

Self-Efficacy, Achievement Motivation, and Anxiety Among Junior High School Students in Selected Sub-urban Area of Indonesia

Ghozali Ghozali^{1,*}, Agus Setya Ningsih¹, Lisa Wahidatul Oktaviani¹, Rusni Masnina²

¹Department of Public Health, Universitas Muhammadiyah Kalimantan Timur, Indonesia

²Department of Nursing, Universitas Muhammadiyah Kalimantan Timur, Indonesia

Received August 14, 2024; Revised October 11, 2024; Accepted October 25, 2024

Cite This Paper in the Following Citation Styles

(a): [1] Ghozali Ghozali, Agus Setya Ningsih, Lisa Wahidatul Oktaviani, Rusni Masnina, "Self-Efficacy, Achievement Motivation, and Anxiety Among Junior High School Students in Selected Sub-urban Area of Indonesia," *Universal Journal of Public Health*, Vol. 12, No. 6, pp. 1140 - 1144, 2024. DOI: 10.13189/ujph.2024.120611.

(b): Ghozali Ghozali, Agus Setya Ningsih, Lisa Wahidatul Oktaviani, Rusni Masnina (2024). *Self-Efficacy, Achievement Motivation, and Anxiety Among Junior High School Students in Selected Sub-urban Area of Indonesia*. *Universal Journal of Public Health*, 12(6), 1140 - 1144. DOI: 10.13189/ujph.2024.120611.

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Abstract Anxiety is the most common form of mental disorders among adolescents. Anxiety may influence adolescents' academic performance at school. In more severe conditions, it might lead to depression and even suicide. This study examined the relationship of self-efficacy, achievement motivation, and anxiety among junior high school students in a sub-urban area of Samarinda City, Indonesia. Apart from these variables, researchers also added the students' characteristics of age and gender in the analysis. This was a quantitative study with a correlational design. The data were obtained from 685 junior high school students that were randomly selected from 9 schools. The data were collected using questionnaires and analyzed using SPSS Statistics Software to determine the relationship between variables. Univariate, bivariate, and multivariate analyses were used in this study. The results of multivariate analysis using ordinal logistic regression revealed that gender, age, and self-efficacy were significantly associated with students' anxiety, and there was no significant association between achievement motivation and anxiety. A conducive learning environment, providing appropriate feedback, counseling services, and involving parents are steps recommended by researchers to increase students' self-efficacy and minimize anxiety.

Keywords Student Anxiety, Achievement Motivation, Self-efficacy, Adolescent Mental Health

1. Introduction

Anxiety disorder is a common mental health issue globally, affecting an estimated 4% of the world's population [1]. In Indonesia, psychological issues, including anxiety, have shown a significant increase from year to year. The data from the Indonesian Psychiatrist Association (PDSKJI) that examined 14,988 people from 2020–2022, found that the number of anxiety disorder has significantly increased, from 68.8% in 2020 to 75.8% in 2022 [2]. The same condition occurred in Samarinda, where it was found that 52.7% of young people experienced emotional disorders in the form of anxiety.

Education is one of the fields directly impacted by student anxiety, as it has the potential to disrupt their learning process and academic achievement. A preliminary study indicated that junior high school students have low levels of self-efficacy and achievement motivation. Self-efficacy refers to an individual's belief in their ability to accomplish specific tasks, shaped by past and current experiences stored in memory [3], while achievement motivation is the drive to achieve high achievement goals [4].

Until now, not much research has been conducted in Indonesia to explain the relationship between achievement

motivation, self-efficacy and anxiety among junior high school students. Thus, it is expected that this study will be able to fill the knowledge gap in this field and provide a deeper understanding of the psychological factors influencing students' mental well-being in educational settings. On the other hand, it was also hoped that the findings from this study may become a reference for policymakers and educational practitioners in designing appropriate intervention programs to enhance students' mental well-being.

2. Materials and Method

This was a quantitative study with correlational design, which analyzed the relationship of self-efficacy, achievement motivation, and student anxiety. The population of this study was junior high school students in selected sub-district of Samarinda, Indonesia. Based on sample size calculation using Lemeshow's formula, a minimum sample size of 331 was determined. Considering the design effect, the minimum sample size increased to 662 respondents. The actual number of respondents obtained in this study was 685 students, selected randomly from the total population of 2,618 students. This study was conducted from March to June 2024.

The instrument for data collection used in this study was a set of self-directed questionnaires consisted of three content measurements. General Self-Efficacy Scale (GSES) questionnaire developed by Schwarzer and Jerusalem (1995), consists of 10 items designed to measure self-efficacy in various situations. For achievement motivation variable, the Achievement Motivation Inventory (AMI) questionnaire was used, which was originally created by Schuler, Thornton, Frintrup, and Muller-Hanson, and further developed by Muthee and Thomas (2009). The AMI consists of 32 items that aim to assess students' achievement motivation in an educational context, with 18 favorable items and 14 unfavorable items. The instrument for the dependent variable, student anxiety, was the Depression Anxiety Stress Scale questionnaire (DASS-42) anxiety subscale, which consists of 14 questions. To ensure the reliability of the instruments used in this study, computed Cronbach's Alpha values obtained were 0.804 for the DASS-42 anxiety subscale, 0.866 for GSES, and 0.771 for AMI questionnaires.

In this study, there are four predictor variables; gender, age, self-efficacy and achievement motivation, and one outcome variable, student anxiety. For univariate analysis, the frequency distribution technique was used to identify and describe the characteristics of each variable. Frequency distribution provided an overview of the data

distribution for each variable under study. For bivariate analysis, the Chi Square test was conducted. This test was chosen to examine whether there was a significant relationship between two variables with categorical data scales. In the Chi Square test, two variables were considered to have a significant relationship if the p-value was < 0.05 . Subsequently, the multivariate analysis using ordinal logistic regression was conducted to identify the risk and protective factors associated with students' anxiety. The findings were reported using Adjusted Odds Ratio (AOR), 95% Confidence Interval (95% CI), and a p value threshold of < 0.05 .

The application of research ethics, especially in data collection, was carried out by requesting research permission and informed consent. Then, the data was processed and analyzed using univariate, bivariate and multivariate analysis. In the univariate analysis, an overview of the number and percentage of respondents based on all the variables studied was obtained. Next, in the bivariate analysis, the Spearman rank test was used to measure the significance, strength and direction of the relationship between ordinal variables. And then, a multivariate linear regression test was used to analyze significant factors.

3. Results

3.1. Univariate Analysis

The descriptive characteristics of the samples were presented in Table 1. Most of respondents were under 14 years old (57.1%). Based on their gender, the majority of respondents were male, as many as 366 students (53.4%), and the remaining 319 students (46.6%) were female. The largest percentage of students were at a moderate level of anxiety, namely 34.9%, then followed successively by severe (22.8%), extremely severe (15.5%), mild (10.2%) and normal (16.6%). The existence of students with severe and extremely severe anxiety in significant numbers and percentages needs to be a serious concern.

Table 1 also described the distribution of respondents based on their categories of predictor variables. In this case, it could be seen that the majority of respondents in this study had low self-efficacy, as many as 368 students (53.7%), while the remaining 317 students had high self-efficacy (46.3%). Almost the same condition occurred in the achievement motivation variable, where the majority of respondents in this study had a low level of achievement motivation (57.5%), while only 42.5% had high level motivation.

Table 1. Characteristics of respondents and analysis of students' anxiety (N=685)

Variables	Students' Anxiety						P-value	X ²
	n (%)	Normal (n=114) n (%)	Mild (n=70) n (%)	Moderate (n=239) n (%)	Severe (n=156) n (%)	Ext.Severe (n=106) n (%)		
Gender								
Male	366 (53.4)	83 (72.8)	46 (65.7)	139 (58.2)	72 (46.2)	26 (24.5)	<0.001	62.500
Female	319 (46.6)	31 (27.2)	24 (34.3)	100 (41.8)	84 (53.8)	80 (75.5)		
Age								
< 14 years	391 (57.1)	49 (43.0)	42 (60.0)	141 (59.0)	93 (59.6)	66 (62.3)	0.022	11.422
≥ 14 years	294 (42.9)	65 (57.0)	28 (40.0)	98 (41.0)	63 (40.4)	40 (37.7)		
Self-Efficacy								
Low	368 (53.7)	14 (12.3)	12 (17.1)	83 (34.7)	153 (98.1)	106 (100.0)	<0.001	365.865
High	317 (46.3)	100 (87.7)	58 (82.9)	156 (65.3)	3 (1.9)	0 (0.0)		
Motivation								
Low	394 (57.5)	23 (20.2)	21 (30.0)	91 (38.1)	153 (98.1)	106 (100.0)	<0.001	307.041
High	291 (42.5)	91 (79.8)	49 (70.0)	148 (61.9)	3 (1.9)	0 (0.0)		

Table 2. Ordinal logistic regression analysis

Variables	P-value	AOR	95% CI	
			Lower	Upper
Gender	<0.001	2.047	1.528	2.738
Age	0.015	1.417	1.069	1.879
Self-efficacy	<0.001	50.800	22.137	116.586
Motivation	0.233	1.577	1.342	3.354

3.2. Bivariate Analysis

Based on Table 1, there was a significant relationship between gender and the level of students' anxiety, with p value of <0.001 (<0.05). The majority of students who experienced extremely severe anxiety were female (75.5%), whereas the proportion of students with normal level of anxiety was higher in males (53.4%) than females (46.6%). Similar to gender characteristics, there was a significant relationship between students' ages and their level of anxiety, as shown with p value of 0.022 (< 0.05). The majority of students with extremely severe anxiety were under 14 years old (62.3%), while most of students with normal status of anxiety were aged 14 and more (57.0%).

Table 1 also revealed that there was a significant relationship between students' self-efficacy and their level of anxiety, which can be interpreted from the p value, namely <0.001 (<0.05). All of students with extremely severe anxiety had a low level of self-efficacy, while the majority of students with normal status of anxiety had a high level of self-efficacy. Similarly, there was a significant relationship between students' achievement motivation and their level of anxiety, with p value of <0.001 (<0.05). All of students with extremely severe anxiety had a low level of motivation, while the majority of students with a normal level of anxiety had a high level of

achievement motivation (79.8%).

3.3. Multivariate Analysis

Table 2 described that gender (female), age (< 14 years) and low self-efficacy are identified as significant risk factors for students' anxiety, but there was no significant relationship between achievement motivation and anxiety. Female students have a 2.047 times higher likelihood of experiencing higher level anxiety compared to male students (AOR: 2.047; 95% CI: 1.528-2.738). Furthermore, students aged under 14 years old have a 1.417 times higher likelihood of experiencing higher levels of anxiety compared to students aged 14 years and more (AOR: 1.417; 95% CI: 1.069-1.879). Then, students with a low level of self-efficacy have a 50.800 times higher likelihood of experiencing a higher level of anxiety compared to students with a high level of self-efficacy (AOR: 50.800; 95% CI: 22.137-116.586). The achievement motivation variable does not indicate a significant relationship (p value=0.233).

4. Discussion

From the result of this study, it is known that gender,

age, and self-efficacy have a significant contribution to students' anxiety. This discussion will be focused on these variables and their relationship with students' anxiety.

Anxiety can motivate or hinder learning, depending on how students can manage it. Anxiety is also considered as a factor that can hinder the learning process, because it can interfere with a person's cognitive functions, such as concentration, memory, concept formation and problem solving. This study used the DASS-42 questionnaire on the Anxiety aspect with 14 question points. The anxiety subscale includes several main points designed to measure a person's experience of anxiety [5]. Based on the research results, it was found that anxiety occurs more often in female students than male students. As many as 75.5% of students who experience anxiety at a very severe level are female. In contrast, 72.8% of students at the normal level are male. This is related to the experiences of young women which have a big role in their anxiety levels. In general, young women who often experience anxiety tend to anticipate excessive anxiety. This was in line with research conducted by Siregar [6] showing that the majority of sufferers of severe anxiety are women. The gender factor significantly influences anxiety levels, so women are more at risk of experiencing anxiety than men [6].

The results of this study indicate a significant relationship between age and student anxiety. Students who are younger and have just entered school tend to experience anxiety at a more severe level than students who are older and have been in school longer. According to the researchers' assumptions, this can happen because younger students are generally students who are still at the lowest level and have just entered middle school, whose adaptation coping process is not yet as mature as students at a higher level. This deficiency causes students to not be fully prepared to face stressors at school and experience anxiety more easily. This is in line with the opinion of Mohammadi et al. [7] which states that when students feel they do not have adequate control or understanding of the situation they face, anxiety will arise among them. However, this is not in line with research conducted by Kirk et al. [8] who concluded that older adolescents (aged 14–16 years) had higher anxiety compared to younger adolescents (aged 12–13 years).

This study also shows a significant contribution of self-efficacy to student anxiety. Students who have low self-efficacy have a tendency to experience more severe anxiety, and vice versa. This is in line with research by Hendral et al. [9] which states that low self-efficacy is often associated with higher levels of anxiety, where a significant negative correlation was found between self-efficacy and anxiety in students. Similarly, research by Nurfitriyani et al. [10] also showed that self-efficacy was significantly correlated with students' communication anxiety. In the study to explore the relationship between students' self-efficacy and psychological anxiety in China, Li [11] identified that more than half of students

experienced a moderate level of psychological anxiety. This study also found that students' self-efficacy significantly correlated with their psychological anxiety. A higher level of self-efficacy was associated with lower status of psychological anxiety, and vice-versa. Liu et al. [12] studied the determinants of anxiety among school students in Iran during COVID-19 pandemic. This online survey study concluded that there was a significant negative correlation between anxiety and self-efficacy. This study highlighted the importance of self-efficacy in reducing anxiety among students, suggesting that enhancing self-efficacy can be an effective coping strategy during pandemics. Similarly, Lin [13] found that there was a negative correlation between anxiety and self-efficacy in language learning among Chinese international students. This study highlighted the importance of the supportive role of teachers as a crucial factor in alleviating anxiety. Self-efficacy can have an impact on anxiety, and in more severe cases can even cause mental health problems [14].

However, the results of this study are not in line with the results of previous research conducted by Jameson et al. [15] which stated that self-efficacy does not mediate the relationship with anxiety, due to the existence of psychological factors such as mindfulness, so self-efficacy does not always influence anxiety significantly. This is the case in other research conducted by Tuzzahra [16] which revealed that self-efficacy did not have a significant effect on students' cognitive anxiety. The next explanation states that there are other factors that determine student anxiety, namely environmental pressure or social expectations.

The achievement motivation variable has a significant relationship in bivariate analysis with students' anxiety, but in multivariate analysis this variable shows no significant relationship. However, Yang & Wang [17] revealed that anxiety has a significant negative relationship with the intensity of achievement motivation, which means that the higher the intensity of a student's motivation, the lower the level of anxiety in the classroom. Achievement motivation can be influenced by various factors, including social support from family, friends, and teachers, as well as interesting and relevant teaching methods. This study has limitations. Due to cultural differences, several predictors in other studies could not be assessed in this study. The results depend upon the characteristics of the samples and may not be generalized to other populations.

5. Conclusions

Based on the final results of the research data analysis, the self-efficacy variable was significantly related to student anxiety, while this was not the case with the achievement motivation variable. Besides that, age and gender characteristics were also significantly related to students' anxiety. Several suggested efforts to increase students' self-efficacy and minimize their anxiety include creating positive learning situations, providing

constructive and positive feedback, counseling services, and involving parents in the educational process. The future research related to cross-cultural and environmental habits of adolescents is urgently needed, because this can affect the assessment of other predictors.

Acknowledgements

The authors would like to express their gratitude to Universitas Muhammadiyah Kalimantan Timur for providing support and guidance.

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