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Original Article

Video Game Addiction Among Students During COVID-19 Pandemic Based on Regulatory Focus Theory and Interpersonal Competence

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Abstract

Video game addiction is one of the mental health problems due to the uncontrolled activities in accessing video game platforms. This study aimed to identify the tendencies of video game addiction among Senior High School students based on the aspects of Regulatory Focus Theory and interpersonal competence. It implemented a quantitative descriptive model with a 2 × 2 factorial design. A total of 1046 students participated in the survey. The findings revealed the increasing video game addiction cases among the students during the COVID-19 pandemic. The students with a high promotion focus and a high interpersonal competence as well as those with a low prevention focus and a low interpersonal competence tended to experience video game addiction.

Key Words: COVID-19, interpersonal competence, Regulatory Focus Theory, video game addiction

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Technological development, including internet is inseparable from human life, especially for education, business, communication, and entertainment industry.[1,2] Internet has contributed positive effects to the economic development.[3] Meanwhile, video games have been popular as the entertainment facilities since 1970.[4,5] Video game industry even secured revenue worth USD 145.7 billion in 2019.[6] Owing to the COVID-19 outbreak in 2020, the revenue is predicted to soar again, reaching USD 159 billion.[6,7] The popularity of video games during the pandemic is boosted by the availability of educational features that can foster the students' cognitive development, physical health, and concentration.[6,8–10]

However, the absence of control over the access of video gaming activities may trigger the children's aggressiveness, anxiety, and impulsivity; and lead to the degradation of academic achievements.[11–13] The shift of children's behavior signifies the symptoms of mental health issues due to the video game addiction.[14] The cases of video game addiction should be distinctively and comprehensively regarded based on a number of behavioral factors.[15–17] A number of previous studies identified the video game addiction phenomena based on 3 causing factors, including the external factors, psychological factors, and internal factors.

The external factors are related to the individual interpersonal competence,[18] biopsychosocial aspects,[19] and psychosocial aspects.[4] The psychological factors are related to solitariness,[20,21] depression, and anxiety.[22] Meanwhile, the internal factors are related to self-motivation and gratification,[23] personality,[24,25] decision making, and behavior.[15] Only few studies highlighted how these factors link to each other. Lee et al[21] identified the correlation of solitariness and motivation (regulatory focus) of gamers. A further analysis regarding the correlation of those causing factors is believed to offer more contributions in tackling the issue of video game addiction.

Video game addiction reflects an excessive access to the gaming media during a long duration and within a high frequency. As a long-term impact, the gamers will experience emotional problems and self-identity conflict.[26–29] The first case of video game addiction was reported in 1980, and the case is increasing now.[30,31] A survey conducted to the teenagers aged between 14 and 17 years in Europe even revealed 1.6% cases of

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internet gaming disorder and 5.1% cases of video game addiction.[32] Particularly in Indonesia, more than 10% of Secondary School students experienced video game addiction.[33] The addicted individuals were identified based on a number of causing factors, including salience, tolerance, mood modification, self-withdrawal, relapse, conflicts, and problems.[26,27] During the pandemic, the cases are highly increasing.[34,35] However, there is no specific report of video game addiction among Senior High School students.

Previous studies mentioned a number of factors that caused video game addiction among children.[21,36] With regards to the issue, the Regulatory Focus Theory (RFT) plays a remarkable function as a motivational theory that defines how an individual establishes a self-regulatory system that consists of the promotion focus and prevention focus.[37,38] The RFT mentions that the self-regulatory system further affects an individual's behavioral and decision making system.[39,40] The regulatory focus mechanism is significantly related to the striatum ventral (the part of the brain that coordinates the reward mechanism system) that regulates an individual's motivation to achieve certain goals.[41]

Gamers with a promotion focus tend to expect the achievement of their goals yet ignoring possible consequences.[42,43] In contrast, gamers with a prevention focus tend to be aware, avoid losses, and aim at the final goals.[39,44] The researchers suspected the existence of correlation between the RFT and the tendencies of video game addiction among Senior High School students.

On the basis of the psychosocial perspectives, solitariness is the starting point of video game addiction behavior among the students that make them perceive an alternative for their social interaction fulfilment.[13,36,45] Erikson theory on the individual development mentions social interaction as a necessity for productive self-identity development.[46,47] With regards to the notion, ASEAN countries, especially Indonesia also consider interpersonal competence as part of the individual development.[48–50]

Interpersonal competence is related to the individual abilities in verbally or nonverbally expressing certain feelings, responses, and thoughts based on certain situations.[36,49,51,52] A previous study by Lo et al[53] found out that gamers with a low interpersonal competence tended to play online games for a long time, leading to a low interpersonal relationship in real life. Meanwhile, Milani et al[54] revealed that a low interpersonal competence could also lead to video game addiction. In contrast, Chen et al[55] stated that gamers with a high interpersonal competence were inclined to get involved in accessing video games. The interaction among gamers could significantly motivate them to get stuck together in the activity.[56]

Meanwhile, solitariness may derive from an intermittent motivation of self-protection instead of a low interpersonal competence.[21,45] A perception that posits video games as the alternative means of social interaction may lead to addiction.[20,57]

The current study determined a number of objectives. First, it aimed to represent an attempt to reveal the truth of video game addiction phenomenon among Senior High School students during the pandemic. Second, it was targeted to describe the correlation of promotion focus, high interpersonal competence, and video game addiction among Senior High School students based on certain categories. Third, it aimed to elaborate the correlation of promotion focus, low interpersonal competence, and video game addiction among Senior High School students based on certain categories. Fourth, it reflected an explanation regarding the correlation of prevention focus, high interpersonal competence, and video game addiction among Senior High School students based on certain categories. Fifth, it aimed to describe the correlation of prevention focus, low interpersonal competence, and video game addiction among Senior High School students based on certain categories.

METHOD

The study adopted a quantitative descriptive model through a 2×2 factorial design. A number of Senior High School students in Ngawi District,

Indonesia were involved as the population. The research samples were determined through a cluster random sampling. Meanwhile, the hypotheses were tested through a purposeful random sampling. Before the test, the samples should meet some inclusive and exclusive criteria that were previously defined by the researchers. The inclusive criteria determined that the students must be registered at the 10th or 11th grade at any Senior High School institutions in Ngawi District, Indonesia. Meanwhile, the exclusive criteria consisted of 3 requirements. First, the students should be willing to complete their data through Google Forms. Second, they could be the individuals that possessed a high promotion focus and interpersonal competence. Third, they could be the individuals that possessed a low promotion focus and interpersonal competence. Fourth, they could be the individuals that possessed a high prevention focus and interpersonal competence. Fifth, they could be the individuals that possessed a low prevention focus and interpersonal competence.

The data were collected from August 31 to September 10, 2020 through a survey. It was the sixth month since the first confirmation of positive infection case of COVID-19 in Indonesia.[58] A total of 1046 students participated in the survey, consisting of 400 males and 646 females. Among the participants, a total of 120 students indicated the tendencies of video game addiction, from which the number consisted of 74 males and 46 females.

The study utilized 3 psychological scales as the instruments, which were adapted based on the procedures developed by Lenz et al.[59] The first instrument was the Gaming Addiction Scale with 7 items of analysis designed by Lemmens et al[26] to measure the tendencies of self-reported video game addiction. It consisted of 7 questions, which were respectively marked by a 5-point Likert scale, ranging from never (1) to very often (5). In terms of Cronbach α reliability that should be at least 0.86,[26] the instrument generated the values between 0.68 and 0.82 from the samples taken from Indonesia.[1] The reliability test of the study resulted in Cronbach $\alpha = 0.80$. Meanwhile, the criteria of video game addiction among the students were identified based on the criteria developed by Brunborg et al[60] and Lin and Chen.[61]

The second instrument was the Composite Regulatory Focus Scale developed by Haws et al[62] to measure the self-reported regulatory focus. The instrument consisted of 10 questions, which were, respectively, completed with a 7-point Likert scale, ranging from strongly disagree (1) to strongly agree (7). In terms of reliability, the promotion focus should at least generate Cronbach $\alpha = 0.79$, whereas the prevention focus should at least generate Cronbach $\alpha = 0.74$.[62] As an alternative, the promotion focus should at least generate Cronbach $\alpha = 0.74$, whereas the prevention focus should at least be at Cronbach $\alpha = 0.68$.[63] The study generated Cronbach $\alpha = 0.65$ regarding the promotion focus and Cronbach $\alpha = 0.65$ regarding the prevention focus. The identification of the students' focus was based on the larger values between the promotion focus and prevention focus.

The third instrument was the Interpersonal Competence Questionnaire (ICQ) developed by Buhrmester et al,[52] which was revised in 1992. It consisted of 40 questions completed with a 5-point Likert scale, from very poor (1) to very good (5). Regarding the reliability test, the values of Cronbach α should range from 0.77 (negative statements) to 0.86 (emotional supports and initiatives).[52] As an alternative, the reliability test should generate Cronbach $\alpha = 0.91$.[21] The instrument resulted in Cronbach $\alpha = 0.94$. The students' responses to the survey indicated their interpersonal competence. The data of their responses were collected using Google Sheets. To analyze the hypotheses, the researchers utilized 2-way analysis of variance (ANOVA) through IBM SPSS.

FINDINGS AND DISCUSSION

The first objective of the study aimed to identify the phenomena of video game addiction among Senior High School students in Ngawi District.

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The survey was performed through the distribution of the Google Forms link to the students from August 31 to September 10, 2020. The report of the students' tendencies of video game addiction is presented in Table 1.

Around 11.5% of the students experienced video game addiction during the COVID-19 pandemic. The number signified an increase by 1.35% compared with the period before the pandemic.[33,58] Other national surveys initiated by a number of Asian countries even reported the increasing cases of video game addiction from 10% to 15%.[64] The findings were similar to the cases in China and the United Kingdom during the pandemic.[7,35]

TABLE 1. Respondent Description

Variable	*F*	*M*	SD	%
Video game survey total	1046	11,348	4.250	100
Age 14-19 y old	1046	15,943	0.715	100
Sex				
Male	400			
Female	646			
Regulatory focus	1046	53,258	6.448	100
Promotion focus	728			
Prevention focus	318			
Interpersonal competence	1046	126,481	18.535	100
High	678			
Low	368			
Video game addiction	120	18,966	3.116	11.5
Age 15-19 y old	120	16,333	0.732	11.5
Sex				
Male	74			
Female	46			
Regulatory focus	120	5094	6.726	11.5
Promotion focus	82			
Prevention focus	38			
Interpersonal competence	120	121,96	19.033	11.5
High	66			
Low	54			

The increasing cases were related to the implementation of social restrictions and regional lockdown policies. The condition reflected that video gaming appeared as an alternative activity during the pandemic.[65,66] The implementation of the policies became an excuse for gamers to get themselves more frequently involved in more gaming activities.[34]

The study also identified the video game addiction phenomenon among Senior High School students with various categories of addiction, ranging from getting involved to getting addicted. The categorization was made based on the regulatory focus and interpersonal competence. The details of the results of the 2-way ANOVA are given in Table 2.

It revealed that the regulatory focus did not affect the tendencies of video game addiction, resulting in a significance value of 0.885. The interpersonal competence did not influence the tendencies either, in which the analysis generated a significance value of 0.915. The findings were similar with the previous study.[21] The study, however, proved that both of the regulatory focus and interpersonal competence jointly did not affect the tendencies of video game addiction among the Senior High School students in Ngawi District with the significance value of 0.947.[21] The correlation between the tendencies of video game addiction, regulatory focus, and interpersonal competence is presented in Figure 1.

On the basis of the analysis, the students with a high promotion focus and a high interpersonal competence as well as the students with a low prevention focus and a low interpersonal competence indicated the tendencies of video game addiction. However, the students with a low promotion focus and a low interpersonal competence as well as the students with a high prevention focus and a high interpersonal competence did not show addiction of video gaming activities.

On the basis of the findings, the students that received positive responses regarding their promotion focus tended to get themselves more

TABLE 2. The Results of 2-way ANOVA Analysis on Students' Video Game Addiction Viewed From: Regulatory Focus and Interpersonal Competence

Dependent Variable: Video Game Addiction

Source	*df*	*F*	Significance
Corrected model	3	0.122	0.947
Intercept	1	3729.259	0.000
Regulatory focus	1	0.021	0.885
Interpersonal competence	1	0.012	0.915
Regulatory focus × interpersonal competence	1	0.313	0.577
Error	116		
Total	120		
Corrected total	119		

ANOVA indicates analysis of variance.

frequently involved in video gaming.[43] They were motivated to gain achievements, level ups, and interpersonal relationships.[42,67,68] Meanwhile, the students with a high promotion focus and a high interpersonal competence were involved in video gaming to maintain their social relations in real life.

Students that received negative responses regarding their behavioral prevention focus tended to more frequently get involved in video gaming, as an attempt to avoid greater losses.[42] Meanwhile, their low prevention focus and low interpersonal competence led them to spend more time in video gaming to fulfill their needs of social interaction.[21] To sum up, the intermittent involvement in video gaming resulted in video game addiction.[24,69–71]

The findings of the study have provided additional remarks that the tendencies of video game addiction among Senior High School students were influenced neither by the regulatory focus mechanism nor interpersonal competence. Apart from its advantages, the study has a number of limitations, including the small number of samples and the unavailable categorization of video game types (online and offline). Further studies are expected to review

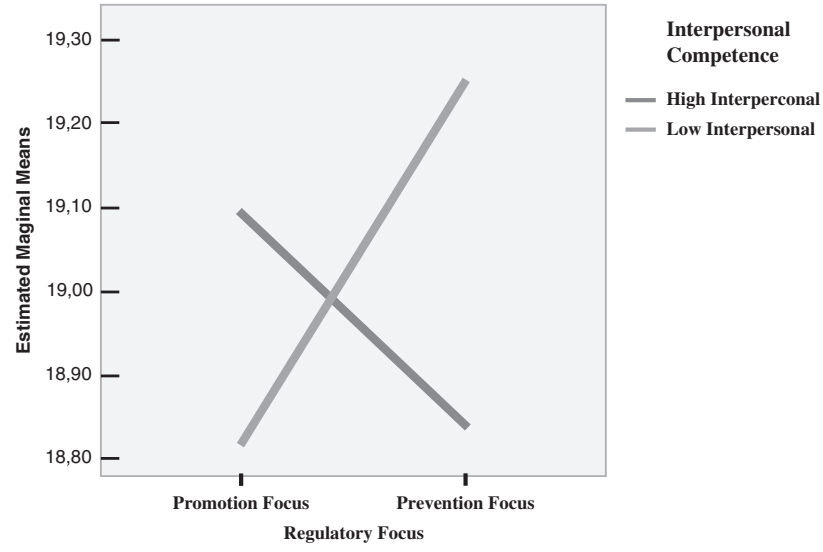

FIGURE 1. Estimated marginal means of video game addiction.

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other variables that might be related to the tendencies of video game addiction among Senior High School students.

CONCLUSIONS

The survey highlighted the increasing cases of video game addiction among Senior High School students during the COVID-19 pandemic. The 2-way ANOVA revealed that the video game addiction phenomenon among the students was affected neither by the regulatory focus nor interpersonal competence. The students with a high promotion focus and a high interpersonal competence as well as the students with a low prevention focus and a low interpersonal competence tended to show certain symptoms of video game addiction. The findings provided a basis to design a relevant counseling service, as an attempt to reduce video game addiction among Senior High School students. For further studies, the researchers suggest the involvement of a larger number of samples with the consideration of other variables related to the tendencies of video game addiction among Senior High School students.

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REFERENCES

1. Ulkhaq MM, Rozaq R, Ramadhani R, et al. Validity and reliability assessment of the game addiction scale: an empirical finding from Indonesia. *ACM Int Conf Proc Ser*. 2018:120–124.
2. Wibowo ME, Mulawarman M, Purwanto E. Problematic internet use in semarang middle school students. *KnE Soc Sci*. 2019;2019:461–469.
3. Hu E, Stavropoulos V, Anderson A, et al. Internet gaming disorder: feeling the flow of social games. *Addict Behav Rep*. 2019;9:100140.
4. Cheng C, Cheung MWL, Wang Hy. Multinational comparison of internet gaming disorder and psychosocial problems versus well-being: meta-analysis of 20 countries. *Comput Hum Behav*. 2018;88:153–167.
5. Stavropoulos V, Adams BLMM, Beard CL, et al. Associations between attention deficit hyperactivity and internet gaming disorder symptoms: is there consistency across types of symptoms, gender and countries? *Addict Behav Rep*. 2019;9:100158.
6. Wijman T. 2020 Global Games Market Report. 2020. Available at: https://platform.newzoo.com/reports. Accessed June 25, 2020.
7. Nicola M, Alsafi Z, Sohrabi C, et al. The socio-economic implications of the coronavirus pandemic (COVID-19): a review. *Int J Surg*. 2020;78:185–193.
8. Martinovic D, Burgess GH, Pomerleau CM, et al. Computer games that exercise cognitive skills: what makes them engaging for children? *Comput Hum Behav*. 2016;60:451–462.
9. Williams WM, Ayres CG. Can active video games improve physical activity in adolescents? A review of RCT. *Int J Environ Res Public Health*. 2020;17:669.
10. García-Redondo P, García T, Areces D, et al. Serious games and their effect improving attention in students with learning disabilities. *Int J Enviro Res Public Health*. 2019;16:1–12.
11. Hui BPH, Wu AMS, Siu NYF, et al. The effects of need satisfaction and dissatisfaction on flourishing among young chinese gamers: the mediating role of internet gaming disorder. *Int J Environ Res Public Health*. 2019;16:1–14.
12. Kim K, Kim K. Internet game addiction, parental attachment, and parenting of adolescents in South Korea. *J Child Adolesc Subst Abus*. 2015;24:366–371.
13. Simcharoen S, Pinyopornpanish M, Haoprom P, et al. Prevalence, associated factors and impact of loneliness and interpersonal problems on internet addiction: a study in Chiang Mai medical students. *Asian J Psychiatr*. 2018;31:2–7.
14. Stockdale L, Coyne SM. Video game addiction in emerging adulthood: cross-sectional evidence of pathology in video game addicts as compared to matched healthy controls. *J Affect Disord*. 2018;225:265–272.
15. Paulus FW, Ohmann S, von Gontard A, et al. Internet gaming disorder in children and adolescents: a systematic review. *Dev Med Child Neurol*. 2018;60:645–659.
16. Zajac K, Ginley MK, Chang R. Treatments of internet gaming disorder: a systematic review of the evidence. *Exp Rev Neurother*. 2020;20:85–93.
17. Zajac K, Ginley MK, Chang R, et al. Treatments for internet gaming disorder and internet addiction: a systematic review. *Psychol Addict Behav*. 2017;31:979–994.
18. Mihara S, Higuchi S. Cross-sectional and longitudinal epidemiological studies of Internet gaming disorder: a systematic review of the literature. *Psychiatry Clin Neurosci*. 2017;71:425–444.
19. Sugaya N, Shirasaka T, Takahashi K, et al. Bio-psychosocial factors of children and adolescents with internet gaming disorder: a systematic review. *Biopsychosoc Med*. 2019;13:1–16.
20. Kim EY, Cho I, Kim EJ. Structural equation model of smartphone addiction based on adult attachment theory: mediating effects of loneliness and depression. *Asian Nurs Res (Korean Soc Nurs Sci)*. 2017;11:92–97.
21. Lee J, Ko DW, Lee H. Loneliness, regulatory focus, inter-personal competence, and online game addiction: a moderated mediation model. *Internet Res*. 2019;29:381–394.
22. Wang JL, Sheng JR, Wang HZ. The association between mobile game addiction and depression, social anxiety, and loneliness. *Front Public Heal*. 2019;7:5–10.
23. Huang CL, Yang SC, Chen AS. Motivations and gratification in an online game: relationships

among players' self-esteem, self-concept, and interpersonal relationships. *Soc Behav Pers*. 2015;43:193–204.

24. Şalvarlı Şİ, Griffiths MD. Internet gaming disorder and its associated personality traits: a systematic review using PRISMA guidelines. *Int J Ment Health Addict*. 2019. doi: 10.1007/s11469-019-00081-6.
25. Yeung CTY, Chui RCF. A study on the impact of involvement in violent online game and self-control on Hong Kong young adults' psychological well-being. *New Media Educ Chang*. 2018:165–174.
26. Lemmens JS, Valkenburg PM, Peter J. Development and validation of a game addiction scale for adolescents. *Media Psychol*. 2009;12:77–95.
27. Griffiths M. Online video gaming: what should educational psychologists know? *Educ Psychol Pract*. 2010;26:35–40.
28. Adiningtiyas SW. Peran guru dalam mengatasi kecanduan game online. *J Kopasta*. 2017;4:28–40.
29. Dailey SL, Howard K, Ceballos N, et al. A biopsychosocial approach to understanding social media addiction. *Hum Behav Emerg Technol*. 2020:1–10. doi: 10.1002/hbe2.182.
30. Griffiths MD, Kuss DJ, King DL. Video game addiction: past, present and future. *Curr Psychiatry Rev*. 2012;8:308–318.
31. Soper WB, Miller MJ. Junk-time junkies: an emerging addiction among students. *Sch Couns*. 1983;31:40–43.
32. Müller KW, Janikian M, Dreier M, et al. Regular gaming behaviour and internet gaming disorder in European adolescents: results from a cross-national representative survey of prevalence, predictors, and psychopathological correlates. *Eur Child Adolesc Psychiatry*. 2015;24:565–574.
33. Jap T, Tiatri S, Jaya ES, et al. The development of Indonesian online game addiction questionnaire. *PLoS One*. 2013;8:4–9.
34. Amin KP, Griffiths MD, Dsouza DD. Online gaming during the COVID-19 pandemic in India: strategies for work-life balance. *Int J Ment Health Addict*. 2020. doi: 10.1007/s11469-020-00358-1.
35. Sun Y, Li Y, Bao Y, et al. Brief report: increased addictive internet and substance use behaviour during the COVID-19 pandemic in China. *Am J Addict*. 2020;29:268–270.
36. Bhagat S, Jeong EJ, Kim DJ. The role of individuals' need for online social interactions and interpersonal incompetence in digital game addiction. *Int J Hum Comput Interact*. 2019;36:1–15.
37. Crowe E, Higgins ET. Regulatory focus and strategic inclinations: promotion and prevention in decision-making. *Organ Behav Hum Decis Process*. 1997;69:117–132.
38. Higgins ET. Beyond pleasure and pain. *Am Psychol*. 1997;52:1280–1300.
39. Debanne T, Angel V, Fontayne P. Decision-making during games by professional handball coaches using regulatory focus theory. *J Appl Sport Psychol*. 2014;26:111–124.
40. Higgins ET, Nakkawita E, Cornwell JFM. Beyond outcomes: how regulatory focus motivates consumer goal pursuit processes. *Consum Psychol Rev*. 2019:1–15. doi: 10.1002/arcp.1052.
41. Scult MA, Knodt AR, Hanson JL, et al. Individual differences in regulatory focus predict neural response to reward. *Soc Neurosci*. 2017;12:419–429.
42. Guo T, Spina R. Regulatory focus affects predictions of the future. *Pers Soc Psychol Bull*. 2015;41:214–223.
43. Lee YH, Heeter C, Magerko B, et al. Feeling right about how you play: the effects of regulatory fit in games for learning. *Games Cult*. 2013;8:238–258.
44. Fuglestad PT, Rothman AJ, Jeffery RW. The effects of regulatory focus on responding to and avoiding slips in a longitudinal study of smoking cessation. *Basic Appl Soc Psych*. 2013;35:426–435.
45. İskender M. Investigation of the effects of social self-confidence, social loneliness and family emotional loneliness variables on internet addiction. *Malaysian Online J Educ Technol*. 2018;6:1–10.
46. Wallerstein RS. Erik Erikson and his problematic identity. *J Am Psychoanal Assoc*. 2014;62:657–675.
47. Batra S. The psychosocial development of children: implications for education and society—Erik Erikson in context. *Contemp Educ Dialogue*. 2013;10:249–278.
48. Lee C, Kim O. Predictors of online game addiction among Korean adolescents. *Addict Res Theory*. 2016;25:58–66.
49. Sari YN. The urgency of developing trust and interpersonal communication skills of students through role playing. *Konselor*. 2018;7:89–94.
50. Schwandt TA. Acting together in determining value: a professional ethical responsibility of evaluators. *Evaluation*. 2018;24:306–317.
51. Agustiyana T, Awalya A. Meningkatkan kemampuan komunikasi interpersonal siswa melalui layanan penguasaan konten dengan teknik sosiodrama. [Improve students' interpersonal communication skills through content mastery services with sociodrama techniques]. *Indones J Guid Couns Theory Appl*. 2016;5. doi: 10.15294/IJGC.V4I4.8831.
52. Buhrmester D, Furman W, Wittenberg MT, et al. Five domains of interpersonal competence in peer relationships. *J Pers Soc Psychol*. 1988;55:991–1008.
53. Lo SK, Wang CC, Fang W. Physical interpersonal relationships and social anxiety among online game players. *Cyberpsychol Behav*. 2005;8:15–20.
54. Milani L, La Torre G, Fiore M, et al. Internet gaming addiction in adolescence: risk factors and maladjustment correlates. *Int J Ment Health Addict*. 2018;16:888–904.
55. Chen L, Liu R, Zeng H, et al. Predicting the time spent playing computer and mobile games among medical undergraduate students using interpersonal relations and social cognitive theory: a cross-sectional survey in Chongqing, China. *Int J Environ Res Public Health*. 2018;15:1–13.
56. Hussain Z, Griffiths MD, Baguley T. Online gaming addiction: classification, prediction and associated risk factors. *Addict Res Theory*. 2012;5:359–371.
57. Ziliang W, Yanbo H, Hui Z, et al. Females are more vulnerable to internet gaming disorder than males : evidence from cortical thickness abnormalities. *Psychiatry Res Neuroimaging*. 2019;283:145–153.
58. Detik.com. Kapan sebenarnya corona pertama kali masuk RI? News.Detik.Com. 2020. Available at: https://news.detik.com/berita/d-4991485/kapan-sebenarnya-corona-pertama-kali-masuk-ri. Accessed September 17, 2020.
59. Lenz AS, Soler IG, Dell'Aquilla J, et al. Translation and cross-cultural adaptation of assessments for use in counseling research. *Meas Eval Couns Dev*. 2017;50:224–231.
60. Brunborg GS, Hanss D, Mentzoni RA, et al. Core and peripheral criteria of video game addiction in the game addiction scale for adolescents. *Cyberpsychol Behav Soc Netw*. 2015;18:280–285.
61. Lin CH, Chen M. The icon matters: how design instability affects download intention of mobile apps under prevention and promotion motivations. *Electron Commer Res*. 2019;19:211–229.
62. Haws KL, Dholakia UM, Bearden WO. An assessment of chronic regulatory focus measures. *J Mark Res*. 2010;47:967–982.

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63. Naletelich K, Spears N. Analogical reasoning and regulatory focus: using the creative process to enhance consumer-brand outcomes within a co-creation context. *Eur J Mark*. 2020;54:1355–1381.
64. Saunders JB, Hao W, Long J, et al. Gaming disorder: its delineation as an important condition for diagnosis, management, and prevention. *J Behav Addict*. 2017;6:271–279.
65. Marston HR, Kowert R. What role can videogames play in the COVID-19 pandemic? *Emerald Open Res*. 2020;2:34.
66. Király O, Potenza MN, Stein DJ, et al. Preventing problematic internet use during the COVID-19 pandemic: consensus guidance. *Compr Psychiatry*. 2020; 100:1–4.
67. Zhong ZJ, Yao MZ. Gaming motivations, avatar-self identification and symptoms of online game addiction. *Asian J Commun*. 2013;23:555–573.
68. Yee N. Motivations for play in online games. *Cyber Psychology Behav*. 2006;9:772–775.
69. King DL, Delfabbro PH. Clinical psychology review the cognitive psychology of internet gaming disorder. *Clin Psychol Rev*. 2014;34:298–308.
70. Lam LT. Internet gaming addiction, problematic use of the internet, and sleep problems: a systematic review. *Curr Psychiatry Rep*. 2014;16:1–9.
71. Van Rooij AJ, Schoenmakers TM, Vermulst AA, et al. Online video game addiction: identification of addicted adolescent gamers. *Addiction*. 2011;106: 205–212.