between menarche's age and dysmenorrhoea incidence with p values of $0.000 < 0.05$. This means that there is a meaningful relationship between the age of menarche and dysmenorrhoea, so the hypothesis that states there is a meaningful relationship between the age of menarche and dysmenorrhoea is statistically proven (Pera Mandasari, 2021).

The results of bivariate analysis between the same body index for dysmenorrhea pain can be found that respondents with a majority normal body mass index with a BMI of 18.5 - 25 are 23 female students with a moderate pain level category (4-6) with a low body weight with a BMI of < 18.5 as many as 18 students. Based on the results of data analysis with the Spearman rank test, a significance value of 0.024 was obtained. Based on this value, because the p-value of < 0.05 means that H_0 is rejected, H_a is accepted if the significance value is smaller ($<$) than 0.05. Then partially, it can be concluded that there is a "relationship between Body Mass Index and Dysmenorrhea Pain in students of SMP Muhammadiyah 2 Gamping Sleman Yogyakarta."

The results of the statistical test $p=0.005 < 0.05$ mean that there is a relationship between BMI and dysmenorrhea. In general, a person will feel menstrual pain caused by low levels of progesterone and estrogen hormones at the end of the luteum, then there is an increase in prostaglandin synthesis and vasoconstriction of the spiral arteries. Furthermore, it has an ischemic impact on the compacta's endometrium, and spongiosa results in necrosis. The stronger uterine muscle contractions then clamp the nerve endings, the stimulation flows through the sympathetic nerve fibers, and sympathetic and dysmenorrhea pain is felt (Surur et al., 2019).

This is also in line with research from Dhava, 2021 which used the chi-square test with 169 respondents by conducting interviews, but researchers did not write down the implementation stage. With the results obtained, the Department of Midwifery Poltekkes Kemenkes Kendari is mostly in the mild dysmenorrhea category, as much as (49.7%). The thin category (47.9%) with the results of the scores p-value calculated = 0.000, this value is smaller than 0.05 so that it can be concluded that there is a relationship between body mass index and the incidence of dysmenorrhoea in female students of the D-III Study Program, Department of Midwifery, Poltekkes, Ministry of Health, Kendari. This study is appropriate that women who have a Body Mass Index both thin and obese are one of the risk factors for dysmenorrhoea (Dhava, 2021).

The results of the analysis of the kai-squared test or chi-square test with a sample number of 104 and taken by random sampling by distributing questionnaires in the form of Google form to respondents with the results obtained p value = 0.000 (p less than 0.05) so that it can be concluded that there is a significant relationship between Body Mass Index and the degree of dysmenorrhea. In line with Harmoni's research, it was found that there was a relationship between BMI and the degree of dysmenorrhea with p = 0.000 and also research conducted by Gurdip Kaur from the Department of Obstetrics & Gynaecology, Govt. Medical College/Rajindra Hospital, India states that there is a relationship between Body Mass Index and the degree of dysmenorrhea (Harahap et al., 2021)

The results of this study are in accordance with the results of Justia's research (2018) which states there is a relationship between body mass index and the incidence of dysmenorrhea and the results of the study (Jusni et al., 2022) also use test spearman rank Shows there is a relationship between body mass index and the incidence of dysmenorrhoea (p = 0.001). The conclusion in this study showed that dysmenorrhoea was more commonly obtained in abnormal body mass index which was classified as underweight, overweight and obesity with 15 students (88.2%). In comparison, normal normal body mass index with dysmenorrhoea there were 11 students (35.5%). After testing Spearman rank, The value of p = 0.001 means that there is a relationship between body mass index and the incidence of dysmenorrhoea.

However, there is a gap related to the Body Mass Index with dysmenorrhea pain based on the results of research by Astuti (2017), which concluded that the analysis test obtained a value (p-value) of 0.080 ($\alpha > 0.05$) p-value of > 0.05 meaning there is no relationship between BMI and dysmenorrhea. The results of this study provide recommendations for adolescents who have normal BMI to continue to experience dysmenorrhea. In some literature, risk factors that are often associated with dysmenorrhea are early age menarche, family history of dysmenorrhea, the habit of eating fast food, duration of bleeding during menstruation, exposure to cigarette smoke, coffee consumption, alexithymia, hormones, psychological (stress), lack of activity and exercise, and imbalance of nutritional intake. Advice for adolescent girls to carry out a healthy lifestyle, such as eating a balanced diet, doing enough activity, and avoiding other health habits that can cause dysmenorrhea.

Adolescents who have high fat levels in the body will affect the production of the hormone estrogen because apart from the ovaries, estrogen will also be produced by adipose tissue, so estrogen becomes abnormal and tends to be high. This unbalanced hormone production can cause dysmenorrhoea (Karina & Candra, 2017).

4. Conclusion

Based on the data from the research that has been done, it can be concluded that there is no relationship between the age of menarche and the incidence of dysmenorrhea. However, there is a relationship between the body mass index and the incidence of dysmenorrhea. As the compiler conducting this thesis research, I would like to thank the parties involved and their support, and to all respondents who participated in this research, I was able to complete this thesis well.

It is recommended for students, after getting information about reproductive health from school lessons apply according to the information that has been obtained and make themselves try to improve their knowledge so as to reduce the occurrence of menstrual pain (dysmenorrhea) for example, by sleeping 8 hours a day and routinely exercising 1 to 2 times a week besides that they can carry out a healthy lifestyle such as consuming a balanced diet, Exercise moderately and avoid other health habits that can cause dysmenorrhea.

Suggestions for future researchers to be able to conduct research related to the relationship between BMI and dysmenorrhea and menarche age in depth.

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