Correlation of Body Mass Index with Regular Menstrual Cycle of Young Women

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ABSTRACT: This study aims to analyze the correlation of body mass index with the regularity of the menstrual cycle of young women in The City of Parepare. A total of 60 young women age 17 to 19 years participated in this study. The body mass index and regularity of the subject's menstrual cycle were evaluated. In body mass index distribution, young women with normal nutritional status were more likely (48.3%), compared with thin nutritional status (33.3%) and nutritional status (18.3%). Regular menstrual cycle more normal young women (56.7%) compared to abnormal (43.3%). The results of this study indicate that there is a relationship between body mass and regularity of the menstrual cycle in young women.

Keywords: Asherman's syndrome, Infertiliy, Hystersocopic adhesiolysis, Placenta accreta

1.   INTRODUCTION

Menstruation is a complex process involving several hormones, reproductive organs and nervous system. Hormones affect menstruation, if hormones are out of balance, the cycle will be disrupted[1]. Abnormalities of the menstrual cycle is a common occurrence during puberty and is a common complaint experienced by young women who come in pediatric clinics[2]. Menstrual cycles are defined as short cycles if <25 days, normal 26 to 34 days, or long> 35 days. Menstrual cycle distance is different in each woman, generally ranging from 15 to 45 days, an average of 28 days and the duration ranges from 2 to 8 days, an average of 4 to 6 days with blood issued in the range of 60 to 80 ml per cycle[3].

The first menstrual cycle (menarche) usually occurs in young women ages 12 to 15 years and ended at the age of 50 years, which is when menopause[3]. Early menarche age is known to have an impact on health disorders. Young women who experience early menarche tend to be fatter in adulthood[4].

Nutritional status has the potential to cause disruption to the reproductive health of young women. Reproductive performance is influenced by food and type of nutrition. Weight variations in terms of being overweight, obese or underweight related to changes in energy balance are also thought to result in ovulation disorders[5]. Continued obesity in adulthood will cause earlier sexual maturity and irregular menstrual cycle[6]. Regularity of the menstrual cycle is an indicator of women's reproductive health.

Menstrual cycle in adolescent girls can occur because it has not worked optimally between the hypothalamus-pituitary-ovary in the first 2 years after menarche. Cycle frequency can vary from less than 20 days to more than 90 days[7]. Previous studies have suggested that stress and smoking are factors associated with irregular menstruation[8]. The smallest changes in female   hormone   levels can cause changes in the menstrual cycle[9]. However, the effect of body mass index is not yet fully understood. This study aims to investigate the body mass index with regular menstrual

cycles in young women in the City of Parepare.

2. METHOD

Young woman

The research sample used was young women who were students of the Faculty of Health Sciences. They were chosen because they have learned about reproductive health and nutrition. Young women who can participate in this study are ≤19 years old.

Subjects

Some methods are used for sampling conducted in the City of Parepare, namely: in the first place on campus they go to college, by waiting for them to finish the activity. the second place in the boarding house and the house where they live. Both of these locations are where they are often located.

Analytic Survey

This research is an analytic survey with cross sectional study design. subjects were taken randomly by simple random sampling. The study lasted for 1 month. At the beginning of the research respondents were given a questionnaire to find out personal information and regular menstrual cycles. Body mass index data obtained from the calculation of height and weight. The height data can be seen by the microtoise device, whereas the weight data on the stamped weighing device, this information is known when the respondent conducts an examination.

Body Mass Index Analysis

Before being analyzed, the respondent's body mass must be known, that is, height and weight information. Measurement methods of body mass index namely body weight (kg) divided by height (m^2), with categories of underweight (<18.5 kg/m^2), normal (18.5 to <23 kg/m^2), overweight (23 to < 25 kg/m^2) and obesity (≥ 25 kg/m^2)[10]. Then the respondent's personal data, body mass index data and menstrual regularity data are entered into the SPSS program, analyzed using the chi square test with α significance level a = 0.05.

3. RESULT

The data shows that more age characteristics are 19 years old than 18 years old. Most of the respondent's body mass index has a normal size and most have regular menstrual cycles (Table 1).

Table 1: Characteristics of Respondents

Characteristics	n	%
Age (Years)		
18	20	33.3
19	40	66.7
Body mass index(Kg/m^2)		
Underweight (<18.5)	20	33.3
Normal (18.5 to <23)	29	48.3
Overweight (23 to < 25)	11	18.3

Menstrual cycle		
Regular	34	56.7
Irregular	26	43.3

There are more regular menstrual cycle respondents who have a normal body mass index, compared to regular menstrual cycles with underweight and overweight. There is a statistically significant correlation between body mass index with the menstrual cycle regularity(P <0.05) (Table 2).

Table 2: Correlation of body mass index with regular menstrual cycles

Menstrual cycle	n (%)	Body mass index		
	Underweight (n=60)	Normal (n=60)	Overweight (n=60)	P-value
Regular	9 (15)	23 (38.3)	2 (3.3)	0.001
Irregular	11 (18.3)	6 (10)	9 (15)	

4. DISCUSSION

This study revealed that young women aged 18-19 years in The City of Parepare, at the time of the survey were 33.3% underweight and 18.3% overweight.This result is supported by 2018 Riskesdas data which reports that teenagers aged 16-18 years, as much as 8.1% with thin and very thin conditions. While the prevalence of overweight and obesity by 13.5%[11].Obesity is influenced by genetic, nutritional, psychological and hormonal factors[12].Poor appetite, slow eating, mother and family education that has no conversation status causes weight loss in young women[14,3].

The results showed that 43.3% of respondents experienced irregular menstrual cycles. This study is in line with research on 470 girls in Garhwal, India, stating that 28.72% experienced irregular menstrual cycles. Menstrual irregularity occurs due to not having a healthy diet (79.20%)[15]. Food habits are closely related to quality of life in women of reproductive age. Speculated food habits not only affect current lifestyle but also to cause gynecological disorders such as dysmenorrhea and irregular menstruation[16].

Correlation test results indicate that there is a significant relationship between body mass index with the menstrual cycle. Respondents who have good nutrition will have a normal menstrual cycle for normal function of the hypothalamus hormones in producing reproductive hormones that regulate menstrual cycles.But other research shows that there is no relationship between body mass index and menstrual regularity[17].

The menstrual cycle is calculated from the first day of menstruation until the beginning of the next menstrual period. Irregular menstrual cycles indicate that there is metabolism and hormonal disorders that will have an impact on fertility. In contrast to normal menstrual cycles, short menstrual cycles cause eggs that are not too ripe, while
long menstrual cycles make it difficult to determine the date of the fertile period[18]. Another study reported that menstrual cycle disorders, related to reduction in body fat and weight loss[19].

5. CONCLUSION

The results of this study indicate that there is a relationship between body mass index and regularity of the menstrual cycle.

6. REFERENCES

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