

Article

# Cross-Sectional Study: Very Satisfactory Predicate of grade-point average (GPA) of UMY Medical Students is Not Affected by Non-Academic Activities but is Affected by Anxiety

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**Abstract:** Students tend to participate in non-academic activities during their free time to develop their interests and talents, including medical students. However, the medical study program is known for its demanding academic and emotional challenges. Active involvement in non-academic activities may add to these demands, potentially triggering anxiety and affecting academic performance. This study aims to determine the influence of non-academic activities on the level of anxiety and academic performance of medical students at the Faculty of Medicine, Universitas Muhammadiyah Yogyakarta. This observational study employed a cross-sectional approach involving medical students year from the 2021 and 2022. Data were collected using a questionnaire on non-academic activities, cumulative GPA, and the Zung Self-Rating Anxiety Scale (ZSAS). Data were analyzed using the Spearman correlation test. The results showed that 86.3% of the 204 respondents had low levels of non-academic activity, 10.8% experienced mild to moderate anxiety, and 43.6% had a cumulative GPA categorized as very satisfactory. Spearman correlation test showed no significant influence ( $p>0.05$ ) of non-academic activity levels on anxiety and cumulative GPA. However, there was a significant relationship between anxiety and GPA ( $P=0,017$ ;  $r=-0,167$ ), with higher anxiety associated with lower GPA. These findings highlight the importance of managing anxiety to support students' academic achievement.

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## 1. Introduction

Students play a crucial role as agents of change in society, where they are expected to develop both as individuals and social beings (Arifin, 2017). One of the ways students choose to develop themselves is by participating in non-academic activities during their free time. According to the Indonesian Dictionary (KBBI), "activity" refers to engagement, action, work, or any work activity carried out within each section of an institution or company (KBBI, 2016).

Non-academic activities encompass those that are not directly related to the learning process at the university, such as student organizations, religious activities, arts, sports, and employment (Nugraha, 2018). These activities can help students



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develop communication, teamwork, and creativity skills, as well as assist them in discovering their potential (Santoso, 2019).

Currently, many students, including medical students, are increasingly interested in engaging in various non-academic activities that offer opportunities to develop their interests, talents, and potential (Wahyudi, 2020). However, medical schools aim to produce competent graduates, making medical programs academically and emotionally demanding compared to other study programs (Sutanto, 2021). Therefore, medical students need to balance their time between non-academic activities and their academic schedule to achieve optimal academic performance (Wahyudi, 2020).

Objectively, the Grade Point Average (GPA) is used to assess students' academic performance. According to Rector Regulation No. 18 of 2021 on academic regulations, GPA at Universitas Muhammadiyah Yogyakarta refers to the average score reflecting the overall competency achievement of students from the first to the final semester (Universitas Muhammadiyah Yogyakarta, 2021).

Academic performance can be influenced by both internal and external factors. Internal factors include health, motivation, and interest in learning, study methods, and time management (Syafii, 2019; Zulkarnain, 2020). External factors are related to family and surrounding environment (Setyawan, 2018; Hartanto, 2021). Additionally, psychological factors, which are part of health factors, can also affect academic performance.

The emotionally demanding nature of medical programs can negatively impact students' psychological well-being, potentially leading to anxiety. The global prevalence of anxiety among medical students is 33.8%, with most cases occurring in the Middle East and Asia (Moghadam, 2022). The term "anxiety" derives from the Latin word *anxius* and the German word *anst*, both meaning negative effects and physiological stimulation (Schmidt, 2015).

According to Stuart (2013), various factors can influence anxiety, including biological, psychological, and social factors. Biological factors involve neurotransmitter system dysfunctions, such as gamma-aminobutyric acid (GABA), norepinephrine, and serotonin, which can affect the development of anxiety. Psychological factors include individual characteristics, such as resilience to stress. Meanwhile, social factors involve interpersonal relationships, which can be a source of stress and trigger anxiety (Stuart, 2013).

Student participation in non-academic activities may pose a threat to the self-system, triggering anxiety, especially due to interpersonal issues. Moreover, students involved in non-academic activities may experience conflicting interests, as they must balance academic obligations with non-academic responsibilities.

Based on this background, this study aims to analyze the influence of non-academic activities on anxiety levels and Grade Point Average (GPA) of medical students at the Faculty of Medicine, Universitas Muhammadiyah Yogyakarta.

## 2. Materials and Methods

This research has obtained an ethical feasibility letter with No. 281/EC-KEPK FKIK UMY/VIII/2024. This study is a quantitative research with a cross-sectional design, where data were collected at a single point in time to evaluate the relationship between the studied variables. The population in this study consisted of students from the Medical Education Study Program at Universitas Muhammadiyah Yogyakarta, class of 2021 and 2022. The sample was selected using purposive sampling technique, with inclusion criteria being active students participating in non-academic activities. The independent variable in this study is student participation in non-academic activities, while the dependent variables are students' anxiety levels and Grade Point Average (GPA).

Data were collected using two types of questionnaires:

1. The Zung Self-Rating Anxiety Scale (SAS) was used to measure anxiety levels. Scores from the SAS were then categorized into four groups: normal, mild to moderate anxiety, severe anxiety, and extreme anxiety.
2. An additional questionnaire was used to collect data on students' participation in non-academic activities and their GPA scores. Participation in non-academic activities was classified into four categories: no activity, low activity, moderate activity, and heavy activity. GPA scores were grouped into four categories: no honors, satisfactory, very satisfactory, and with honors (*cum laude*).

For data analysis, the Spearman correlation test was used to assess the relationship between the independent variable (participation in non-academic activities) and the dependent variables (anxiety levels and GPA). This test was chosen because the data were not normally distributed and the variables were ordinal in nature.

### 3. Results

The research data were collected from July to August 2024 using questionnaires distributed via Google Forms directly to each potential respondent.

A total of 204 students from the 414 total population of the Medical Education Study Program at Universitas Muhammadiyah Yogyakarta (UMY), class of 2021 and 2022, agreed to participate as respondents in this study. The characteristics of respondents are presented in Table 1.

**Table 1.** Respondent Characteristics

No	Characteristics	Frequency	Percentage
1.	<b>Student year</b>		
	2021	102	50%
	2022	102	50%
2.	<b>Gender</b>		
	Female	144	70.6%
	Male	60	29.4%
3.	<b>Age</b>		
	19 years	26	12.7%
	20 years	89	43.6%
	21 years	69	33.8%
	22 years	20	9.8%
4.	<b>Participation in On-campus Activities</b>		
	Yes	195	95.6%
	No	9	4.4%
5.	<b>Participation in Off-campus Activities</b>		
	Yes	14	6.9%
	No	190	93.1%
	Total	204	100%

Based on Table 1, the number of respondents from each cohort appears to be evenly distributed, with 102 respondents from each cohort. In terms of gender, there are 144 female respondents (70.6%) and 60 male respondents (29.4%). Most respondents are 20 years old, with a total of 89 respondents (43.6%). Additionally, 195 respondents (95.6%) participate in non-academic activities on-campus, while only 14 respondents (6.9%) engage in off-campus non-academic activities. The level of non-academic activities of students of the UMY Medical Education Study Program is

measured based on the overall activities they participate in, both on and off campus. The results can be seen in Table 2.

**Table 2.** Non-Academic Activity Levels of UMY Medical Students

No.	Non-Academic Activity Level	Frequency	Percentage
1.	No Activity	12	5.9%
2.	Low Activity	176	86.3%
3.	Moderate Activity	14	6.9%
4.	High Activity	2	1.0%
	<b>Total</b>	<b>204</b>	<b>100%</b>

Based on Table 2, it can be seen that the majority of medical students at UMY have a low level of non-academic activity, with 176 respondents (86.3%). Other students have a moderate level of activity, represented by 14 respondents (6.9%), followed by 12 students (5.9%) with no activity, and the smallest group being 2 respondents (1%) with a high level of non-academic activity.

The anxiety level of UMY Medical Education Study Program students was measured using the Zung Self-Rating Anxiety Scale questionnaire, with the results as shown in Table 3.

**Table 3.** Anxiety Levels of UMY Medical Student

No.	Anxiety Level	Frequency	Percentage
1.	Normal	180	88.2%
2.	Mild to Moderate	22	10.8%
3.	Severe	2	1.0%
4.	Extreme	0	0%
5.	Total	204	100%

Based on Table 3, 180 respondents (88.2%) were found to have normal anxiety levels. However, 24 respondents (10.8%) experienced mild to moderate anxiety, while 2 respondents (1%) experienced severe anxiety. No students were found to experience extreme anxiety.

**Table 4.** Grade of Cumulative Point Average (GPA) of UMY Medical Education Program Students

No.	Cumulative GPA	Predicate	Frequency	Percentage
1	2.00-2.75	Without Predicate	14	6.9%
2	2.76-3.00	Satisfactory	31	15.2%
3	3.01-3.50	Very Satisfactory	89	43.6%
4	3.51-4.00	Cum Laude	70	34.3%
	<b>Total</b>		<b>204</b>	<b>100%</b>

According to **Table 4**, the majority of students have a GPA with the predicate **Very Satisfactory** (43.6%). A total of 70 respondents (34.3%) achieved **Cum Laude**, 31

respondents (15.2%) were **Satisfactory**, and 14 respondents (6.9%) were **Without Predicate**.

**Table 5.** Relationship Between Non-Academic Activities and Anxiety Levels of UMY Medical Education Program Students

Activity Level	Anxiety Level			r	p
	Normal	Mild-Moderate	Severe		
None	9 (4.4%)	3 (1.5%)	0		
Low	156 (76.5%)	18 (8.8%)	2 (1%)	-0.1	0.152
Moderate	13 (6.4%)	1 (0.5%)	0		
High	2 (1%)	0	0		

From Table 5, the majority of students experiencing Mild-Moderate anxiety have a Low activity level (8.8%). Similarly, most students without anxiety also have a Low activity level (76.5%). The correlation test results show  $r = -0.1$  and  $p = 0.152$  ( $p > 0.05$ ), indicating that there is no significant relationship between non-academic activities and anxiety levels, with a very weak correlation strength. The negative correlation means that the higher the non-academic activity level, the lower the anxiety level.

**Table 6.** Relationship Between Non-Academic Activities and GPA of UMY Medical Education Program Students

Activity Level	Without Predicate	Satisfactory	Very Satisfactory	Cum Laude	r	p
None	2 (1%)	1 (0.5%)	7 (3.4%)	2 (1%)		
Low	11 (5.4%)	27 (13.2%)	75 (36.8%)	63 (30.9%)	0.035	0.617
Moderate	1 (0.5%)	3 (1.5%)	5 (2.5%)	5 (2.5%)		
High	0	0	2 (1%)	2 (1%)		

From Table 6, it is evident that the majority of students with a Low activity level have a Very Satisfactory GPA (36.8%). The same results are seen for students with no, moderate, and high activity levels who also have Very Satisfactory CPAs. The correlation test results show  $r = 0.035$  and  $p = 0.617$  ( $p > 0.05$ ), indicating no significant relationship between non-academic activities and GPA, with a very weak correlation strength.

**Table 7.** Relationship Between Anxiety Levels and GPA of UMY Medical Education Program Students

Anxiety Level	Without Predicate	Satisfactory	Very Satisfactory	Cum Laude	r	p
Normal	11 (5.4%)	26 (12.7%)	76 (37.3%)	67 (32.8%)		
Mild-Moderate	3 (1.5%)	5 (2.5%)	11 (5.4%)	3 (1.5%)	-0.167	0.017
Severe	0	0	2 (1%)	0		

According to Table 7, most students without anxiety have a Very Satisfactory GPA (37.3%). Students with Mild-Moderate anxiety also mostly have a Very Satisfactory GPA (5.4%). The correlation test results show  $r = -0.167$  and  $p = 0.017$

( $p < 0.05$ ), indicating a significant relationship between anxiety levels and CPA, with a very weak negative correlation. This means that the higher the anxiety level, the lower the GPA.

#### 4. Discussion

Based on the results of this study, it was found that the majority of students in the Medical Education Study Program at Universitas Muhammadiyah Yogyakarta (UMY) have low levels of non-academic activity, with 158 (77.1%) respondents falling into this category. This finding is in line with the research by Sohilait et al. (2019), which stated that medical students tend to have many academic responsibilities that limit their participation in organizational activities, making them less active in organizations.

The correlation test between non-academic activities and anxiety levels and Cumulative Grade Point Average (GPA) showed  $p > 0.05$ , with  $p = 0.152$  and  $p = 0.617$ , respectively. This indicates that there is no significant effect of non-academic activities on students' anxiety levels and academic performance. This finding is consistent with the research conducted by Wungudita (2019), who also found no relationship between extracurricular activity engagement and students' anxiety levels. However, these results contradict the findings of Zaifullah (2017), which showed a significant relationship between organizational involvement and students' anxiety levels. According to Faiza (2022), students who are active in organizations tend to be more resilient in dealing with stress because they have higher resilience levels. This aligns with the theory proposed by Stuart (2012), which states that resilience is an essential psychological characteristic in coping with anxiety. On the other hand, Downing (2021) argues that students involved in various non-academic activities may face higher stressors due to role conflicts, which can increase the risk of anxiety. Stuart (2012) also supports this view, stating that conflicting interests are one of the predisposing factors that can trigger anxiety.

Table 5 shows no significant relationship between non-academic activities and GPA. This result is consistent with the research by Yosephina (2020), who also found that organizational involvement did not significantly correlate with students' academic performance. Another study by Khash (2018) at the Faculty of Islamic Studies at UMY also concluded that organizational involvement did not affect students' academic performance. This may be due to other factors that more significantly influence academic achievement, such as interest and motivation to learn, learning methods, intelligence, and health, as revealed by Utami et al. (2018).

Additionally, this study found a significant relationship between anxiety levels and GPA, with  $p = 0.017$  ( $p < 0.05$ ). This finding supports the research by Hasibuan & Riyandi (2019), which showed that anxiety affects students' academic performance. Faiza (2022) also stated that higher stress levels can lower students' GPA. However, this finding contradicts the research by Rachim (2020), who found no significant relationship between anxiety levels and students' academic performance. According to Bruffaerts et al. (2018), mental health issues, including anxiety, have a direct impact on academic performance, where students with mental health disorders tend to have lower academic achievement than those without such disorders.

This study found that the majority of students in the Medical Education Study Program at Universitas Muhammadiyah Yogyakarta have low levels of non-academic activity. The correlation test results showed no significant relationship between non-academic activities and students' anxiety levels and GPA. However, there was a significant relationship between anxiety levels and GPA, where higher anxiety levels tended to correlate with lower GPA.

These findings suggest that non-academic activities, in the context of this study, do not directly affect students' anxiety or academic performance. However,

anxiety levels have been proven to have a significant impact on academic achievement. This highlights the importance of effective anxiety management among students to support their academic performance.

In the context of student development, although participation in non-academic activities was not directly proven to be influential, these activities can still provide benefits in building resilience and stress management skills, which ultimately can indirectly support academic performance. Therefore, a holistic approach that integrates mental health support and stress management, as well as providing opportunities for participation in non-academic activities, remains essential in efforts to improve students' academic performance.

## 5. Conclusion

This study shows that the level of non-academic activity does not significantly affect the anxiety levels and GPA of students in the Medical Education Study Program at Universitas Muhammadiyah Yogyakarta. However, there is a significant relationship between anxiety levels and GPA, where higher anxiety is associated with lower GPA. These findings emphasize the importance of anxiety management to support students' academic achievement.

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