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Risk of Polycystic Ovary Syndrome in Young Women

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Abstract

About 50-60% of Polycystic Ovary Syndrome (PCOS) sufferers are obese women. Obesity is caused by a lifestyle that leads to *a sedentary lifestyle*.

Purpose: This study aimed to describe the relationship between *a sedentary lifestyle* and body mass index with the risk of polycystic ovary syndrome in female adolescents at 105 High School of Jakarta.

Methods: This study used an observational analysis research design with a *cross-sectional approach*. The sample in this study amounted to 103 people and data analysis using logistic regression.

Results: The results of the analysis showed that the test for the relationship between *a sedentary lifestyle* and the risk of polycystic ovary syndrome obtained a value of p=0.002 and the test for the relationship between body mass index and the risk of polycystic ovary syndrome obtained a value of p=0.013.

Conclusion: Based on the results of the analysis in this study, it can be concluded that there is a significant relationship between *a sedentary lifestyle* and body mass index, and the risk of polycystic ovary syndrome.

Keywords: a sedentary life style; adolescent; Polycystic

Introduction

World Health Organization (WHO) data shows that around 116 million women or around 3.4% of women in the world experience polycystic ovary syndrome (PICOS). In general, factors that contribute to the risk of polycystic ovary syndrome include a sedentary lifestyle, consuming ready-to-eat food, addiction to social media, and the use of complex gadgets for daily tasks are very common among the public. higher socio-economic status (D'Souza *et al.*, 2022).

The current lifestyle is experiencing many changes, namely the traditional lifestyle which has switched to a *sedentary lifestyle* (Rahma and Wirjatmadi, 2020). *A sedentary lifestyle* is generally accompanied by excessive eating patterns, such as consuming carbohydrates, fats, high protein, and low fiber, causing overweight or obesity (Emilia *et al.*, 2019). According to the results of the 2013 Basic Health Research, the proportion of adolescents who lack physical activity in DKI Jakarta reaches 44.2% (Riskesdas, 2013), while according to the results of the 2018 Basic Health Research the percentage of adolescents who are inactive reaches almost 25%. The proportion of adolescents who lack physical activity in DKI Jakarta Province reaches 47.81% and especially in East Jakarta reaches 46.17% (Riskesdas, 2018), there is an increase in the proportion of adolescents who lack physical activity by 3.61% among adolescents in Jakarta. The most prominent effect of *a sedentary lifestyle* is a change in body mass index that leads to obesity (Paroi, Hasanat, and Roi, 2022).

In recent years, the clinical value of body mass index has been the subject of considerable attention in the literature. Polycystic ovary syndrome can be found in women of childbearing age with various types of weight based on body mass index (BMI), including thin, normal, overweight, and obese women. However, around 50-60% of PCOS sufferers are obese women (Jupri *et al.*, 2019). The prevalence of central obesity in the age group (15-24 years) reaches 17.85% (Riskesdas, 2018) in DKI Jakarta. Research conducted by Putri, Santoso, and Budiono, (2022) at High school 5 in Surabaya showed that 75% of students were overweight and 60% of obese students had a risk of PCOS. Obese people often experience ovulation disorders, so the high incidence of obesity is associated with a high incidence of PCOS risk which causes infertility due to ovulation disorders. Regarding the background described, researchers are encouraged to further investigate the relationship between a sedentary *lifestyle* and body mass index with the risk of polycystic ovary syndrome in female adolescents.

METHODE

The research used cross sectional design, sample consisted of 103 respondents and was drawn using a purposive sampling technique. The risk of polycystic ovarian syndrome is the dependent variable, while the independent factors are sedentary lifestyle and body mass index.

The validity and reliability of 32 young female respondents in DKI Jakarta who met the inclusion and exclusion criteria were examined using a standardized questionnaire. There are various questionnaires, including those for demographic data (age, family health, and BMI), sedentary lifestyle, Ferimman Gallwey score, and menstrual cycle.

This research has passed an ethical review from the ethics commission of the Poltekkes Kemenkes Jakarta III

RESULTS AND DISCUSSION

Resutls

Table 1Characteristics of Respondents Based on Age and Family Health History in Young Girls

No	Characteristics	Frequency (n)	Percentage (%)
1	Age		
	15 years	10	9,7
	16 years	41	39,8
	17 years	32	31,1
	18 years	20	19,4
2	Family Health History		
	There is no history of diabetes mellitus	86	83.5
	There is a history of diabetes mellitus	17	16.5

Table 1, show : Most of the respondents were aged 16 (39,8%), there is no history diabetes mellitus (83,5%)

Tab*le.* 2 Frequency Distribution of Respondents Based on Body Mass Index, Sedentary Lifestyle and Risk of Polycystic Ovary Syndrome

No	Variable	Frekuensi (n)	Presentase (%)
1	*Sedentary Lifestyle*		
	Low	21	20,4
	Midle	43	41,7
	High	39	37,9
2	Body mass Index		
	Thin	6	15,5
	Normal	40	38,8
	Obesity	47	45,6
3	*Ferimman Gallwey Score*		
	Not hirsustisme	44	42,7
	Hirsustisme	59	57,3
4	Menstrual Cycle		
	No menstrual cycle disturbance	35	34
	menstrual cycle disturbance	68	66
5	Risk of Polycystic Ovary Syndrome	49	47,6
	No Risk of Polycystic Ovary Syndrome	54	52,4

Table 2 : Most of the respondents are midle sedentary lifestyle, obesity(45,6%), Hirsustisme (53,6%), menstrual cycle disturbance (66%), No Risk of Polycystic Ovary Syndrome (52,4%)

Table 3. Relationship between Sedentary Lifestyle and Body Mass Index with the Risk of Polycystic Ovary Syndrome

Variable			Risk of Ovarian Symdrome					
Sedentary Lifestyle	**Not Risk**		**Risk**		**Total**		***P Value***	**OR**
	n	**%**	**N**	**%**	**n**	**%**		
Low	15	71,4%	6	28,6%	21	100%		
Midle	29	67,4%	14	32,6%	43	100%	0,001	3,171
High	5	12,8%	34	87,2%	39	100%		
Body mass index								
Thin	11	68,8%	5	31,2%	16	100%		
Normal	29	72,5%	11	27,5%	40	100%	0,001	2,460
Obesity	9	19,1%	38	80,9%	47	100%		

Table 3, show that :There is a relationship between a sedentary lifestyle and the risk of polycystic syndrome pvalue 0.001. There is a relationship between body mass index and the risk of polycystic syndrome, pvalue 0,001

Discussion

The study's findings that up to 83.5% of young women have no family history of diabetes mellitus. This could be attributable to adolescents' ignorance of family health history and the presence of other risk factors for polycystic ovarian syndrome (PICOS). The findings of this study are consistent with the findings of Ariansyah (2019), who discovered that 68% of teenagers do not have a family history of diabetes. Other studies' findings are consistent with this study's, such as Putri's research (2020), which shows that there are more women with no family history of diabetes, with a frequency of 100% in the case group and 96.2% in the control group.

Young women with a somewhat sedentary lifestyle (41.7%), an obese body mass index (45.6%), hirsustism (57.3%), menstrual cycle problems (66%), and polycystic ovarian syndrome (52.4%) are at risk. The study results in table 2 show that 43 people (41.7%) teenagers have a moderate level of sedentary lifestyle. This is due to lifestyle changes in adolescents in the era of the industrial revolution 4.0, which was marked by extraordinary technological developments, so that teenagers who At first, frequent physical activity at school decreased.

This assertion is corroborated by research conducted by Amrynia and Prameswari, (2022), which claims that there is an increase in teenagers with sedentary lifestyles and a lack of physical activity.

Other research findings by Mandriyarini, Sulchan, and Nissa (2017) state that modern life in the residential environment, technological advances, and various forms of convenience (instant) produce a relaxed lifestyle, and that energy that was previously required for physical activity is no longer required and will be stored. as fat deposits and eventually contribute to obesity.

According to Amrynia and Prameswari's (2022) research, sedentary activities that last too long might generate an energy imbalance since the energy input in the body is greater than the energy output, which has an impact on the prevalence of obesity in teenagers. Obesity risk increases in adolescents with a family history of obesity, which is linked to genetic factors, lifestyle, and poor food intake (Esmaeilzadeh).

The findings of the study that as many as 54 people (52.4%) young women are at risk of polycystic ovary syndrome. This is because most young women have two diagnostic criteria for PCOS, hirsustism (57.3%) and menstrual cycle disorders (66%). According to Rozati et al., (2022), the combination of sex hormone binding globulin (SHBG), clinical hyperandrogenism, and monthly abnormalities can be used as a diagnostic marker for PCOS in teenagers and to identify those at elevated risk of developing PCOS. The findings of this study contradict those of Irene (2019), who found that the majority of teenagers were not at risk of polycystic ovarian syndrome.

CONCLUSION

Most young women have a high *sedentary lifestyle* and a body mass index that is obese, the majority of young women are at risk of polycystic ovary syndrome. Adolescent girls who have a high risk of polycystic ovary syndrome with *sedentary lifestyle* is 87.2%. The results showed that there was a relationship between *sedentary lifestyle* and the risk of polycystic ovary syndrome (p=0.002). Adolescent girls who have a risk of polycystic ovary syndrome with an obese body mass index of 80.9%. The results showed that there was a relationship between body mass index and the risk of polycystic ovary syndrome (p=0.013).

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