Self-regulation and tendency of smartphone addiction among college students

JURNAL ILMIAH PSIKOLOGI TERAPAN
p-ISSN 2301-8267; e-ISSN 2540-8291
ejournal.umm.ac.id/index.php/jipt
2024, Vol 12(1):33–38
DOI:10.22219/jipt.v12i1.28638

Muhammad Ridho Sukmo Wibowo[1], Fatin Rohmah Nur Wahidah[1*], and Hilda Meriyandah Agil[2]

Abstract

Nowadays, students have become inseparable from smartphones. A smartphone's purpose should primarily be to serve as an educational tool. However, it is discovered that its primary application is for social media, which can lead to addiction to smartphones. Effective self-regulation can serve as a firm foundation for individuals to utilize a smartphone in a disciplined and appropriate manner. This study aimed to empirically investigate the impact of self-regulation on the propensity of students to develop smartphone addiction. This study employed a quantitative methodology, namely simple linear regression analysis. The sampling technique employed was purposive sampling, with a total sample size of 155 students. The measurement method used a smartphone addiction tendency scale (α = 0.849) and a self-regulation scale (α = 0.861). The findings of this study indicate that self-regulation has a significant impact on the propensity to develop smartphone addiction (β = -0.263; p$<$0.05). As a result, self-regulation has the potential to mitigate the inclination towards smartphone addiction. The provided funding can be utilized as empirical evidence for assessing the impact of self-regulation on the susceptibility to smartphone addiction.

Keywords

Self-regulation, smartphone addiction tendency, students.

Introduction

Presently, the progress of technology is becoming more sophisticated and indispensable for individuals, particularly students. Students are those who are currently pursuing education and are officially enrolled in an educational institution, which can be a public or private postsecondary institution such as universities, high schools, polytechnics, academies, or other educational establishments (Tumuwe et al., 2018). The utilisation of smartphones by students has become a commonplace and essential requirement. Google conducted a poll in the first quarter of 2013 among 500 Indonesian residents, aged 18 to 54, who use smartphones to access the internet. The findings indicate that 74% of smartphone users reside in urban areas, whereas 6% reside in rural areas. Approximately 49% of smartphone users own a bachelor's degree, while 4% hold a higher education degree (Saputri & Pranata, 2014). Almost every student has a smartphone, and they tend not to be able to leave it. With all their features and functions, smartphones can be considered portable computers that can be used anytime and anywhere (Backer, 2010). Students hold that the advantages of features available on smartphones can help lectures effectively and efficiently, including gaining general knowledge and infinite information (Daeng et al., 2017).

The use of smartphones can be a positive thing that is used as a tool to facilitate the learning process. When students are allowed to use cell phones as learning aids, it can improve academic achievement and benefit the educational environment (Tessier, 2013). For example, if students maximize the functions and features of the application in a smartphone, it will help them learn English (Syakir & Suhendar, 2021). Some applications provide students with the ability to learn English, such as English idioms, dictionaries and English grammar (Barakati, 2013), translating material into Indonesian (Maulida, 2017), making it easier for students to understand English language material and improve their English skills.

On the other hand, excessive and incorrect use of smartphones has the potential to result in the effects of addiction to the person of someone which ultimately results in unfavourable deviant behaviour (Islamy, 2021). The inclusion of social media functionalities on smartphones leads to students devoting extensive amounts of time to engaging with social media platforms, rather than utilising their cell phones as educational tools. Put simply, utilising smartphones for educational purposes, within realistic boundaries, tends to yield a favourable influence on the process of acquiring knowledge. Nevertheless, excessive and unregulated smartphone usage just for entertainment purposes might have detrimental effects and potentially lead to smartphone addiction.

According to Aljomaa (2016), smartphones that exceed 4 hours a day can cause someone to be addicted to smartphones.

[1] Faculty of Psychology, Universitas of Muhammadiyah Purwokerto, Indonesia.
[2] International Community Care and Lifespan Development: Empowerment Sciences Faculty of Medicine, University of Tsukuba, Japan.

***Corresponding author:**
Fatin Rohmah Nur Wahidah, Faculty of Psychology, Universitas of Muhammadiyah Purwokerto, Jl. Raya Dukuh Waluh, 53182, Purwokerto, Jawa Tengah, Indonesia.
Email: fatinrohmahwahidah@ump.ac.id

Another opinion of Young explains that those addicted to the internet use the Internet 40 to 80 hours every week (Young, 1998). However, that person is not always an addict. According to Yan (2015), people who are addicted to smartphones often busy themselves all the time with a smartphone, cannot stop using it, and find it difficult to reduce or stop using it at all. In fact, not infrequently, they use smartphones to escape from problems or improve their moods, such as feelings of loneliness, isolation, anxiety, and sadness.

Kwon et al. (2013) explained six aspects of smartphone addiction. First, daily life disturbance, The situation when a person cannot do daily activities in general, even difficulty concentrating. Second, positive anticipation is someone who has a feeling of enthusiasm using a smartphone, even holds that a smartphone can be a stress medicine, and he will feel anxious when not using a smartphone. The third is withdrawal. He does not want to be disturbed when using a smartphone, the use of the old smartphone, and anxiety appears if he does not use it. Fourth is cyberspace-oriented relationships. Suppose someone prefers to make friends in cyberspace than in the real world. Fifth, Overuse is someone who uses a smartphone for a long time. Sixth is tolerance, someone who consistently fails to control themselves when using a smartphone.

Based on a survey of 40 students in Purwokerto, around 70% claimed to use a smartphone for more than 5 hours a day or even more than 7 hours when there was no busyness. Most of them use smartphones because they are too lazy to do other activities, tend to have no activities or busyness and look for entertainment through social media (Instagram, TikTok, YouTube, Podcast, Twitter). They prefer social media when asked to read books or social media to increase knowledge. According to them, it will be more profitable for students to use smartphones. When compared, using smartphones is more to play social media than find learning material. In addition, they said that they felt happy and had difficulty taking off their smartphones, even feeling anxious when travelling and did not carry a smartphone. The desire to be close to smartphones continuously is their distraction while doing tasks, which is delaying them from finishing their tasks.

With the great convenience of accessing all information through a smartphone, someone is more vulnerable to becoming addicted to smartphones (Cha & Seo, 2018). Exciting features that are used on smartphones can also increase someone's use of smartphones, resulting in addiction or dependence (Ferianti & Sunawan, 2021). Addiction to smartphones can cause problems such as difficulties in carrying out daily activities, disruption of self-control, and withdrawal from the social environment (Kwon et al., 2013; Park & Lee, 2012). The existence of addiction to social media is a psychological disorder in which users spend much time accessing social media due to high curiosity, lack of self-control, and lack of productive activities in their lives (Lestary & Winingsih, 2020). Furthermore, dependence on smartphones causes a feeling of always wanting to be close, unable to escape, and wanting to use a smartphone anytime. This results in disruption of daily activities, impulse control disorders (Taufik et al., 2020), preferring to communicate in cyberspace over the surrounding environment, withdrawal from the social environment (Warisyah, 2015), and there are feelings of anxiety and stress when far from a smartphone (Parasuraman et al., 2017).

Self-regulation is one of the abilities of a person who can be a fortress to use a smartphone in controlled and good ways (Azizah, 2021). Self-regulation has an essential relationship in a person related to smartphone addiction (Gökçearslan et al., 2016). Someone who has a low level of self-regulation tends to increase the risk of smartphone addiction (Van Deursen et al., 2015). Albert Bandura was the first person to propose this concept of self-regulation in the context of social cognitive theory. According to Bandura, self-regulation is the capacity of a person to mobilize his efforts in controlling himself to be by the goals they have (Bandura, 1986). Miller & Brown (1991) also explain self-regulation as the ability of a person to manage his behaviour to achieve the goals that have been determined by including cognitive, emotional, physical and social elements, with five dimensions of self-regulation: attainment, mindfulness, adjustment, proactiveness, and goal settings (Chen & Lin, 2018).

Self-regulation is the process everyone goes through to regulate and improve themselves, set goals, and then evaluate their success in achieving them (Manab, 2016). In carrying out self-regulation, Miller & Brown (1991) explain the stages of self-regulation to someone. The first is receiving, someone gets information/problems from all sources; through this information, he knows and analyzes information/problems received to remain on the planned goals. The second is evaluating, i.e., someone evaluates the information/problems received, both internally and externally. The third is triggering. If someone reacts to take action when receiving adverse information/problems or not by a predetermined purpose, then he can switch or change in the right direction. Fourth is searching. Someone is looking for solutions to the problems encountered in order to remain on the goals that have been set. Fifth, formulating. Someone formulates and plans alternative solutions that make it possible to achieve goals, for example, activities to be by their goals, time division, and places that support achieving their goals. Sixth, implementing. Someone applies action by the plan that has been made in order to achieve the specified goals. Seventh, Assessing. Someone conducts an assessment of the business that has been done and evaluates the final results of what happens as expected or not (Miller & Brown, 1991).

Students with good self-regulation are expected to be able to control themselves to achieve predetermined goals. In terms of smartphone use, it is also estimated that the tendency of smartphone addiction is low. Conversely, the presence of low self-regulation causes the tendency of smartphone addiction to increase. Research conducted in Prapatan Balikpapan Village showed that adolescents who have low self-regulation tend to be addicted to high smartphones (Ferdiani & Sudewo, 2019). Another study on 211 students in Hong Kong confirmed that self-regulation reduced the tendency to use smartphones excessively (Kwan & Leung, 2017). The research findings by Gökçearslan et al. (2016) on 598 Ankara Turkish University students showed that the duration of smartphone use positively affected smartphone addiction. The self-regulation of smartphone addiction shows a significant adverse effect (Gökçearslan et al., 2016). A study from Azizah (2021) also shows that the higher the level of self-regulation and student time management, the lower the level of smartphone addiction. Other studies conducted on 215 students who took secondary schools in Sardinia, Italy,

explained that self-regulation can affect students' quality of life. Still, their roles vary according to the level of smartphone addiction (Mascia et al., 2020). Based on the explanation explained, the researcher was also interested in testing the effect of self-regulation on the tendency of smartphone addiction in students in Indonesia. This research hypothesis is the influence of self-regulation on the tendency of smartphone addiction among students.

Method

Participants

The samples in the current research were college students in Indonesia sample determination using a purposive sampling technique. The inclusion criterias were active status as students, male or female sex, and use smartphones for a minimum of 4 hours, in addition to learning activities. Data collecting was carried out through the distribution of both online and offline questionnaires. Following the sampling process, a total of 159 students expressed their willingness to participate. However, only 155 of them fulfilled the necessary criteria, while the remaining four were excluded due to their failure to reach the minimal smartphone usage requirements.

Research Instruments

The scale of smartphone addiction was used to measure the level of addiction to the smartphone. It has ten items based on aspects of the tendency of smartphone addiction, namely Daily Life Disturbance, Positive Anticipation, Withdrawal, Cyberspace Relationship, Overuse and Tolerance (Kwon et al., 2013) and adapted into Indonesian with the forward translation method. Example of item: "My job is constrained by spending time with a smartphone". This instrument has five choice answers, ranging from strongly disagreeing to agreeing strongly. In this study, the α cronbach reliability coefficient was 0.849, so it was said to be reliable in measuring the tendency of smartphone addiction.

The scale of self-regulation measures the level of self-regulation of participants. It was adapted into Indonesian by the forward translation method from a scale by Chen & Lin (2018) based on the dimensions of goal attainment, mindfulness, adjustment, proactiveness and goal setting. The scale consists of 22 items, for example: "When I try to change something, I pay attention to what I do", with five choice answers, strongly disagree to agree strongly. In this study, there are three items whose discrimination power is low (R $<$0.25) and is negative, so it is deleted, namely item "When I try to change something, I pay attention to what I do", "I can consistently follow the plan that runs well", and "I usually find different possibilities when changing something". After the remaining 19 items, the coefficient of reliability α Cronbach is 0.861, so it can be said that this scale reliably measures self-regulation.

Data Analysis Technique

The research methodology employed in this study was a quantitative technique aimed at examining the impact of self-regulation on the propensity of smartphone loss among students. The Jamovi application tool was utilized to perform data analysis and data processing. This involved describing the demographic data of the participants, as well as determining the mean value of self-addiction and the tendency of smartphone addiction. Additionally, the relationship between demographic data and both variables was examined using Pearson Correlation. Furthermore, the impact of regulations on the tendency of smartphone addiction was assessed through simple linear regression analysis. Prior to doing the data analysis, it was additionally verified that the data exhibited normal and linear distribution by an assumption test. The Smirnov Kolmogorov test indicates that the residual values of the data conform to the normality assumptions for each variable (p$>$ 0.05), with a significant value of 0.071 for self-regulation and 0.200 for the tendency of smartphone addiction. The linearity test findings indicated a significance value of 0.218 (p$>$ 0.05), suggesting that both variables can be deemed linear.

Table 1. Demographic Data (n=155)

Variables	n	%
Sex		
Male	46	29.70
Female	109	70.30
Age		
18	9	5.80
19	21	13.50
20	33	21.80
21	49	31.60
22	30	19.40
23 or more than	13	7.90
Semester		
2	10	6.50
4	42	27.10
6	37	23.90
8	64	41.30
10	2	1.30
The duration of smartphone use		
5-6 hours	39	25.20
$>$7 hours	116	74.80

Result

Table 1 explains the demographic data of students who participated in this study (n = 155). Table 1 shows that most participants were female students, 21 years old, are at level 4 or semester 8, and primarily use smartphones for more than 7 hours. Next, from the descriptive data analysis, the mean of the tendency of smartphone addiction was 32.7 with a standard deviation of 7.40. A mean of 66.7 with a standard deviation of 9.10 was obtained in self-regulation. Then, a correlation test between demographic data and the two variables is carried out; the results are explained in Table 2.

Regarding Table 2, there was a significant positive relationship between the tendency of smartphone addiction and the duration of smartphone use (r = 0.302; p $<$0.05). The higher the duration, the more they tend to be addicted. There was also a significant negative correlation between the tendency of smartphone addiction and self-regulation (r = -0.323; p $<$0.05). The lower the self-regulation, the higher the tendency of addiction. Age and positive self-regulation also correlate significantly (r = 0.165; p $<$0.05). The older we get, the higher the level of regulation.

Table 2. Correlation Test Matrix

Variable	1.00	2.00	3.00	4.00	5.00
Age	-				
Semester	0.05***	-	0.07	0.13	0.01
The duration of smartphone use	0.03	-	-	-	
The tendency of smartphone addiction	0.04	–0.13	0.30***	-	
Self-regulation	0.17*	–0.01	–0.02	–0.32***	-

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

Based on the results of simple linear regression tests, it was known that there was a significant negative influence on self-regulation on the tendency of smartphone addiction (f = 17.8; β = -0.263; p <0.05). Hence, the hypothesis that the existence of self-regulation can reduce the tendency of smartphone addiction was accepted. The magnitude of influence based on the adjusted R^2 value is 9.8%. More is shown in Table 3.

Discussion

This study was aiming to test the effect of self-regulation on the tendency of smartphone addiction among students. The results of this study indicate that self-regulation can affect the tendency of smartphone addiction to students negatively significantly, at 9.8%. These findings align with previous research, which states that a high level of self-regulation can provide a sense of delaying one's satisfaction, focusing more on long-term goals, and having high discipline (Kim et al., 2016). Thus, self-regulation can help students control themselves, be disciplined, and be able to restore themselves to use smartphones naturally and not protracted (Kwan & Leung, 2017).

Someone who has high self-regulation will limit the use of smartphones so as not to cause addiction or dependence (Mahapatra, 2019). Conversely, a person with low self-regulation usually uses an excessive smartphone and does not use the smartphone nicely. He could not control his desires or not even limit himself in using a smartphone (Ara Choi, 2021; Azizah, 2021), thus causing the risk of behaviour towards a higher smartphone addiction (Van Deursen et al., 2015). The correlation test results also showed a significant negative relationship between the tendency of smartphone addiction and self-regulation (r = -0.323; p<0.05), thus strengthening the variable relationship in this study. In prediction, smartphone usage duration is one factor that can affect. As the correlation test, this study shows that there is a significant positive relationship between the tendency of smartphone addiction and the duration of smartphone use (r = 0.302; p <0.05), in line with research by Mascia et al. (2020) for students in Italy. That is, the longer or higher the duration of smartphone use in a person, the higher the tendency of smartphone addiction. This finding can be used as information in preventive steps to reduce the tendency of smartphone addiction by being more careful and limiting or reducing the duration of using a smartphone, especially for entertainment activities. It can be recorded that smartphones that exceed the use of 4 hours a day can be said to have a smartphone tendency (Aljomaa, 2016).

The results of this study can be helpful information for students as participants who need to train their self-regulation ability. The ability of self-regulation that is owned can help students achieve the goals specified because of the management of behaviour from within by including cognitive, physical, and social-emotional elements (Miller & Brown, 1991). A finding study by Mascia et al. (2020) also supports that the existence of self-regulation affects the quality of life and well-being of students in school. However, the effects vary based on the degree of addiction to smartphones. Because self-regulation is a skill, students can practice continuously developing their regulations, for instance, reading books/articles/sources or others about self-regulation and participating in its training to find out strategies that can facilitate their goals in learning, finishing tasks, or self-management (Barak et al., 2016), including in terms of managing yourself in facing social media or using a smartphone. Because of adolescents' lack of self-regulation (Pratiwi & Wahyuni, 2019), youngsters can be the main subject that deserves concern, providing intervention in psychoeducation or training to increase their regulations.

In connection with self-regulation, this finding shows a significant positive relationship between age and self-regulation (r = 0.165; p <0.05). It means that the older someone is, the higher his self-regulation. This study is participated by 18-23 year olds in the youth category. However, there are no test results for children and adults. It can be a limitation of this research to investigate in different age categories.

The importance of smartphone addiction trends needs to be a concern today. The results of this study show the effect of self-regulation on the tendency of smartphone addiction of 9.8%. However, 90.2% of other factors that might reduce the tendency of smartphone addiction or its negative impact on academic performance are unknown. Other studies explain that smartphone addiction is influenced by 43% by cyberloafing and academic stress (Hamrat et al., 2019). Some findings show the tendency of smartphone addiction and academic stress to affect academic procrastination by 33.4 % (Bakri, 2021). Other studies can be followed up by combining self-regulation and other variables or selecting different variables.

Limitations of this study are related to participants and variables. Further research can examine different age categories and in different areas. In addition, other variables can be involved to get a picture of a more robust and comprehensive factor influencing the tendency of smartphone addiction.

Conclusion and Implications

The study findings demonstrated that self-regulation has an impact on the inclination towards smartphone addiction among students. Self-regulation facilitates students in

Table 3. Simple Linear Regression Test

Variable	R	R^2	Adjusted R^2	β	t	F	p
Self-regulation and the tendency of smartphone addiction	0.32	0.10	0.10	–0.26	–4.22	17.80	< 0.001

exercising control over their behaviour and developing greater discipline in the usage of cellphones, hence perhaps diminishing the inclination towards smartphone addiction. The duration of smartphone usage is also correlated with the propensity for addiction. There is a positive correlation between the duration of smartphone use and the likelihood of developing smartphone addiction. It is crucial to acknowledge that mitigating smartphone addiction can be achieved by imposing restrictions or decreasing the time of smartphone usage.

Declaration

Acknowledgement

The author would like to thank the supervisor who has given guidance and direction in the completion of the manuscript and methodology, the participants who have filled out the questionnaire, and the two parents who assisted during the lecture.

Author contributions

Muhammad Ridho Sukmo Wibowo: The first author, literature review, data collection, data processing, data analysis, discussion, and initial manuscript.
Fatin Rohmah Nur Wahidah: Author of correspondence, supervisor, methodology, data processing, data analysis, discussion, and final manuscript.
Hilda Meriyandah Agil: third author, data analysis, discussion, final manuscript, and proofreading

Conflict of interest

Researchers have no potential conflict with the interests of this research on writing and/or publication of the article

Funding

There is no funding from any party.

Orchid ID

Muhammad Ridho Sukmo Wibowo: 0009-0000-2405-8029
Fatin Rohmah Nur Wahidah: 0000-0002-4955-179X
Hilda Meriyandah Agil: 0000-0002-8246-1809

Article history

Submissions: 2023-08-18
Review Process: 2023-11-01
Revised: 2023-12-21
Accepted: 2023-12-23
Published: 2024-01-31

References

Aljomaa, S. S., Mohammad, M. F., Albursan, I. S., Bakhiet, S. F., & Abduljabbar, A. S. (2016). Smartphone addiction among university students in the light of some variables. *Computers in Human Behavior, 61*, 155–164. https://doi.org/10.1016/j.chb.2016.03.041

Ara Choi. (2021). The effect of university students' covid-19 stress on smartphone addiction: The mediating effects of self-regulation. *Family and Environment Research, 59*(4), 557–568. https://doi.org/10.6115/fer.2021.039

Azizah, M. (2021). The relationship between time management, self-regulation, and smartphone addiction. *Empati-Jurnal Bimbingan Dan Konseling, 8*(2), 82–98. https://doi.org/10.26877/empati.v8i2.8057

Backer, E. (2010). Using smartphones and Facebook in a major assessment: The student experience. *e-Journal of Business Education and Scholarship of Teaching, 4*(1), 19-31. https://www.researchgate.net/publication/228968058_Using_smartphones_and_Facebook_in_a_major_assessment_The_student_experience

Bakri, R. P. (2021). The influence of academic stress and smartphone addiction on academic procrastination. *Psikoborneo: Jurnal Ilmiah Psikologi, 9*(3), 578. https://doi.org/10.30872/psikoborneo.v9i3.6501

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Prentice-Hall.

Barak, M., Hussein-Farraj, R., & Dori, Y. J. (2016). On-campus or online: Examining self-regulation and cognitive transfer skills in different learning settings. *International Journal of Educational Technology in Higher Education, 13*(35), 1–18. https://doi.org/10.1186/s41239-016-0035-9

Barakati, D. P. (2013). The impact of using smartphones in english learning (student perceptions). *Jurnal Elektronik Fakultas Sastra Universitas Sam Ratulangi, 1*(1), 1–13. https://ejournal.unsrat.ac.id/index.php/jefs/article/view/1820

Cha, S.S., & Seo, B.K. (2018). Smartphone use and smartphone addiction in middle school students in Korea: Prevalence, social networking service, and game use. *Health Psychol Open.5*(1):2055102918755046. https://doi.org/10.1177/2055102918755046.

Chen, Y. H., & Lin, Y. J. (2018). Validation of the short self-regulation questionnaire for Taiwanese college students (TSSRQ). *Frontiers in Psychology, 9*(MAR), 1–10. https://doi.org/10.3389/fpsyg.2018.00259

Daeng, I. T. M., Mewengkang, N. N., & Kalesaran, E. R. (2017). The use of smartphones to support lecture activities by Fispol Unsrat Manado students. *Acta Diurna Komunikasi, 6*(1). https://ejournal.unsrat.ac.id/v3/index.php/actadiurnakomunikasi/article/view/15482/15023

Ferdiani, E. & Sudewo, H. (2019). The influence of addiction to using smartphones on self-regulation in adolescents in RT 37 Balikpapan Subdistrict. *Jurnal Psikologi Humanistik 45, 7*(2), 80–90. https://univ45sby.ac.id/ejournal/index.php/humanistik/

article/view/184/166

Ferianti, F., & Sunawan, S. (2021).The relationship between depression and choice of smartphone applications with smartphone addiction in high school students. *Enlighten (Jurnal Bimbingan Dan Konseling Islam), 4*(1), 54–65. https://doi.org/10.32505/enlighten.v4i1.2109

Gökçearslan, Ş., Mumcu, F. K., Haşlaman, T., & Çevik, Y. D. (2016). Modelling smartphone addiction: The role of smartphone usage, self-regulation, general self-efficacy and cyberloafing in university students. *Computers in Human Behavior, 63*, 639–649. https://doi.org/10.1016/j.chb.2016.05.091

Hamrat, N., Hidayat, D. R., & Sumantri, M. S. (2019). The impact of academic stress and cyberloafing on smartphone addiction. *Jurnal Education: Jurnal Pendidikan Indonesia, 5*(1), 13. https://doi.org/10.29210/120192324

Islamy, D. Putri. (2021). The effect of using smartphones in distance learning during the covid-19 pandemic on student social interaction. *SOSIOHUMANIORA: Jurnal Ilmiah Ilmu Sosial Dan Humaniora, 7*(1), 49–60. https://doi.org/10.30738/sosio.v7i1.9076

Kim, Y., Jeong, J. E., Cho, H., Jung, D. J., Kwak, M., Rho, M. J., Yu, H., Kim, D. J., & Choi, I. Y. (2016). Personality factors predicting smartphone addiction predisposition: Behavioral inhibition and activation systems, impulsivity, and self-control. *PLoS ONE, 11*(8), 1–15. https://doi.org/10.1371/journal.pone.0159788

Kwan, H. C., & Leung, M. T. (2017). The structural model in parenting style, attachment style, self-regulation, and self-esteem for smartphone addiction. *IAFOR Journal of Psychology & the Behavioral Sciences, 3*(1), 85–103. https://doi.org/10.22492/ijpbs.3.1.06

Kwon, M., Kim, D. J., Cho, H., & Yang, S. (2013). The smartphone addiction scale: Development and validation of a short version for adolescents. *PLoS ONE, 8*(12), 1–7. https://doi.org/10.1371/journal.pone.0083558

Kwon, M., Lee, J. Y., Won, W. Y., Park, J. W., Min, J. A., Hahn, C., Gu, X., Choi, J. H., & Kim, D. J. (2013). Development and validation of a smartphone addiction scale (SAS). *PLoS ONE, 8*(2). https://doi.org/10.1371/journal.pone.0056936

Lestary, Y. D., & Winingsih, E. (2020). Implementation of group counseling with self-management strategies to reduce students' social media addiction at SMAN 1 Driyorejo. *Jurnal BK UNESA, 11*(3), 288–294. https://ejournal.unesa.ac.id/index.php/jurnal-bk-unesa/article/view/33288

Mahapatra, S. (2019). Smartphone addiction and associated consequences: role of loneliness and self-regulation. *Behaviour and Information Technology, 38*(8), 833–844. https://doi.org/10.1080/0144929X.2018.1560499

Manab, A. (2016). Understanding self-regulation: A conceptual review. *Seminar ASEAN psychology & humanity.*

Mascia, M. L., Agus, M., & Penna, M. P. (2020). Emotional intelligence, self-regulation, smartphone addiction: Which relationship with student well-being and quality of life? *Frontiers in Psychology, 11*(March), 1–7. https://doi.org/10.3389/fpsyg.2020.00375

Maulida, H. (2017). Perceptions of using google translate as a media for translating english material. *Jurnal SAINTEKOM, 7*(1), 56. https://doi.org/10.33020/saintekom.v7i1.21

Miller, WR., & Brown, J. (1991). Self-regulation as a conceptual basis for the prevention and treatment of addictive behaviors. In N. Heather, WR. Miller, & J. Greeley (Eds.), *Self-Control and the Addictive Behaviours* (pp. 3-79). Maxwell Macmillan.

Parasuraman, S., Sam, A.T., Yee, S.W.K., Chuon, B.L.C., & Ren, L.Y. (2017). Smartphone usage and increased risk of mobile phone addiction: A concurrent study. *International journal of pharmaceutical investigation, 7*(3),125-131. https://doi.org/10.4103%2Fjphi.JPHI_56_17

Park, N., & Lee, H. (2012). Social implications of smartphone use: Korean college students' smartphone use and psychological well-being. *Cyberpsychology, Behavior, and Social Networking, 15*(9), 491–497. https://doi.org/10.1089/cyber.2011.0580

Pratiwi, I. W., & Wahyuni, S. (2019). Factors that influence adolescents' self-regulation in socializing. *Jurnal Psikologi Pendidikan dan Pengembangan SDM, 8*(1), 1–11. https://ejournal.borobudur.ac.id/index.php/psikologi/article/view/589

Saputri, M. E., & Pranata, T. R. (2014). The influence of brand image on iphone smartphone user loyalty. *Jurnal Sosioteknologi, 13*(3), 193–201. https://doi.org/10.5614/sostek.itbj.2014.13.3.3

Syakir, & Suhendar, B. (2021). Frequency of smartphone use for english learning purposes among first semester STMA Trisakti students. *Jurnal Lentera Pendidikan Pusat Penelitian LPPM UM METRO, 6*(1), 88–102.

Taufik, E., Dewi, S. Y., & Muktamiroh, H. (2020). The relationship between smartphone addiction and the tendency of phubbing behavior in adolescents at SMAN 34 South Jakarta. *Seminar Nasional Riset Kedokteran (SENSORIK).*

Tessier, J. (2013). Student impressions of academic cellphone use in the classroom. *Journal of College Science Teaching, 43*(1), 25–. https://doi.org/https://doi.org/10.2505/4/jcst13_043_01_25

Tumuwe, R., Damis, M., & Mulianti, T. (2018). Online motorcycle taxi users among Sam Ratulangi University students, Manado. *Jurnal Holistik, 21*, 1–19. https://ejournal.unsrat.ac.id/index.php/holistik/article/view/20562

Van Deursen, A. J. A. M., Bolle, C. L., Hegner, S. M., & Kommers, P. A. M. (2015). Modelling habitual and addictive smartphone behaviour: The role of smartphone usage types, emotional intelligence, social stress, self-regulation, age, and gender. *Computers in Human Behavior, 45*, 411–420. https://doi.org/10.1016/j.chb.2014.12.039

Warisyah, Y. (2015). The importance of parental "dialogic assistance" in using gadgets in early childhood. *Prosiding Seminar Nasional Pendidikan, 2016*(November 2015), 130–138. https://seminar.umpo.ac.id/index.php/semnasdik2015/article/view/212

Yan, Z. (2015). *Encyclopedia of mobile phone behaviour.* IGI Publishing Hershey.

Young, K. S. (1998). Internet addiction: The emergence of a new clinical disorder. *Cyberpsychology and Behavior, 1*(3), 237–244. https://doi.org/10.1089/cpb.1998.1.237