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## Positif Correlation of Online Game Addiction and Depression Level of Adolescent



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### Abstract

Nowadays, online game become a lifestyle toward young generations and tends to become addiction. Addiction to online games has a risk of suffering from Asperg's syndrome, autism, and is prone to various disorders and mental disorders. The purpose of this study was to analyze the correlation of online game addiction and depression levels of adolescents at SMAN 2 Bangkalan. This study used correlation analytic method with cross sectional design. The population was 410 students of class XII from science and social program at Public Senior high School (SMAN) 2 Bangkalan. The sample was 202 respondents taken by random sampling technique. The data collection used questionnaire then analyzed by using the Spearman Rho rank test ( $p < 0.05$ ). The results showed most of the respondents or 138 students (68.3%) were in the category of moderate addiction, 31 students (15.3%) in the category of mild addiction, a small proportion or 28 students. (13.9%) were in the category of severe addiction, and 5 students (2.5%) not addicted to games. It could be seen that the distribution of respondents based on the level of depression showed 157 students (77.7%) had mild depression, 34 adolescents (16.8%) had a moderate depression, 5 students (2.5%) had severe depression, and 6 students (3.0%) had no depression. Based on the results of the analysis using the Spearman rank test, it was found that  $p$  value = 0.017 ( $<0.05$ ), meant that there was a significant correlation between online game addiction and depression levels of adolescents. It is necessary to increase the knowledge of students about addiction and the level of depression due to online games. The society have to teach their children the dangerous side effect of addiction toward online games.

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## INTRODUCTION

The development of the internet is currently growing rapidly and attracts use from various circles of society. Online games are a type of game that uses electronic devices such as computers or special devices that are usually used to play games (Krossbakken et al., 2018). Online games are internet network based, so players around the world can play together at the same time. There are so many online game players around the world, around 217 million are students, it is approximately 85% of all online game's user. The symptoms of online game addiction are playing online games almost every day for long periods of time, being unable to rest, losing interest in other activities and using games as an escape (Wittek et al., 2016). Study by (Aziz et al., 2021) stated that online games tend to give high addiction toward students. As they lack of awareness of the responsibility of life than adult, students seek enjoyment of something made them thrilled or interested. Online games offered enjoyment in playing the characters inside games. Moreover, online games could become escape world for the students who dreamed to become perfect individual in the real world but could not to do so (Pratama et al., 2020). Theory of addiction of online game stated that the interesting thing of playing a character inside the world of game with much freedom would trigger the instinct inside the brain to keep playing. Moreover, the more appealing the character and the features of online game were, the more appealing that game to be played in the long time (Febriyanti et al., 2022). The process of addiction toward online game can be seen from the long spending of time for playing the game, which actually surpassed 20-25 hours a week. When a teenager undergone the state of addiction toward online game, he/she would easily get time distortion, inattention of doing chores and study, trigger hyperactivity, and flowing with negative emotions. Moreover, if online games portrayed any violence behavior, it had a stronger effect causing aggression against adolescents. The interactive and interesting features provided by the game developer would maintain students' interest to keep playing. It was dangerous if they kept exposed into the violence content that it could react unconsciously toward the society as violent as what they do in the game (Karaca et al., 2020).

In 2018, the number of internet users in Indonesia had reached 171.17 million students. This figure is equivalent to 64.8% of Indonesia's total

population of 264.16 million students. In 2017, there was an increase in internet users in Indonesia which reached 27.92 million students or grew by 10.12%. Depression is ranked second after schizophrenia as the most common mental disorder suffered by patients treated in mental hospitals, while students with depression who are outside mental hospitals are estimated to be five times more than students with schizophrenia. The prevalence of severe mental disorders, such as schizophrenia, is 1.7 per 1000 population or about 400,000 students. The burden of disease or the burden of mental illness in the country is still quite large. The results of the 2013 Basic Health Research (Riskesdas) show that the prevalence of mental emotional disorders as indicated by symptoms of depression and anxiety is 6% for those aged 15 years and over or around 14 million students (Choi et al., 2018). There is no definite record of the number of adolescents who experience depression in Indonesia. Based on the data from the Semarang City Health Office in 2010 there were 91700 (63.84) out of 14,635 adolescents who needed counseling treatment who experienced liability problems, one of which was depression (Monika, 2017).

Online game addiction behavior tends to result in frequent forgetting of time, disturbed and wasteful sleep patterns in finances, being lazy in activities other than playing games, sleeping patterns and irregular eating patterns so that they become emotional. The main factor that can cause someone to become an addict is because in online games there are many other players who can play together. Players around the world can interact with each other through the game, thus forming what is called a virtual world (Wardhana, 2021a). Students who are isolated from the environment, tend to get bored quickly, like to be alone, and lack self-confidence are students who may be at risk of becoming game addicts (Pratama et al., 2020). Game addiction is more common in students, because of the desire to gain strength, speed of change and the desire to analyze the rules in the game system and optimize characters in online games. Addiction to online games has a tendency or risk of suffering from Asperg's syndrome, autism and is prone to various disorders and mental disorders, one of which is depression (Choi et al., 2018).

## METHOD

The type of the research was correlation analytic with cross sectional approach. The

population in this study were 410 students of senior high school 2 Bangkalan, Madura Island, Indonesia. The sample was students of class XII from science and social program. The sample was 202 students. The sampling technique used simple random sampling. This study was conducted from January-July 2022. The independent variable in this study was online game addiction and the dependent variable in this study was depression level. This study used an online game addiction measurement

tool, namely the Game Addiction Scale compiled by (Vera & Netrawati, 2019). This scale referred to aspects of salience, tolerance, mood modification, withdrawal, relapse, conflict and problem. In order to measure the depression level, researchers used a scale based on the theory of Burns The Beck Depression Inventory (BDI) (Ahrari et al., 2013). The data analysis used Spearman Rho test (Ryandono et al., 2022).

## RESULTS

**Table 1:** Characteristics of respondents by gender for students in class XII SMAN 2 Bangkalan

No	Gender	Frequency	Percentage %
1	Male	131	64.9
2	Woman	71	35.1
<b>Total</b>		<b>202</b>	<b>100</b>

According to the table above, it can be seen that the distribution of respondents by gender shows that most of the respondents with male sex are 131 adolescents (64.9%), almost half of them are female as many as 71 students (35.1%).

**Table 2:** Characteristics of respondents based on online game addiction in class XII studies at SMAN 2 Bangkalan

No	Addiction to online games	Frequency	Percentage %
1	Not addicted	5	2.5
2	Mild addiction	31	15.3
3	Moderate addiction	138	68.3
4	Heavy addiction	28	13.9
<b>Total</b>		<b>202</b>	<b>100</b>

According to the table above, it can be seen that the distribution of respondents based on online game addiction shows that most of the respondents with moderate addiction are 138 students (68.3%), a small proportion with mild addiction are 31 students (15.3%), and a small portion with severe addiction. as many as 28 students (13.9%), not addicted to 5 students (2.5%).

**Table 3:** Characteristics by degree of depression in class XII at SMAN 2 Bangkalan

No	Depression level	Frequency	Percentage %
1	Not depressed	6	3.0
2	Mild depression	157	77.7
3	Moderate depression	34	16.8
4	Severe depression	5	2.5
<b>Total</b>		<b>202</b>	<b>100</b>

According to the table 3, it can be seen that the distribution of respondents based on the level of depression shows that almost all of them have mild depression as many as 157 adolescents (77.7%), a small proportion have moderate depression as many as 34 adolescents (16.8%), severe depression 5 adolescents (2.5%), and 6 adolescents were not depressed (3.0%). The correlation between online game addiction and depression rates in adolescents

**Table 4:** Degree of Depression level of students

Addicted	Depression level							
	Not depressed		Light		Currently	Heavy	Total	
	F	%	F	%	F %	F %	F	%
Not addicted	2	40.0	3	60.0	0 (0%)	0 (0%)	5	100
Light	2	6.4	25	80.6	4(12.9%)	0 (0%)	31	100
Currently	2	1.4	108	78.2	24 (17.3%)	4 (2.8%)	138	100
Heavy	0	0	21	75.0	6 (21.4%)	1 (3.5%)	28	100
Total	6	2.9	157	77.7	34 (16.8%)	5 (2.4%)	202	100
Statistic Test: rank spamman	<i>P-value</i> <		<i>P-value</i>				<i>=0.05</i>	
			<i>=0.017</i>					

Based on the results of SPSS calculations using the Spearman rank test,  $p$  value = 0.017 ( $<0.05$ ) then  $H_0$  is rejected and  $H_1$  is accepted, meaning that there is a significant correlation between online game addiction and depression levels of adolescents in class XII IPA, IPS SMAN 2 Bangkalan.

## DISCUSSION

Based on the result above, it can be seen that the distribution of respondents based on online game addiction shows that most of the respondents or 138 students (68.3%) were in the category of moderate addiction, a small proportion of the respondents or 31 students (15.3%) were in the category mild addiction, 28 students (13.9%) were in the category of severe addiction, and 5 students (2.5%) were in the category of not addicted. Online games are computer games that are played by multiplayer over the internet. It usually provided by the services of online service providers or can be accessed directly from companies that specialize in providing games (Wardhana, 2021b). In playing online games, there are two important devices that must be owned, namely a set of computers with specifications that indicate there is a connection to the internet (Ulfa & Risdayati, 2017). Online game addiction is one type of addiction caused by internet technology or better known as internet addictive disorder. Internet can cause addiction, one of which is computer game addiction (too much playing games) (Wardhana & Ratnasari, 2022). Researchers argue that in this study, most of the students in SMAN 2 Bangkalan class XII experienced moderate addiction. In line with the theory above that addiction is caused by internet technology, many online games are now a game for students who cannot be separated from their lives every day and even experience addiction (Novrialdy, 2019).

Based on the table above, it can be seen that the distribution of respondents shows that almost all of the respondents have mild depression as many as 157 adolescents (77.7%), a small proportion have moderate depression as many as 34 adolescents (16.8%), severe depression 5 adolescents (2.5%),

and 6 adolescents were not depressed (3.0%). Depression is a period of dependent human functioning associated with sad feelings and accompanying symptoms, including changes in sleep and appetite patterns, psychomotor, concentration, anhedonia, fatigue, hopelessness and helplessness, and suicide (Adiningtiyas, 2017). Depression is a mood disorder characterized by a loss of feeling of control and the subjective experience of severe sufferers. Mood is a pervasive internal emotional state of a person and not a type of effect, that is, an expression of the emotional side of the moment (Mafruchati et al., 2022). The researcher argued that in this study almost all of them experienced mild depression; the depression experienced by adolescents in this study was caused by games that were continuously played in their daily lives. These games make children monotonous in their daily lives and lacked interaction (Febriyanti et al., 2022). Depression is experienced when children experience defeats and play without knowing the time, do not have hours of rest, resulting in children having difficulty sleeping and experiencing depression (Lutfiwati, 2018).

Based on the results of the analysis using the Spearman rank test, it was found that  $p$  value = 0.017 ( $<0.05$ ), meant that there was a significant correlation between online game addiction and depression levels of adolescents in class XII IPA, IPS SMAN 2 Bangkalan. Several studies conducted in various countries showed a close correlation between online game addiction and depression (Mafruchati et al., 2022). In research conducted at the University of Bolton in the UK, it was found that students who are addicted to video games have a tendency or risk of suffering from Asperger's Syndrome. From this study also obtained results that

video game addicts are at risk for mental health disorders such as depression (Fauziana et al., 2022). In this study, John Charlton and his colleagues studied 400 game addicts. Then they were asked to fill out a questionnaire (Suplig, 2017). The high frequency of playing games also makes gamers isolated and increases the risk of developing depression. Dr. Michael Brody said that addiction to online games is one of the symptoms of mental disorders such as depression and social anxiety which already has its own diagnostic criteria (Krossbakken et al., 2018). The influence of the game that the students play, unconsciously would be recorded inside their subconscious memory gradually. If what they see in the games were murderous, fighting and war, they would be recorded on what happened inside the game and had a feeling to implement that into reality. It was the source of how games will cause mental and emotional problems in adolescents (Juliansyah et al., 2021). Being addicted to online games would also have a negative impact of academic and social point of view. In students whom the mental was still not developed enough, the mind becomes constantly thinking about the game being played so that they would find it difficult to concentrate on lessons and often skip classes. Online games can make addicts ignorant, indifferent, less concerned about things that happen in the surrounding environment such as family, friends and those closest to them (Loton et al., 2016).

## CONCLUSION

Based on the result, this study revealed that most of the respondents suffered from moderate addiction of online games approximately 138 students (68.3%) and almost all of the respondents were in the category of mild depression as many as 157 students (77.7%). The results of the analysis using the Spearman rank test obtained  $p$  value = 0.017 ( $<0.05$ ) meant there was a significant correlation of games addiction toward depression level of senior high school students.

## SUGGESTION

It is suggested for further study to differ the samples not only consisted students but also the involvement of the teachers. Nowadays teachers of young generation also involved in playing games to relieve their stress. It would be great if further study should also include teachers which also played games as the samples of the study. Further study

also should be more emphasized on the varieties of the games that the samples played to avoid the bias in the result of the study.

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## CONFLICTS OF INTEREST

The authors declare that there is no conflict interest with the topics or any associated objects upon the publication of this research. There were no competing financial interests or personal relationships that could have appeared to influence the work reported in this paper. This study had no involvement from any third parties. This study was also never been published elsewhere and free from any plagiarism.

## AUTHOR CONTRIBUTIONS

Wiwik Widiyawati was role as the first author in the study and became the one who has done supervision of this study, conceptualization, funding acquisition, reviewed and edited the paper. The second author is Helmi Ardiansyah Arby, was the person that collected the data, running software for analysis, and writing the draft. All of the authors positively contribute in the process of the study from the beginning until the end.

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