

The Relationship Between Academic Stress Levels and Online Game Addiction Tendencies Among Students of SMK Muhammadiyah 1 Taman

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ABSTRACT

Objective: This study aims to identify and analyze the relationship between academic stress level and online game addiction tendency among students at SMK Muhammadiyah 1 Taman. In the digital era, online gaming has become a popular phenomenon among students, but it also has the potential to cause addiction that can have a negative impact on academic aspects and mental health. **Method:** The method used in this study was a quantitative non-experiment involving 182 students randomly drawn from the population of SMK Muhammadiyah 1 Taman. Data were collected using a Likert scale designed to measure academic stress levels and online game addiction tendencies. **Results:** The results of the analysis using the Spearman correlation test showed a positive and significant relationship between academic stress level and online game addiction tendency, with a correlation coefficient of 0.161 and a significance value of $p = 0.030$. This finding indicates that the higher the level of academic stress experienced by students, the greater their tendency to experience addiction to online games. **Novelty:** This study provides important insights for educational institutions to develop interventions that can assist students in managing stress and preventing addictive behaviors. Implications of the results include the need for preventive approaches in education to support students' mental health, including counseling services and stress management training. By understanding this relationship, it is expected to reduce the negative impact of academic stress on addictive behaviors among students.

INTRODUCTION

In this digital age, online gaming has become a very popular phenomenon among people, including students [1]. Online games offer entertainment and relaxation, but also have the potential to cause addiction. Online game addiction can have a negative impact on various aspects of students' lives, such as health, psychological, social, and academic [1],[2]. Based on data from the Central Statistics Agency (BPS) in 2023, 46.2% of children aged 0-18 dominate the online gaming market in Indonesia, with an average of one child having more than one online game on their devices. This indicates that many children in Indonesia have entered the category of online game addiction. Additionally, a report from Surabaya's Menur Mental Hospital noted that around 3,000 children and teenagers were treated for online game addiction in 2024. According to another recent data, the prevalence of online game addiction among adolescents shows an alarming number, with around 37.2% of students experiencing severe addiction to online games [3]. This phenomenon not only affects students' study time, but also has the potential to cause significant academic stress. Research shows that students experiencing academic stress tend to seek escape through online gaming, which can worsen their condition [4]. With increasing academic demands and pressure from the social environment, students often feel trapped in a cycle of stress and addiction.

Online gaming addiction is defined as a compulsive behavioral pattern of excessive internet-based gaming, which interferes with an individual's academic, social, or psychological functioning. According to the DSM-5, this condition is called Internet Gaming Disorder (IGD) and is characterized by symptoms such as loss of control over play duration, tolerance (need for increased play time for satisfaction), as well as withdrawal symptoms (restlessness or anger when not playing [5],[6]. Based on a research it is characterized by chronic use of games for self-gratification, despite negative consequences such as decreased academic performance and social isolation. A research referred to it as part of internet addictive disorder, while another research emphasized its repetitive nature and difficulty in voluntarily breaking the habit. In essence, this tendency involves high tolerance, compulsivity, and withdrawal symptoms when not playing [7].

If online gaming addiction is not addressed, the impact can be very serious and cover various aspects of an individual's life, especially students. From an academic aspect, students who are addicted to online games tend to experience a decline in learning performance as time that should be spent reading, completing assignments, or preparing for exams is instead spent playing games. This leads to divided focus and decreased concentration ability, which has a direct impact on their academic performance [8]. In addition, from a mental health aspect, online gaming addiction can trigger disorders such as stress, anxiety, depression and aggressive behavior.

Factors that influence online gaming addiction tendencies include internal and external factors. Internal factors include intrinsic motivation to compete, earn rewards, or create a unique identity in the virtual world. Research showed that intrinsic motivation was the dominant factor behind addictive behavior in 56% of respondents [9]. External factors include the social environment such as peer influence, lack of parental attention, and academic stress. Academic stress is one of the main triggers because students often use games as a coping mechanism to avoid the pressure of assignments or exams [10].

Academic stress is defined as psychological pressure experienced by students due to high academic demands, including assignments, exams, and expectations from the surrounding environment. In this context, stress can trigger maladaptive behaviors, such as addiction to games, which are often used as an escape from the pressure [4]. Online gaming addiction is defined as the excessive use of games that interferes with daily life, including social and academic aspects. This concept also includes psychological coping theory, which explains how individuals use various strategies to cope with stress.

Academic stress refers to the psychological distress experienced by students due to high academic demands, such as assignment loads, exams, and expectations from the social environment [11]. This concept can be measured through various indicators, including anxiety levels, sleep quality, and satisfaction with the learning experience. On the other hand, online gaming addiction describes maladaptive behavior in the use of video games, which can be assessed through the frequency of playing, the duration of time spent playing, and the impact on social interaction and academic performance in students. The constructs were selected based on the relevance and urgency of the

problem among college students today. With the increasing use of technology and online gaming among the younger generation, it is important to explore how these factors influence each other.

Students are often in high-stress situations due to academic demands and social pressures. Competitive school environments can trigger maladaptive behaviors such as online gaming addiction as a form of escape from stress. In addition, lack of social support and effective coping skills can exacerbate this vulnerability [12]. Students who do not have good stress management strategies are more likely to fall into online gaming addiction. It is important to identify the contextual factors that contribute to this addiction so that interventions can be designed appropriately.

Academic stress in students arises due to various factors that can be categorized into internal and external factors [13]. Internal factors include individual psychological and physical aspects, such as overly high self-expectations, mental health conditions (anxiety and depression), mindset, and ineffective time management [8]. Meanwhile, external factors include heavy academic load, adaptation to a new environment, financial problems, social pressure, demands and pressure for high achievement, lack of social support and interaction with teacher [13],[14].

Various previous studies have shown that the tendency of online game addiction can be influenced by the level of academic stress in students. In a study, academic stress is caused by the high pressure experienced by students in the educational environment, which often contributes to escape-seeking behavior through online gaming [1]. Another study in China found a positive correlation between academic stress and gaming intensity [15]. Study in Indonesia also reported that students with high curriculum demands tend to spend longer time playing online games as an escape from pressure. According to another research, many adolescents in Bekasi City experience difficulties in self-control when playing online games, potentially causing a negative impact on their mental health and academic performance [10].

There are still few previous studies that specifically discuss students at certain levels. In addition, it is still rare for research on this topic to be conducted on SMK students, especially since SMK students are in the transition phase to adulthood, often facing various academic and social pressures that can trigger stress. This research was conducted at SMK Muhammadiyah 1 Taman because no one has studied research on this topic before.

The purpose of this study was to identify and analyze the relationship between academic stress levels and online game addiction tendencies in students at SMK Muhammadiyah 1 Taman. This study also aims to provide a better understanding of how stress can influence addictive behavior towards online games. Based on the purpose of this study, the research hypothesis was formulated:

1. Null Hypothesis (H_0): There is no significant relationship between academic stress level and online game addiction tendency at SMK Muhammadiyah 1 Taman.
2. Alternative Hypothesis (H_1): There is a significant relationship between academic stress level and online game addiction tendency at SMK Muhammadiyah 1 Taman.

RESEARCH METHOD

Research Design

This study uses non-experimental quantitative research methods. This type of research aims to measure and analyze the relationship between two variables, namely academic stress levels and online game addiction tendencies, without intervening or manipulating [16]. This research is suitable for exploring the relationship between variables without making changes to the system being observed [17],[18]. The aim is to identify patterns that already exist and understand how the variables interact. The results of this study are expected to provide better insight into how academic stress affects students' gaming behavior.

Population/sample

The population in this study were students of SMK Muhammadiyah 1 Taman. The sample studied was students of SMK Muhammadiyah 1 Taman class 2024, 2023 and 2022. The student population at SMK Muhammadiyah 1 Taman totaled 354 students consisting of 5 departments. In determining the number of samples from 354 populations in this study, it refers to the Krejcie-Morgan table with an error rate of 5%, resulting in a sample of 186. The sampling technique used for this research is simple random sampling technique. Simple random sampling is sampling from a population that is done randomly without regard to existing classes.

Research Instruments

The data collection technique used in this study uses two psychological scales, which is one type of measuring instrument that uses written requirements to obtain information from respondents. The scale used is a Likert scale to produce empirical data from the level of academic stress and online game addiction tendencies.

The academic stress scale or also called Academic Stress Scale (ASS) is based on 4 aspects of academic stress namely cognitive, affective, physiological and behavioral [19]. This scale has a reliability of $r = 0.943$ and has been adapted according to the needs of this study. This scale has two types of items, namely favorable (positive statements that support the object being revealed) and unfavorable (negative statements that support the object being revealed). The format of writing an item is in the form of a statement and the response format refers to the Likert scale model, which consists of 5 answer options in the form of STS (Strongly inappropriate), TS (Not appropriate), R (Undecided), S (Appropriate), and SS (Very Appropriate). The placement of the items is randomized to prevent research measurement bias.

The online game addiction scale or also called Game Addiction Scale (GAS) is based on 7 aspects, namely salience, tolerance, mood modification, relapse, withdrawal, conflict, and problems. This scale has a reliability of $r = 0.946$ [20]. This scale has an item writing format in the form of statements and a response format that refers to the Likert scale format, which consists of 4 answer choices in the form of TP (Never), J (Rarely), S (Often), and SS (Very often).

Research Procedure

This research process starts from formulating and identifying problems, conducting a review of relevant literature and defining a theoretical framework. Furthermore, researchers carried out design and planning which consisted of; choosing a research design, identifying the population to be studied, determining the method of measuring research variables, developing a sampling strategy, reviewing and concluding a sampling strategy, reviewing and concluding a research strategy, conducting research and making necessary revisions. The next step after collecting data in the field, the researcher analyzes the data, calculates and processes the data that has been collected. After that, the researcher makes a conclusion of hypothesis testing which is neatly arranged so that it is easy to read and understand.

Data Analysis Technique

This study uses the Spearman correlation data analysis technique with the help of JASP for Windows software. The choice of this technique is based on the research data that has an abnormal distribution. The purpose of using this analysis technique is to determine whether there is a relationship between the independent variable (X), namely the level of academic stress, and the dependent variable (Y), namely the tendency of online game addiction in students of SMK Muhammadiyah 1 Taman.

RESULTS AND DISCUSSION

Results

Descriptive Data

The research data that has been distributed and collected will be analyzed to see its distribution. This aims to determine the appropriate data analysis method. The following are the categorization results on the academic stress level variable and the online game addiction tendency variable in the research sample.

Table 1. Categorization of each variable.

Variables	Category	Vulnerable Score	Frequency	Percentage
Academic Stress Level	Low	25.00 - 34.29	28	15.4%
	Medium	34.30 - 69.38	123	67.6%
	High	69.39 - 96.00	31	17.0%
	Total			182
Variables	Category	Vulnerable Score	Frequency	Percentage
Kecenderungan Adiksi Game Online	Low	28.00 - 34.29	37	20.3%
	Medium	34.30 - 69.38	116	63.8%
	High	69.39 - 99.00	29	15.9%
	Total			182

Next is the comparative data of academic stress level and online game addiction tendency. The data has 186 samples and then eliminates 4 deviant items known from the boxplot and results in 182 student samples. The mean score on the academic stress level variable is 85.863 with a minimum value of 39 and a maximum of 129. Meanwhile, the average on the online game addiction tendency variable is 51.835 with a minimum value of 28 and a maximum of 99. The standard deviation of the academic stress level variable is 17.719 while the online game addiction tendency variable is 17.540.

Table 2. Descriptive statistics table.

Descriptive Statistics			
	Academic Stress Level	Online Game Addiction Tendencies	
Valid	182	182	
Missing	0	0	
Mean	85.863	51.835	
Std. Deviation	17.719	17.540	
Minimum	39.000	28.000	
Maximum	129.000	99.000	

Assumption Test

The next stage is the assumption test. The Shapiro-Wilk normality test results show that the academic stress level data has a significance value of 0.250 ($p > 0.05$), which means the data is normally distributed, while the online game addiction tendency data has a significance value of < 0.001 ($p\text{-value} < 0.05$), which means the data is not normally distributed. Thus, only the academic stress level variable meets the normality assumption test, while the online game addiction tendency variable does not. Therefore, to analyze the correlation between the two variables, a non-parametric test was used, namely the Spearman correlation test.

Table 3. Shapiro-wilk normality test table.

	Academic Stress Level	Online Game Addiction Tendencies
Shapiro-Wilk	0.990	0.948
P-value of Shapiro-Wilk	0.250	$< .001$

Hypothesis Test

The results of the Spearman correlation analysis showed a unidirectional relationship between the level of academic stress and the tendency of online game addiction, with a Spearman correlation coefficient (ρ) of 0.161 with a significance value (p) of 0.030. This indicates that the higher the level of academic stress experienced by individuals, the higher the tendency to experience online game addiction.

Table 4. Spearman correlation test.

Spearman's Correlations		Spearman's rho	p
Academic Stress Level	Online Game Addiction Tendencies	0.161	0.030

* $p < .05$, ** $p < .01$, *** $p < .001$

Discussion

The results of the Spearman correlation analysis show that there is a positive and significant relationship between the level of academic stress and the tendency of online game addiction in students, with a correlation coefficient of 0.161 and a significance value of 0.030 ($p < 0.05$) so that the null hypothesis (H_0) is rejected and the alternative hypothesis (H_1) is accepted. This finding indicates that the higher the level of academic stress experienced by students, the higher their tendency to experience addiction to online games. Based on the interpretation of the correlation coefficient [21], the value of 0.161 is included in the very weak to weak category (0.00- 0.199). Although the strength of the relationship falls into the weak category, this result is still statistically significant at the 95% confidence level, so it can be concluded that academic stress has a real relationship to the tendency to play online games addictively. Theoretically, these results support the view that academic stress can be one of the factors driving escape behavior, where individuals try to avoid pressure through fun activities such as playing games. Based on the stress coping theory, individuals experiencing psychological distress tend to seek forms of emotional adjustment (emotion-focused coping), including by engaging in entertainment activities [22]. Online gaming is a popular form of escapism as it offers a virtual experience that provides a sense of control, instant gratification, and social interaction free from the demands of the real world. If this activity is carried out continuously and excessively, it can develop into a form of addictive behavior.

The findings in this study also reinforce the results of several previous studies. Several studies have been conducted to examine the relationship between academic stress and online game addiction in high school students. One of them is a study which examines the level of academic stress in students who play online games at SMA Negeri 4 Muara Enim. This study found that students who frequently play online games tend to have higher levels of academic stress compared to those who rarely or do not play online games [23]. This suggests that there is a positive correlation between the duration of playing online games and the level of academic stress in high school students.

Another study by examined the relationship between learning stress levels and online game addiction in adolescents at SMK Negeri 2 Jember. The results showed that there is a significant relationship between the level of learning stress and online game addiction, where students with high levels of learning stress tend to be more susceptible to online game addiction [24]. In addition, research conducted on high school students in Jakarta found that high levels of academic stress due to exam pressure and demands for

grades positively correlated with the intensity of playing online games [25]. Games are used as a form of escape from the excessive learning load.

Research in Korea also supported these findings. They revealed that academic stress indirectly contributes to digital game addiction through the mediation of negative feelings, and this relationship is strengthened by parents' gaming habits [26]. In a different context, another research added that stress has a significant effect on gaming addiction in adults, but the relationship can be mediated by the level of mindfulness and conscientiousness [27]. That is, the more capable individuals are of managing self-awareness and personal responsibility, the less likely stress will drive addictive behavior.

Nevertheless, this study has some limitations in that the strength of the correlation found in this study is relatively weak. This suggests that there are many other factors that may have a greater influence on online gaming addiction tendencies, such as personality, emotion regulation, level of self-control, and social support. Thus, academic stress is not the only predictor of such behavior, but rather part of a complexity of interacting psychosocial factors. In addition, the scope of the study was limited to one particular population, so the results may not be generalizable to other groups of students with different institutional, regional, or cultural backgrounds.

CONCLUSION

Fundamental Finding : Based on the results of data analysis and discussion that has been carried out, the researcher concludes that the hypothesis is accepted, which shows that there is a positive and significant relationship between academic stress and the tendency of online game addiction in college students. The Spearman correlation test results show a correlation coefficient value of 0.161 with a significance value of 0.030 ($p < 0.05$), which indicates that the higher the level of academic stress experienced, the greater their tendency to experience addiction to online games in students of SMK Muhammadiyah 1 Taman. Although this relationship is statistically weak, it is still significant and suggests that academic stress can be one of the psychological factors that contribute to addictive behavior towards online games. **Implication :** This research makes a theoretical contribution to the field of psychology in strengthening the understanding of adolescent addictive behavior triggered by stress, especially in the context of vocational education. This study also enriches the literature of educational psychology and adolescent developmental psychology, especially in relation to the digital phenomenon and students' mental health. The implications of the results of this study are quite extensive. In the context of higher education, it is important for institutions to develop preventive and intervention approaches that can help students manage stress in a healthy manner. Counseling services, stress management training, as well as academic load management need to be a major concern. For families and social environments, emotional support and supervision of the use of digital technology also play an important role in preventing the development of addictive behaviors due to unmanageable academic pressure. **Limitation :** However, this study has limitations, including the relatively small correlation coefficient which indicates a weak relationship,

even though it is statistically significant. The use of self-reported questionnaires may also pose a risk of response bias, and the cross-sectional design used cannot determine causality between variables. Additionally, this research was limited to one school, which restricts the generalizability of the findings. **Future Research** : Suggestions for future research, it is recommended to develop this research by expanding variables, such as the types of games played or other social factors (such as peer support), as well as using other approaches or analysis to dig deeper into the psychological dynamics of students.

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