

CORRELATION OF ACADEMIC STRESS WITH OLIGOMENORRHEA IN FEMALE MEDICAL STUDENTS

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ABSTRACT

Introduction: Oligomenorrhea is defined as an irregular menstrual cycle of more than 35 days or only experiencing 4 to 9 menstrual cycles in a year. According to research involving 12,964 women of childbearing age in China, it was found that 1,579 women (12.2%) experienced oligomenorrhea. Risk factors for oligomenorrhea are poor nutritional status, namely BMI < 18.5 or ≥ 25 , excessive physical activity, high levels of stress (around 20%), and late age at menarche. Various studies have found a relationship between stress and abnormal menstrual cycles.

Objective: To determine the relationship between academic stress and oligomenorrhea in female students at the Faculty of Medicine, Widya Mandala Catholic University, Surabaya, Class of 2019.

Method: Analytical observational research with a cross-sectional approach. The population for this research is all 7th-semester female students at the Faculty of Medicine, Widya Mandala Catholic University, Surabaya, class of 2019, with a total sample of 32 female students taken using simple random sampling. The independent variable is academic stress while the dependent variable is oligomenorrhea. The research instrument used a questionnaire. Data analysis used the Spearman Rank correlation test.

Result: A total of 20 respondents (62.5%) experienced moderate levels of academic stress, 3 respondents (9.4%) experienced low levels of academic stress, and 9 respondents (28.1%) experienced high levels of academic stress. For the menstrual cycle from August to October 2022, 23 female students (71.9%) experienced normal menstrual cycles, and 9 female students (28.1%) experienced oligomenorrhea. The results of the Spearman Rank correlation test obtained a significance value of 0.023.

Conclusion: There is a relationship between academic stress and oligomenorrhea in students at the Faculty of Medicine, Widya Mandala Catholic University, Surabaya, Class of 2019.

Keywords: Academic stress, Oligomenorrhea, Final Year Students, Medical Students

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INTRODUCTION

There are many academic requirements that students must fulfil in pursuing their education, especially final-semester students who are pursuing a bachelor's degree. This can cause academic stress in students. Academic stress arises when parents, teachers, and peers have high expectations of student academic achievement. These expectations often do not match students' abilities, which leads to psychological pressure that affects their learning success at school.¹

Menstruation is bleeding from the uterus that women experience periodically and cyclically. This is caused by the shedding of the endometrium due to a decrease in the amount of the hormones oestrogen and progesterone.³ The average normal menstrual cycle is 28 ± 7 days.⁴ Oligomenorrhea is defined as irregular and inconsistent menstrual blood flow in a woman, namely a menstrual cycle of more than 35 days or only experiencing 4 to 9 menstrual cycles in a year. This disorder usually occurs due to hormonal disorders, nutritional disorders, and mental disorders such as stress.⁵ Risk factors for oligomenorrhea are poor nutritional status, namely $BMI < 18.5$ or ≥ 25 , excessive physical activity, high levels of stress (around 20%), and late age at menarche.⁹

METHOD

This research is a quantitative study with an analytical observation approach using a cross-sectional design. The research was conducted by giving questionnaires to respondents to determine their level of academic stress and also their menstrual cycle from August to October 2022.

The independent variable in this research is academic stress. Academic stress will be measured using a scale adapted from the Perception of Academic Stress Scale (PAS), the results of which are categorized into low levels of academic stress with a total score < 46 , moderate levels of academic stress with a total score of 46-58, high levels of academic stress with a total score > 58 . Meanwhile, the dependent variable in this study is oligomenorrhea. Female students' menstrual cycles are measured using a menstrual calendar from August to October 2022. Respondents' menstrual cycles will be divided into polymenorrhagia if the menstrual cycle is < 21 days, is irregular, and can be accompanied by abnormal menstrual periods. A normal menstrual cycle is if the menstrual cycle is regular 21-34 days with a normal menstrual range. Oligomenorrhea if the menstrual cycle is ≥ 35 days, is irregular, and can be accompanied by abnormal menstrual periods.

The sample in this study was 7th-semester female students at the Faculty of Medicine, Widya Mandala Catholic University, Surabaya, class of 2019, who were working on their final assignment, namely a thesis, had experienced menstruation and were willing to be respondents without coercion. This research was conducted at the Faculty of Medicine, Widya Mandala Catholic University, Surabaya, located on Jalan Raya Kalisari Selatan 1, Pakuwon City, Surabaya. The data obtained will be analysed using the Spearman Rank correlation test in the Statistical Product and Service Solution (SPSS) version 26.0 application.

RESULT

Based on the research conducted, the following data was obtained:

Table 1. Distribution of respondents by age

Age	Frequency	Percentage (%)
20 y/o	2	6.2%
21 y/o	27	84.5%
22 y/o	2	6.2%
23 y/o	1	3.1%
Total	32	100%

According to Table 1, most of the respondents are 21 years old.

Table 2. Distribution of respondents based on BMI/Body Mass Index (in kg/m²)

BMI (in kg/m ²)	Frequency	Percentage (%)
18.5-19.5	4	12.4%
19.6-20.5	7	21.9%
20.6-21.5	7	21.9%
21.6-22.5	2	6.2%
22.6-23.5	2	6.2%
23.6-24.9	10	31.3%
Total	32	100%

According to Table 5.2, most respondents' BMI is 23.6-24.9 kg/m².

Table 3. Distribution of respondents based on age at Menarche.

Menarche Age	Frequency	Percentage (%)
10 y/o	1	3.1%
11 y/o	4	12.5%
12 y/o	8	25%
13 y/o	10	31.3%
14 y/o	7	21.9%
15 y/o	1	3.1%
16 y/o	1	3.1%
Total	32	100%

Table 5.3 shows that most respondents experienced menarche at the age of 13 years.

Table 4. Distribution of respondents based on menstrual cycle.

Menstrual Cycle	Frequency	Percentage (%)
Polymenorrhoea	0	0%
Normal	23	71.9%
Oligomenorrhoea	9	28.1%
Total	32	100%

Table 5.4 shows that the majority of respondents have normal menstrual cycles. No respondents experienced polymenorrhoea.

Table 5. Distribution of respondents based on level of academic stress.

Academic Stress Levels	Frequency	Percentage (%)
Mild	3	9.4%
Moderate	20	62.5%
Severe	9	28.1%
Total	32	100%

Table 5 shows that the majority of respondents experienced moderate levels of academic stress.

Table 5.6 Cross-tabulation of the relationship between academic stress and the menstrual cycle of female students at the Faculty of Medicine, Widya Mandala Catholic University, Surabaya Class of 2019.

Academic Stress Severity	Polymenorrhea	Normal Menstrual Cycle	Oligomenorrhea
Mild	-	3 (9.4%)	-
Moderate	-	16 (50%)	4 (12.5%)
Severe	-	4 (12.5%)	5 (15.6%)

From the Spearman Rank correlation test, a significance value of 0.023 ($p < 0.05$) was obtained, which means it is correlated. A correlation coefficient value of 0.400 was also obtained, which means a fairly strong relationship between academic stress and oligomenorrhea.

DISCUSSION

From the results of the Perception of Academic Stress Scale (PAS) questionnaire which was used to measure respondents' academic stress levels, of the 32 respondents it was found that the majority of respondents experienced moderate levels of academic stress, namely 20 respondents (62.5%). As many as 3 respondents (9.4%) experienced low levels of academic stress, and as many as 9 respondents (28.1%) experienced high levels of academic stress.

This is in accordance with research titled "Stress Levels of final students in Working on their thesis at Sanata Dharma University." According to Defty Triyaningsih, the majority of final-year

student stress at Sanata Dharma University is in the medium category (62.5%).² This is also in accordance with Ahmad Riza Affani's research with 31 (11.52%) students experiencing mild academic stress, 208 (77.32%) students experiencing moderate academic stress, and 30 (11.15%) students experiencing academic stress in the category of severe.¹⁵

Based on Table 5.5, the majority (71.9%) of female students experienced normal menstrual cycles, and as many as 9 female students (28.1%) experienced oligomenorrhea. This is in accordance with Ainun Amaliah Suhri's research with the number of respondents who experienced a normal menstrual cycle as much as 47.9% and who experienced oligomenorrhea as much as 19.9%.¹⁷ This is also in accordance with research by Deltha Elisabeth Simbolon which examined "Correlation between Stress Levels and Menstrual Cycles in Final Year Students at STIKes Santa Elisabet Medan in 2020" obtained from 122 female students (83.6%) with normal menstrual cycles and 24 female students (16.4%) with normal menstrual cycles. abnormal menstruation.¹⁸

The research results in Table 5.7 show that 5 (15.6%) of the 9 respondents (28.1%) who experienced oligomenorrhea had a high level of academic stress, while the other 4 (12.5%) had a moderate level of academic stress. A total of 4 respondents

(12.5%) experienced normal menstrual cycles with high levels of academic stress. This shows that oligomenorrhea can be influenced by high levels of academic stress. Stress will cause cortisol levels to increase so that GnRH levels decrease. This will affect the amount of oestrogen and progesterone hormones in the body which then disrupts the menstrual cycle.¹⁰ The results of this research are by Deltha Elisabeth Simbolon's research which stated that there was a significant relationship between stress levels and the menstrual cycle in final-year students at STIKES Santa Elisabeth Medan.¹⁸

From Table 5.7, it was also found that 3 respondents (9.4%) had mild levels of academic stress and normal menstrual cycles, apart from that, it was also found that half of the respondents had moderate levels of academic stress and normal menstrual cycles. This is according to the theory by Deltha Elisabeth Simbolon, that respondents who can control stress will not cause pathological changes to occur and cause disease.¹⁸

CONCLUSION

Based on the research results, it can be concluded that there is a relationship between academic stress and oligomenorrhea in students at the Faculty of Medicine, Widya Mandala Catholic University, Surabaya Class of 2019 with a significance value of 0.023 ($p < 0.05$).

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