

## Article

# Relationship of Dysmenorrhea and Physical Activity with Anxiety

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## ABSTRACT

This study aims to determine the relationship between dysmenorrhea and physical activity with anxiety. The method used in this study is a cross sectional study. A sample of 46 biology education students class of 2021 FKIP UMRAH used a total sampling technique. The Wong Boker Pain Face was used to measure dysmenorrhea pain, the IPAQ (International Physical Activity Questionnaire) questionnaire measured physical activity and the BAI (Beck Anxiety Inventory) questionnaire measured anxiety. Data analysis using Chi Square. The results of data analysis of dysmenorrhea with anxiety showed a p value of 0.01 ( $p < 0.01$ ) and the results of data analysis of physical activity with anxiety showed a p value of 0.06 ( $p > 0.06$ ). Thus it can be concluded that there is a significant relationship between dysmenorrhea and student anxiety and there is no significant relationship between physical activity and anxiety.

## I. INTRODUCTION

Dysmenorrhea is a common menstrual complaint that has a major impact on women's quality of life and work productivity (Ju, Jones, & Mishra, 2014), (Ferries-rowe, Corey, & Archer, 2020). The menarche period in Indonesia reaches 60-70% who experience dysmenorrhea and causes women to be unable to carry out activities. (Husaidah, Ridmadhanti, & Radulima, 2021). In addition, a high rate of dysmenorrhea (72.7%) was reported among female students in Turkey (Unsal, Ayranci, Tozun, Arslan, & Calik, 2010). Dysmenorrhea is very common among college students which has an impact on limitations in physical activity and related activities (Kamel, Tantawy, & Abdelsamea, 2017). Dysmenorrhea is related to absenteeism from lectures, social limitations, academics, sports and daily activities (Tiwari, 2015). The high incidence of dysmenorrhea has received less attention from society and even among the youth themselves. One of the factors that

influence the occurrence of dysmenorrhea is physical activity (Dwi, Fatimah, & Rohmah, 2020). Not doing physical activity is a major public health problem and it is a causal factor for several diseases (Blair, Lamonte, & Nichaman, 2004). The results show that only a few studies have investigated the relationship between dysmenorrhea and most psychological disorders. Several studies have investigated the relationship between dysmenorrhea and depression, anxiety, stress, alcohol abuse, and somatic disorders. So, further research is needed to investigate the relationship between most psychological disorders and dysmenorrhea (Bajalan, Moafi, & Moradibaglooei, 2018). Therefore, this study aims to determine the relationship between dysmenorrhea and physical activity with student anxiety.

## II. METHODS

This study used a descriptive research design with a *cross sectional study approach*. The sample in this study was a total population of 46 biology education students class of 2021 FKIP UMRAH using a *total sampling technique*. The instrument used in this study was a standardized questionnaire, to determine dysmenorrhea pain was measured using the Wong Baker Face Pain Rating Scale (WBS). The WBS consists of six different facial expressions, ranging from a very smiling face to a very sad face, which describes no pain, mild pain, moderate pain, severe pain and very severe pain (Garra, Singer, Domingo, & Thode, 2013). Measurement of physical activity level using the IPAQ (International Physical Activity Questionnaire). The purpose of the questionnaire is to provide a general instrument that can be used to obtain data on health-related physical activity. The IPAQ consists of 4 general questionnaires, namely regarding: strenuous physical activity, moderate physical activity, walking time and sitting time. For analysis of physical activity data it is calculated from the number of days and hours carried out for 7 days, then expressed in *MET-minutes/ week* *MET* or *Metabolic* to express the intensity of physical activity in low, medium and high categories (The IPAQ Group, 2002). In addition, The IPAQ Group provides convenience for researchers to analyze data through excel tables that have been provided on the web. Measurement of anxiety using the BAI (Beck Anxiety Inventory) consists of 21 statements in the questionnaire, the total score is calculated by finding the sum of the 21 statement items answered by the respondent, with a scale of 0 = never, 1 = almost never, 2 = sometimes, 3 = often. Total score 0-21 = low anxiety, score 22-35 = moderate anxiety, score 36 and above = high anxiety (Beck, Epstein, Brown, & Steer, 1988). Data analysis in this study used the chi-square test to determine the relationship between variables.

## III. RESULT

**Table 1. Frequency Distribution of Dysmenorrhea Respondents**

<b>Dismenore</b>	<b>Frequency (f)</b>	<b>Percentage (%)</b>
Mild	17	37%
Moderat	20	43%
Severe	9	20%
Total	46	100%

The table shows that 37% of female students experience mild dysmenorrhea, 43% moderate dysmenorrhea and 20% moderate dysmenorrhea, thus it can be seen that severe dysmenorrhea shows the most dominant results.

**Table 2. Frequency Distribution of Physical Activity Respondents**

Physical Activity	Frequency (f)	Percentage (%)
Mild	23	50%
Moderate	23	50%
Total	46	100
Physical Activity	Frequency (f)	Percentage (%)

The table shows that the physical activity carried out by female students is 50% mild physical activity and 50% moderate physical activity.

**Table 3. Frequency Distribution of Anxiety Respondents**

Kecemasan	Frequency (f)	Percentage (%)
Mild	30	65%
Moderate	16	35%
Total	46	100%
Kecemasan	Frequency (f)	Percentage (%)

The table shows that 37% of female students experience mild anxiety and 35% of female students experience moderate anxiety, thus it can be seen that female students with moderate anxiety show the most dominant results.

**Tabel 4. Results of the Chi Square Test of Physical Activity with Anxiety**

		Kecemasan			P value
		Rendah	Sedang	Total	
Dismenore	Ringan	13	4	17	0,01
	Sedang	15	5	20	
	Berat	2	7	9	
Total		30	16	46	

The table above is the result of an analysis of the relationship between dysmenorrhea and anxiety. The results of the chi square test showed a significant p value of 0.01. If  $p < 0.05$  (p value less than 0.05) then based on statistical tests it shows that there is a relationship between dysmenorrhea and student anxiety.

**Table 5. Results of the Chi Square Test of Physical Activity with Anxiety**

		Kecemasan			P value
		Rendah	Sedang	Total	
Aktivitas Fisik	Ringan	18	5	23	0,06
	Sedang	12	11	23	
Total		30	16	46	

The table above is the result of an analysis of the relationship between physical activity and anxiety. The results of the chi square test showed a significant p value of 0.06. If  $p > 0.05$  (p value greater than 0.05) then based on statistical tests shows that there is no relationship between physical activity and student anxiety.

#### IV. DISCUSSION

The results of the dysmenorrhea frequency distribution table show that 37% of female students experience mild dysmenorrhea, 43% experience moderate dysmenorrhea, and 20% experience severe dysmenorrhea, thus it can be seen that moderate dysmenorrhea is more dominant in female students, this is in line with previous studies that some adolescents daughters experienced dysmenorrhea with moderate pain category, namely 23 people (48.9%), a small portion were categorized as mild pain, 14 people (29.8%), and severe pain, 10 people (21.3%), (Hayati & Hasanah, 2018). Based on the results of data analysis using chi square, this study shows that there is a significant relationship between dysmenorrhea and student anxiety based on the p value of 0.01. This is as stated by Putri, Yunus, & Fanani (2017) dysmenorrhea can cause anxiety in the form of sadness, nervousness, insomnia, irritability and impaired concentration which have an impact on the quality of life of young women. According to the research results of Amri, Tarigan, Saodah, & Nurhasanah (2022) it is stated that there is a relationship between the level of anxiety and the incidence of dysmenorrhea in students. The results of the frequency distribution showed that 30% of female students had low physical activity and 50% of female students had moderate physical activity and the level of anxiety showed that 65% of female students experienced low anxiety and 35% of female students experienced moderate anxiety. Based on the results of the chi square test showed that there was no statistically significant relationship between physical activity and anxiety with a p value of 0.06. This is similar to research conducted by Oktaviana, Bayu, & Yusfi (2022) that physical activity has no relationship with anxiety levels in students. Moderate-intensity physical activity for 30 minutes each day has major health benefits for sedentary adults (Blair et al., 2004). In everyday life physical activity can be carried out such as in free time, gardening, doing household chores, moving from one place to another and working physical activity (Booth, 2015).

## V. CONCLUSION

The results of the study concluded that there was a significant relationship between dysmenorrhea and student anxiety ( $p < 0.01$ ) and there was no significant relationship between physical activity and anxiety ( $p > 0.06$ ). Further research is recommended to study further about dysmenorrhea pain on physical activities carried out by female students during menstruation.

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