



## THE EFFECTIVENESS OF PEER EDUCATOR-BASED EDUCATION AS A MODEL FOR HANDLING ONLINE GAME ADDICTION IN ADOLESCENTS DURING THE COVID-19 PANDEMIC

Puji Lestari\*, Liyanovitasari

Nursing Department, Universitas Ngudi Waluyo, Jl. Diponegoro No 186, Gedanganak, Ungaran Timur, Kabupaten Semarang 50512, Indonesia

\*[pujilestari@unw.ac.id](mailto:pujilestari@unw.ac.id)

### ABSTRACT

The Covid-19 pandemic has limited all community activities to leaving the house. This has taken a lot of time for teenagers to use smartphones which has triggered addiction to online games. Increased addiction to online games harms adolescents, including teenagers who become lazy in their activities, are often alone, lack socializing, and become introverted individuals. The adolescent period is a period that is very close to peer groups, requires recognition from groups or peers, and requires a new identity that can increase self-esteem. The purpose of this study was to determine the effectiveness of peer educator-based education as a model for dealing with online game addiction in adolescents. This study employed a quantitative approach. The research design was a quasi-experimental or pre-experimental design with the type of one-group pretest-posttest design. The research respondents were 107 students with the criteria who play online games, used purposive sampling. This study provided video interventions through WhatsApp group media and measuring behavior data using google forms. The instrument used to measure online game addiction behavior was the Game Addiction Scale (GAS) for adolescents developed by Lemmens in 2009. Data analysis used the Wilcoxon test to determine differences in adolescent behavior before and after peer educators were educated about handling online game addiction. The results showed that the behavior of adolescents before treatment was in the online game addiction category 55,1% and it decreased to 11.2% after treatment. There were differences in the behavior of adolescents before and after education by peer educators with each p-value of 0.000.

**Keywords:** adolescent; online game addiction; peer educator

#### First Received

11 August 2021

#### Revised

21 September 2021

#### Accepted

19 November 2021

#### Final Proof Received

19 November 2021

#### Published

23 November 2021

#### How to cite (in APA style)

Lestari, P., & Liyanovitasari, L. (2021). The Effectiveness of Peer Educator-Based Education as A Model for Handling Online Game Addiction in Adolescents During the Covid-19 Pandemic. *Indonesian Journal of Global Health Research*, 3(4), 451-460. <https://doi.org/10.37287/ijghr.v3i4.664>

## INTRODUCTION

Based on International Telecommunication Union (ITU) data, every year there is an increase in the number of internet users. At the end of 2019, the percentage of the world's population using the internet was more than 51% (ITU, 2019). APJII 2018 also shows that the population aged 15-19 years (91%) dominates internet users in Indonesia (APJII, 2018). Online games have developed into very popular electronic entertainment for people all over the world. However, the increasing popularity of online games has in some cases led to addiction (Wang, 2021). The World Health Organization (WHO) published the International Classification of Diseases 11 (ICD-11) document on 18 June 2018. This document is used by health professionals to categorize various diseases and health conditions, one of which is the addiction to online games (6C51 Gaming disorder) (WHO, 2019). In the latest survey released by the Indonesian Internet Service Providers Association (APJII) in 2018, it is estimated that online game players in Indonesia are around 20.6 million people.

The use of the Internet makes everyone feel comfortable accessing anything. In adolescents, in particular, the Internet has become an easily accessible means for entertainment, communication, education, and information retrieval (Dong & Wang, 2013). Nonetheless, addiction has a negative impact and a profound daily functioning both at home and at school. Extensive Internet use can have adverse effects on the psychosocial development of adolescents, which can result in many of them experiencing mental health problems including depression, loneliness, low self-esteem, and anxiety (Xiao, 2017). There is research by Ha et al., (2016) that reveals that addictive online behavior is very similar to alcoholism, substance addiction, and pathological gambling. Internet addiction has emerged as a social and mental health problem among teenagers.

Teenagers use smartphones a lot to play online games. The high intensity of playing online games on smartphones can lead to phubbing behavior (Hanika, 2015). The word phubbing comes from two words, namely phone and snubbing, which means the behavior of keeping busy with a smartphone during conversations with other people (Karadag et al., 2015). Phubbing behavior can lead to adolescence. lack of interaction can eliminate the ability to build relationships and communicate well (Afdal et al., 2019). Online game addiction can have a negative impact or harm on adolescents who experience it. The dangers that will arise due to addiction to online games include indifference to other activities, creating a feeling of uneasiness when not playing games (Jannah et al., 2015), loss of control over time, decreased academic achievement, social, financial, and health relations ( Ghuman & Griffiths, 2012). This will certainly disrupt the growth and development of adolescents. Adolescence is a critical period for addiction vulnerability when compared to adults, adolescents are more likely to adopt excessive Internet use patterns (Tsitsika et al., 2009). Therefore, prevention efforts are needed for the problem of online game addiction. Given the negative impact and also the development of the digital era, it is undeniable that it is very fast.

One of the efforts to prevent addiction to online games is peer support. Social support is needed by adolescents in daily interactions where the impact is likely to vary between cultures and varied family / social contexts (Cankorur, Abas, Berksun, & Stewart, 2015). One of the factors for adolescents experiencing addiction to online games is a lack of social support from parents, friends, and teachers. A cohort study conducted by Chen et al (2017) on the relationship between internet addiction and social support revealed that the lower the social support score the higher the incidence of internet addiction, with less social support a risk factor for adolescent online addiction. The predictive effect of social support on obvious internet addiction (Wu, Cai, & Yin, 2012). Therefore, social support from peers is needed to reduce the level of online game addiction (Brown & Larson, 2009).

The closeness, mutual understanding, and feelings of similarity that are felt between one child and another can be an opportunity for efforts to facilitate adolescent development. On the other hand, some of the psychological characteristics of adolescents (emotional, unstable) are also a challenge for the effectiveness of their services (Suwarjo, 2018). Peer educators enable students to have the skills to implement meaningful experiences of independence and self-control for adolescents. In particular, peer educators do not focus on content evaluation, but rather focus on thought processes, feelings, and decision-making processes (Wahid, 2013). This can be understood because the teenage period is a period that is very close to peer groups, requires recognition from groups or peers, and requires a new identity that can increase self-esteem (Hurlock, 2012). The purpose of this study was to analyze the effectiveness of peer educator-based education on online game addiction behavior in adolescents during the Covid 19 pandemic.

## **METHODS**

This study used a quantitative approach. The research design is a quasi-experimental or pre-experimental design with the type of one-group pretest-posttest design. The research respondents were 107 students aged 13-15 years, used purposive sampling with the criteria being all students of SMPN 1 Ungaran who play online games and complete the questionnaires that were distributed during the pre-test and post-test. This research was approved by Ngudi Waluyo University on number 0040/D/LPPM/UNW/VIII/020. We comply with ethical and administrative agreements from the school administration on number 422/100/2021. We met with the student classroom teachers about this study, and we informed the students who participated as peer counselors and as research respondents about the details of the course of the study and asked for informed written consent if they agreed to participate. After obtaining approval, the data collection stages are then carried out.

The research instrument used to measure online game addiction uses the online game addiction scale developed by Lemmens (2009), namely the Game addiction scale for adolescents (GAS), this scale consists of twenty-one items based on seven aspects. These seven aspects include Saliency (interest), Tolerance (tolerance), Mood Modification, relapse (relapse), Withdrawal (withdrawal), Conflict, Problems. This instrument is a questionnaire consisting of 21 questions divided into seven criteria. A person is said to be addicted to online games if the score is  $\geq$  mean (39.40), and it is said not to be addicted if the score is  $<$ mean (39.40). The assessment given on the Game Addiction Scale for adolescents is in the range of 1 (one) to 5 (five) with the following conditions: the value of 5 to indicate (SS) is very frequent, the value of 4 (S) is often, the value of 3 (KK) is sometimes, value 2 (J) is rare, value 1 (TP) never. This study uses a Likert scale consisting of favorable statements.

First, the researchers conducted training for students who were appointed as peer counselors. Three students were trained and given education related to handling online game addiction. The second stage is making educational videos about online games and handling them for students who act as peer counselors. The third stage is the measurement of online game addiction behavior (pre-test data) carried out through google form because students carry out online learning. Two days after the pre-test data collection, a video intervention was made through the WhatsApp group media, and a discussion session was opened. One week after giving the intervention in the form of an educational video, online game addiction behavior was measured (post-test data) using google form. Analysis of research data used the Wilcoxon test to determine differences in adolescent online game addiction behavior before and after education by peer educators.

## **RESULTS**

The characteristics of the respondents indicated that the average age of the respondents was 13.6 years, and 57% were female.

Table 1.  
The Characteristics of Adolescent (n=107)

Variables	f	%
Age		
Less than 13 years	62	57,9
More than 13 years	45	42,1
Gender		
Male	46	42,9
Female	61	57,1

Table 2.  
The Frequency of Students' Behavior of SMP 1 Ungaran before Peer Educator-Based Education Treatment (n=107)

Behavior	f	%
Addicted	59	55.1
Not Addicted	48	44.9

Table 3.  
The frequency of Students' Behavior of SMP 1 Ungaran after Peer Educator-Based Education Treatment (n=107)

Behavior	f	%
Addicted	12	11.2
Not Addicted	95	88.8

Table 4.  
Analysis of differences in Online Game Addiction Behavior before and after Peer Educator-Based Education (n=107)

Addiction Behavior	Mean	SD	SE	t	p-value
Before	42.07	10.955	1.059	12.872	0.000
After	29.64	6.998	0.677		

Based on Table 2 and Table 3, it is revealed that the addictive behavior of online games before being therapy is 42.07 (addicted to online games) to 29.64 (not experiencing addiction) after being given the action. In table 4, it can be seen that the p-value results are 0.000. It means that there are differences in online game addiction behavior before and after the peer educator-based educational model on handling online game addiction.

Table 5.  
Distribution of Respondents' Answers before Peer Educator-Based Educational Model (n=107)

No	Aspect	Questions	Very Often		Often		Sometimes		Seldom		Never	
			f	%	f	%	f	%	f	%	f	%
1	Salience	I thought about playing games all day long	0	0.00	6	5.61	17	15.89	15	14.02	69	64.49
		I spend free time playing games	1	0.93	11	10.28	30	28.04	24	22.43	41	38.32
		I feel addicted to playing games	1	0.93	8	7.48	14	13.08	16	14.95	68	63.55
2	Tolerance	I played the game longer than planned	2	1.87	11	10.28	18	16.82	23	21.50	53	49.53
		I feel the length of time playing my games is increasing	2	1.87	8	7.48	15	14.02	16	14.95	66	61.68
		I can't stop when I've started playing the game	0	0.00	9	8.41	10	9.35	22	20.56	66	61.68
3	Mood Modification	I play games to forget about real life	4	3.74	1	0.93	12	11.21	11	10.28	79	73.83
		I play games to relieve stress	11	10.28	26	24.30	39	36.45	9	8.41	22	20.56

No	Aspect	Questions	Very Often		Often		Sometimes		Seldom		Never	
			f	%	f	%	f	%	f	%	f	%
4	Relapse	I play games to feel better	5	4.67	20	18.69	27	25.23	21	19.63	74	69.16
		I can't cut down on my game playtime	1	0.93	7	6.54	13	12.15	16	14.95	70	65.42
		Other people can't cut down on my game play time	1	0.93	5	4.67	7	6.54	15	14.02	79	73.83
5	Withdrawal	I failed to reduce my game playtime	1	0.93	6	5.61	14	13.08	14	13.08	72	67.29
		I feel bad when I can't play games	1	0.93	4	3.74	6	5.61	20	18.69	71	66.36
		I get angry when I can't play the game	0	0.00	3	2.80	1	0.93	13	12.15	90	84.11
		I get stressed when I can't play games	0	0.00	1	0.93	3	2.80	12	11.21	91	85.05
6	Conflict	I fight with other people (such as family, or friends) during game time	0	0.00	2	1.87	5	4.67	16	14.95	84	78.50
		I ignore other people when playing games	0	0.00	2	1.87	11	10.28	29	27.10	65	60.75
		I lied about time spent playing games	1	0.93	1	0.93	9	8.41	11	10.28	67	62.62
7	Problem	Playing games reduces my sleep time	1	0.93	6	5.61	6	5.61	21	19.63	73	68.22
		I neglect important activities (such as school, work, and sports) to play games	0	0.00	2	1.87	7	6.54	15	14.02	83	77.57
		I feel bad / bad after playing the game for too long	5	4.67	26	24.30	24	22.43	12	11.21	40	37.38

Table 6.  
Distribution of Respondents' Answers after Being Given Educational Action Based on Peer Educators

No	Aspect	Questions	Very Often		Often		Sometimes		Seldom		Never	
			f	%	f	%	f	%	f	%	f	%
1	Salience	I thought about playing games all day long	5	4.67	10	9.35	28	26.17	32	29.91	32	29.91
		I spend free time playing games	1	0.93	3	2.80	10	9.35	13	12.15	80	74.77
		I feel addicted to playing games	4	3.74	2	1.87	12	11.21	16	14.95	73	68.22
2	Tolerance	I played the game longer than planned	0	0.00	7	6.54	25	23.36	22	20.56	53	49.53
		I feel the length of time playing my games is increasing	0	0.00	5	4.67	15	14.02	17	15.89	70	65.42

No	Aspect	Questions	Very Often		Often		Sometimes		Seldom		Never	
			f	%	f	%	f	%	f	%	f	%
3	Mood Modification	I can't stop when I've started playing the game	0	0.00	4	3.74	16	14.95	18	16.82	69	64.49
		I play games to forget about real life	0	0.00	4	3.74	11	10.28	14	13.08	78	72.90
		I play games to relieve stress	10	9.35	23	21.50	35	32.71	11	10.28	28	26.17
		I play games to feel better	7	6.54	17	15.89	29	27.10	19	17.76	35	32.71
4	Relapse	I can't cut down on my game play time	1	0.93	2	1.87	8	7.48	23	21.50	73	68.22
		Other people can't cut down on my game play time	1	0.93	9	8.41	5	4.67	16	14.95	76	71.03
		I failed to reduce my game play time	0	0.00	4	3.74	15	14.02	29	27.10	59	55.14
5	Withdrawal	I feel bad when I can't play games	1	0.93	3	2.80	12	11.21	13	12.15	78	72.90
		I get angry when I can't play the game	0	0.00	1	0.93	3	2.80	12	11.21	91	85.05
		I get stressed when I can't play games	0	0.00	1	0.93	5	4.67	12	11.21	89	83.18
6	Conflict	I fight with other people (such as family, or friends) during game time	0	0.00	1	0.93	8	7.48	21	19.63	77	71.96
		I ignore other people when playing games	0	0.00	2	1.87	15	14.02	25	23.36	62	57.94
		I lied about time spent playing games	0	0.00	1	0.93	9	8.41	17	15.89	80	74.77
7	Problem	Playing games reduces my sleep time	0	0.00	8	7.48	8	7.48	12	11.21	79	73.83
		I neglect important activities (such as school, work, and sports) to play games	1	0.93	4	3.74	5	4.67	17	15.89	80	74.77
		I feel bad / bad after playing the game for too long	8	7.48	15	14.02	26	24.30	23	21.50	35	32.71

## DISCUSSION

### Students' behavior of SMP 1 Ungaran before peer educator-based education treatment

The results showed that the behavior of adolescents before being given education by peer educators was in the addiction category as much as 55.1%, while those who were not addicted were 44.9%. Teens who are addicted to online games will experience a very strong physical and psychological dependence on online gameplay, and if the desire to play online games is not fulfilled it will cause feelings of punishment or unpleasant feelings for the adolescent concerned. With dependence on online games, the adolescent concerned will get pleasure, comfort, and enjoyment of its own so that the frequency and duration of playing online games will continue to increase from time to time, even making everything uncontrollable, one of which has an impact on antisocial situations (Van, 2011).

### **Students' Behavior of SMP 1 Ungaran before Peer Educator-Based Education Treatment**

The behavior of adolescents after being given education by peer educators showed that 11.2% of adolescents experienced addiction while those who were not addicted were 88.8%. This shows that there is a decrease in the number of adolescents who experience addiction after being given education by peer educators. Social support has a negative relationship with internet addiction, adolescents who are addicted to the internet have lower levels of social support compared to non-addicts (Chen & Hu, 2012). A study by Naseri, Mohamadi, Sayehmiri, & Azizpoor (2015) suggests that social support from friends reduces stress levels in individuals, which can motivate individuals to increase their perceived capacity for self-response. It should be noted that stress in interpersonal and school-related problems are risk factors for online game addiction (Tang et al., 2014).

Therefore, social support from good peers can reduce the prevalence of adolescent online game addiction. Adolescents who are addicted may also have weak social, personal, and familial weaknesses which can lead to social isolation, loneliness, depression, family strife, and academic failure (Naseri et al., 2015). Addicted teens prefer to use online games to get busy and fun while going through difficult times in their life (Wu & Cheng, 2017). Peer social support has a positive impact on adolescents to focus on school performance so they don't just depend on online games. Therefore it is suggested to strengthen ties and positive relationships between adolescents that can prevent addiction to online games in adolescents (Yu & Shek, 2013).

### **Differences in Online Game Addiction Behavior before and after Peer Educator-Based Education**

Based on this research, there were differences in the behavior of adolescents before and after education by peer educators with each p-value of 0.000. Several core components can identify adolescents who are addicted to online games, namely salience, conflict, and euphoria. Additional additions are tolerance, withdrawal, relapse, and reinstatement. These components are common in addiction. Tolerance develops as the need for an addicted person to increase his dependence on the behavior of playing online games to have the same experience as in the early part of the addiction. The withdrawal effect is an unpleasant reaction when he stops his addictive activity. Meanwhile, relapse and reinstatement represent a return to the original state of addiction, even after a period of activity containment. Peer counseling strongly locates communication skills to facilitate self-exploration and decision-making. Peer "counselors" are not professional counselors or therapists. Peer "counselors" are students (caregivers) who assist other students under the guidance of an expert counselor (Griffiths & Kuss, 2012).

Taking into account the importance of the role of peers, the development of a positive peer environment is an effective way that can be taken to support the development of adolescents. Concerning the advantages of adolescents having positive peer groups, positive peer groups enable adolescents to feel accepted, enable adolescents to do catharsis, and enable adolescents to test new values and new perspectives. Affirmation showed that positive peer groups can provide opportunities for youth to help each other and encourage adolescents to develop networks to provide positive encouragement to each other. Peer counseling is counseling conducted by students towards other students. Students who were previously mentors were given training or coaching by a counselor. Students who become mentors function as mentors or tutors who help other students in solving the problems they face, both academic and non-academic. Besides, he also functions as a mediator who helps counselors by providing

information about the conditions, developments, or problems of students who need guidance or counseling assistance services (Suranata, 2013).

## CONCLUSIONS

This study shows that adolescent behavior differs between before and after being given peer educator-based education with a p-value of 0.0001. Adolescents who experienced addiction were 55.1% before being given education by peer educators, this number decreased to 11.2% after being given education by peer educators. This shows the role of peer educators is very important in handling online game addiction behavior in adolescents. Efforts should be made by the school to facilitate the increase in the role of peer counselors to reduce addictive behavior to online games in their students.

## REFERENCES

- Afdal, A., Alizamar, A., Ifdil, I., Ardi, Z., Sukmawati, I., Zikra, Z., Ilyas, A., Fikri, M., Syahputra, Y., & Hariyani, H. (2019). An analysis of phubbing behaviour: Preliminary research from counseling perspective. *Proceeding of 1st International Conference on Educational Sciences and Teacher Profession (ICETeP)*, 270–273. <https://doi.org/10.2991/icetep-18.2019.65>
- APJII (2018), Hasil Survey Nasional Penetrasi Pengguna Internet. APJII (asosiasi Penyelenggara Jasa Internet Indonesia) <https://apjii.or.id/survei2018s/kirimlink>.
- Brown, B. B., & Larson, J. (2009). Peer relationships in adolescence. In R. M. Lerner, & L. Steinberg (Eds.), *Handbook of adolescent psychology* (pp. 74e103). New York: E-Publishing Inc.
- Cankorur, V. S., Abas, M., Berksun, O., & Stewart, R. (2015). Social support and the incidence and persistence of depression between antenatal and postnatal examinations in Turkey: A cohort study. *BMJ Open*, 5(4), 6456.
- Chen, X., Li, F. H., Long, L. L., Zhao, Y., Feng, S. D., & Li, Y. (2007). Prospective study on the relationship between social support and internet addiction. *Chinese Mental Health Journal*, 21(4), 240e243.
- Chen, Y. R., & Hu, J. J. (2012). Relationship between teenagers' internet addiction disorder, parent rearing styles and social support. *China Journal of Health Psychology*, 20(5), 767e768.
- Dong, G., & Wang, J. (2013). Risk Personality traits of internet addiction: Alongitudinal study of internet-addicted Chinese university students. *Asia-Pacific psychiatry*, 5(4), 316-321
- Ghuman, D., & Griffiths, M. D. (2012). A cross-genre study of online gaming: Player demographics, motivation for play and social interactions among players. *International Journal of Cyber Behavior, Psychology and Learning*, 2(1), 13–29.
- Griffiths, M. D. & Kuss, D. J. 2012. Online gaming addiction in children and adolescents: A review of empirical research. *Journal of Behavioral Addictions*, 1(1), 3–22. doi:10.1556/JBA.1.2012.1.1



- Ha, J. H., Yoo, H. J., Cho, I. H., Chin, B., Shin, D., & Kim, J. H. (2006). Psychiatric comorbidity assessed in Korean children and adolescents who screen positive for Internet addiction. *The Journal of Clinical Psychiatry*, 67(5), 821e826.
- Hanika, I. M. (2015). Fenomena phubbing di era milenial (ketergantungan seseorang pada smartphone terhadap lingkungannya). *Interaksi: Jurnal Ilmu Komunikasi*, 4(1), 42–51.
- Hurlock, E.B. (2012). *Psikologi Perkembangan*. terj. Istiwidiyanti dan Soedjarwo. Jakarta: Erlangga.
- Jannah, N., Mudjiran, M., & Nirwana, H. (2015). Hubungan kecanduan game dengan motivasi belajar siswa dan implikasinya terhadap Bimbingan dan Konseling. *Konselor*, 4(4), 200–207. <https://doi.org/10.24036/02015446473-0-00>
- Jiyun Choi a ,Hyunseok Cho a , Seungmin Lee a , Juyeong Kim, Ph.D. candidate b,c, \*, and Eun-Cheol Park, M.D., Ph.D. b (2017). Effect of the Online Game Shutdown Policy on Internet Use, Internet Addiction, and Sleeping Hours in Korean Adolescents
- Karadag, E., Tosuntas, Ş. B., Erzen, E., Duru, P., Bostan, N., Şahin, B. M., Çulha, I., & Babadağ, B. (2015). Determinants of phubbing, which is the sum of many virtual addictions: A structural equation model. *Journal of Behavioral Addictions*, 4(2), 60–74. <https://doi.org/10.1556/2006.4.2015.005>
- Lemmens, J.S., Valkenburg, P.M. & Peter, J. (2009). Development and validation of a game addiction scale for adolescents. *Media Psychology*, 12(1), 77-95.
- Naseri, L., Mohamadi, J., Sayehmiri, K., & Azizpoor, Y. (2015). Perceived social support, self-esteem, and internet addiction among students of Al-Zahra University, Tehran, Iran. *Iranian Journal of Psychiatry and Behavioral Sciences*, 9(3), 421.
- Suranata,Kadek. 2013.“Pengembangan Model Tutor Bimbingan Konseling Sebaya (Peer Counseling) Untuk Mengatasi Masalah Mahasiswa Fakultas Ilmu Pendidikan Undiksha”. *Jurnal Pendidikan Indonesia* Vol. 2, No. 2, Oktober 2013
- Suwarjo.(2018). *Konseling Teman Sebaya (Peer Counseling) untuk Mengembangkan Resiliensi Remaja*.Makalah disajikan dalam Seminar Pengembangan Ilmu Pendidikan Fakultas Ilmu Pendidikan Universitas Negeri Yogyakarta, Yogyakarta, 29 Februari 2008.
- Tang, J., Yu, Y., Du, Y., Ma, Y., Zhang, D., & Wang, J. (2014). Prevalence of internet addiction and its association with stressful life events and psychological symptoms among adolescent internet users. *Addictive Behaviors*, 39(3), 744e747.
- Tsitsika, A., Critselis, E., Kormas, G., Filippopoulou, A., Tounissidou, D., Freskou, A., et al. (2009). Internet use and misuse: A multivariate regression analysis of the predictive factors of internet use among Greek adolescents. *European Journal of Pediatrics*, 168(6), 655e665.
- Van Rooij, A. J. 2011. *Online Video Game Addiction. Exploring a new phenomenon* [PhD Thesis]. Rotterdam, The Netherlands: Erasmus University Rotterdam
- Wahid, LA. 2013. *Konseling Sebaya Bagi Remaja (Tinjauan Teoritis dalam Mengatasi Problematika Remaja Persepektif Bimbingan dan Konseling)*. Al Tazkiah, (Online), 2

(1):16,(<http://ejurnal.iainmataram.ac.id/index.php/tazkiyah/article/download/744/988>)  
diakses tanggal 2 Februari 2020

- Wang, X., Abdelhamid, M., Sanders, G.L. (2021) Exploring the effects of psychological ownership, gaming motivations, and primary/secondary control on online game addiction, *Decision Support Systems*, Volume 144, 113512, ISSN 0167-9236, <https://doi.org/10.1016/j.dss.2021.113512>.
- Wu, C. S., & Cheng, F. F. (2017). Internet cafe addiction of Taiwanese adolescents. *Cyberpsychology & Behavior*, 10(2), 220e225.
- Wu, Y., Cai, J., & Yin, Q. X. (2012). The relationship between life events, social support and internet addiction tendency of college students. *Journal of Campus Life & Mental Health*, 10(6), 385e387
- WHO (World Health Organization). 2018. ICD-11 For Mortality and Morbidity Statistics. <http://id.who.int/icd/entity/1448597234>.
- Yu, L., & Shek, D. T. (2013). Internet addiction in Hong Kong adolescents: A three-year longitudinal study. *Journal of Pediatric and Adolescent Gynecology*, 26(3), 10e17. X.-S. Wu et al. / *Journal of Adolescence* 52 (2016) 103e111 111