The Prevalence of Internet Addiction among University Students in Malaysia

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Abstract
Excessive Internet use has led to the emergence of Internet addiction and become an issue of growing concern with negative impacts on university students' lives nowadays. Therefore, this study has been conducted with the aim to investigate the prevalence of Internet addiction among university students. This study is carried out in one of the public universities in Malaysia involving 810 student respondents selected based on the simple random sampling technique. The level of Internet addiction among the respondents is measured using the Internet Addiction Test (IAT). The study data are analyzed using the frequency, percentage, mean, and standard deviation. The study finding shows that the majority of the respondents, or 81.5% were always using the Internet. In terms of Internet addiction, 5.4% cases were severe users, 44.7% had moderate addiction, 45.6% showed mild addiction and 4.3% were cases of normal users which had no addiction. The mean of Internet addiction was 50.400 (SD = 18.787). Even though the results indicate that the rate of severe Internet addiction among respondents is still lower than the previous study, it is still necessary to curb the spread of this crisis due to its implication especially toward student's overall well-being in life.
Keywords: Internet Addiction, University Students, Descriptive Analysis

Introduction
With the sophistication of the latest technology, the use of the internet is continually expanding. The internet began to gain people's trust as a sophisticated technological tool that

can be applied widely, but it carries both positive and negative impacts in terms of its use in modern lifestyle (Ying et al., 2021). Internet is no longer restricted and only used at the workplace, but now it is a common facility in public places like food outlets, restaurants, hotels, airports, and even shopping malls (Hassan & Shahrina, 2012).

With this extensive internet access, it has improved the lives of humans today in various aspects including connections and communications, teaching and learning, banking and transactions, entertainment, security and others (Mohamed & Bernouss, 2019). Although the drastic increase in the use of the internet has truly benefited its users, excessive, uncontrollable use has created social, psychological and behavioral disorders (Azmi et al., 2020; Oktan, 2011).

In Block (2008), Goldberg explained internet addiction as a maladaptive pattern of internet use to the point of detriment, if there are three symptoms or more, and if it happens within 12 months. The symptoms include tolerance, where one feels that they need to stay online for a certain period of time to gain enjoyment and to avoid feeling empty or bored if they are not online within that period. Other than that, they will also have the ongoing desire or have the pressure mentally and emotionally to retain the enjoyment in surfing the Internet.

Many latest studies have proven that internet addiction gives a negative impact and disturbance to one's mental health like disturbance of feelings (Liberatore et al., 2011), somatic depression (Hinic et al., 2010), depression and obsessive-compulsive disorder (Jang et al., 2008). Starting June 2013, Internet Gaming Disorder has been listed by American Psychological Association (APA) in the Diagnostic and Statistical Manual of Mental Disorders V (DSM-V) as a mental disease (Kuss, 2013). This shows that the internet addiction issue can no longer be taken lightly and should be given attention as it has been identified as a contributor to mental issues.

The prevalence of internet addiction in Asian countries was found to be higher than in Western countries (Kuss et al., 2014). The number of Internet addiction crises in Asia has increased drastically especially in China, and begun to spread to other countries (Tao et al., 2010; Lam, Peng, Mai, dan Jing, 2009). In 2020, there were almost 4.8 billion active internet users worldwide, equivalent to 62% of the global population. Asia was the region with the largest number of online users (Internet World Stats., 2020). This is a cause for concern as it demonstrates the fact that Malaysia is of no exception, when it comes to facing internet addiction crises (Alam, 2014; Zainuddin et al., 2013; Kapahi et al., 2013; Mohd Ayub et al., 2012).

Problem Statement
Based on the statistics in 2018 from the Internet Users Survey conducted by the Malaysian Communications and Multimedia Commission (MCMC), the Internet penetration rate has risen to 87.4% in 2018 compared to 76.9% in 2016. The percentage is great and it shows that more than half of the population use the internet. Respondents within the 20-40 years of age range were reported as the group with the highest frequency of using the internet (MCMC, 2020). Based on the previous studies, there is an indication that the group aged 20-24 comprises mostly of university students.

This is unsurprising, as the use of the internet has become an essential part of university students' lives today. All the students at the university need to use the internet as a resource for them to get information and references in completing their assignments related to the subjects they learn. For those living in campus, they have an advantage, as they can use the internet for free, and it is more convenient, compared to students off-campus who have to subscribe to the internet (Che Tom & Tohalib, 2018).

Despite this, such a scenario has indirectly steered them towards the risks of internet addiction. According to Young (1998), individuals prone to suffer from internet addiction comprise of those who are exposed to the use of the internet. Possibly, initially, they intend to surf the internet to find some learning materials, or study references, but it slowly makes them addicted as they turn to entertainment-oriented websites (Che Tom & Tohalib, 2018). Most university students do not realize that the excessive use of the internet can bring some negative impacts to them.

Among the impacts of the negative internet addiction on students' lives are the lack of discipline, health issues, and other social problems (Ying et al., 2021; Alam, 2014; Zainuddin et al., 2013; Oktan, 2011). The respondents who use the internet excessively even face behavioral, interpersonal, physical, work and psychological issues (Shah Alam et al., 2014). These empirical results should make us aware that internet addiction has become significant physical and psychological issues that require attention among university students in Malaysia.

Nonetheless, there has been an inconsistency in the findings of past studies conducted in the context of this country. For example, the finding from the study by Shah Alam et al., (2014) established that 64% of respondents were categorized as internet addicts, whereas 36% had not suffered from internet addiction. Contrastingly, from Ying et al (2021), only 29.0% respondents had internet addiction and the rest, which is 71% did not experience it. The question is, why is there a contradiction in the level of internet addiction in these previous studies? Thus, this study aims to determine the prevalence of internet addiction experience among the university students using Internet Addiction Test (IAT) by (Young, 1998).

Literature Review
A study on the prevalence of internet addiction among school-going adolescents in Malaysia and its associated factors was conducted by (Ying et al., 2021). The study was conducted using the survey method in 2017 involving 27,497 respondents from 212 randomly selected secondary schools. The information such as sociodemographic information, lifestyle, internet use and internet addiction was obtained using an instrument. For the study by Ying et al (2021), internet addiction was measured using the Malay Version of Internet Addiction Test (MVIAT). The finding shows that 29% (n = 8049) had internet addiction, and 71% (n = 19,406) did not have internet addiction.

Also, the study by Ying et al (2021) found that there is a significant correlation between students with internet addiction and sedentary behavior, current electronic-cigarette users, inadequate fruit and vegetable intakes, consumed carbonated soft drinks at least once in a day, consumed fast food at least three days/week, and ever/current alcohol drinkers were lifestyle factors. To add, internet addiction is also very striking among students from urban schools, of higher school grade, and those whose parents are married but living apart. Finally,

the study finding shows that there is a positive relationship between respondents who are addicted to the internet and unhealthy dietary and lifestyle behaviors.

In Azmi et al (2020) a similar study was conducted aiming to examine the prevalence of internet addiction among primary school students and its associated factors. Respondents in Azmi et al (2020) comprised of 178 school-children aged 11 years old and their parents had consented to fill in the validated Malay version of the Internet Addiction Test (MVIAT). The finding demonstrated that the prevalence of internet addiction among school-children and parents was 23 % and 15.7%, respectively. Based on the use of the internet among children, it is revealed that the use was high during school holidays (120 min/day) than during schooling day (60 min/day). The result in Azmi et al (2020) also found that there is a positive and significant relationship of internet addiction between children and their parents (r = 0.28, p < 0.001). Besides, the addiction of the internet among children and parents was significantly associated with Malay ethnicity and longer duration of internet use during holidays. However, the results also indicate that the respondents who are using the internet for the purpose of information seeking do not develop any internet addiction.

The next study was done in Alam et al (2014) to identify the effect of internet addiction among 200 Bachelor Degree students from two public higher learning institutions in Malaysia in March and April 2012. The study design was cross-reference, using the self-developed internet addiction questionnaire using the in-depth interview method, with five lecturers from one university to identify the key elements to be asked in the questionnaire. The study outcome found that internet addiction leaves a negative impact towards the psychological aspects (M=3.45) and interpersonal aspects (M=3.26), followed by physical problems (M=2.98) and work problems (M=2.58). The finding also shows that internet addiction can lead to behavioral problems (M=2.55). Based on the mean obtained from the study by Shah Alam et al., (2014), all five aspects are at moderate level.

In another study done by Kapahi et al (2013) the root cause and the effect of internet addiction in Malaysia were investigated. 203 teenagers were selected at random to participate in this study. To obtain the data with regard to internet addiction, Kapahi et al (2013) used a modified version of the Internet addiction test (IAT) which summarizes Young's research on a 10- item based questionnaire. The outcome established that 64% were categorized as having internet addiction, while 36% others were not addicted. Most of the respondents were Bachelor Degree students. Some of the reasons behind internet addiction are relevant factors, such as job demand that requires internet access, the fact that internet is easy to access, the motives of use, and the impulsive surfing. Meanwhile, the repercussions of internet addiction include insomnia, physical change, low self-esteem, poor attention span, reduced productivity, and the withdrawal syndrome. All in all, it shows that the risk of internet addiction is very high among teenagers aged from 18 to 25 years old, specifically college or university students.

Next, another study by Zainuddin et al (2013) focused on the impact of internet addiction on university students in Malaysia. 653 students were the samples, and the questionnaire used was Internet Addiction Test by Kimberly Young (1998). Another questionnaire concerned with the activities on the Internet also its impact to students' lives. The study outcome revealed that 93% were excessive Internet users. Indirectly, they are very at risk when it comes to experiencing Internet addiction. From the results, 67.5% were at moderate level, while 30%

were at high level of addiction, and the rest which is 2.5% experienced bad internet addiction. All in all, the study outcome also shows that internet addiction is the reason for problems in academic performance, also in forming negative personality and unhealthy lifestyle.

The study by Ayub et al (2012) was conducted among university students in social science courses. A total of 388 samples of students (134 male and 254 female students) was involved, and the study used the Internet Addiction Inventory (IAT) questionnaire by (Young, 1998). The study done aimed to see the difference in the internet addiction between male and female students. The study conducted established that 56.4% of samples were at low level and 11.3% were at moderate level. At the same time, samples at the moderate level experienced some disruptions concerning internet addiction and the male students had more tendency to experience Internet addiction compared to the female students.

In another study conducted by Hassan & Shahrina (2012), to identify the level and the actual reason behind internet addiction, the type of internet addiction that is frequently accessed, and the impact of internet addiction among Form 4 students 4 in the city of Johor Bharu, Malaysia. The total number of samples was 265 Form 4 students. The type of sampling is random and it uses a questionnaire comprising of 3 sections, namely respondents' information, Internet Addiction Inventory (IAT), and other item statements. Data in this study were analyzed using the descriptive statistics and Pearson Correlation. The study outcome revealed that the social websites like Facebook, Twitter, and Myspace are most visited. For the level of internet addiction, the outcome of the study by Hassan & Shahrina (2012), showed that 7.5 % had high level of addiction, 29.8 % moderate, 45.7 % little, and 17.0 % did not have any internet addiction.

Methodology
This study aims to answer questions about the extent of the level of Internet addiction experienced by university students in Malaysia. Thus, this study adopts the descriptive design to answer the study questions. This study was conducted in Universiti Putra Malaysia (UPM). The respondents involved were n=900 selected through the simple random sampling technique. Researcher had obtained the permission from the UPM Academic Affairs to distribute the questionnaire forms to the respondents. Every respondent was only allowed 30 to 45 minutes to fill in and return the questionnaire. From the total number of the questionnaire sets distributed, only n=810 were successfully returned.

There are 2 sets of questionnaire forms used in this study. The first set is the Internet Addiction Test (IAT) (Young, 1998). IAT was constructed aiming to measure the level of Internet addiction of an individual, with 20 items based on the six-point Likert scale (0=Not Using), (1=Seldom), (2=Sometimes), (3=Often), (4=Very Frequently), and (5=Always). To measure the Internet addiction score, all the items will be totaled. The minimum score is 0, and the maximum is 100. This shows that the higher the score obtained, the higher the level of Internet addiction experienced by an individual. There are four categories of Internet addiction as can be referred to in Table 1 below

Table 1
Internet Addiction Test Score and Category

Category	Score	Level of Addiction
1	0-19	Non-addiction category, where user does not have any problem related to his or her use of the Internet.
2	20-49	Mild category, where user may surf the Internet for a long time, but is still able to control the use;
3	50-79	Moderate category, where this user is facing a moderate addiction issue because of Internet use. User needs to weigh upon the impact in his or her life.
4	80-100	Severe category, where the use of the Internet brings a bad impact to user's life. User should think about the disadvantage upon himself or herself.

Reliability is the extent to which the outcome of the items contained in the measurement tool can be trusted and transparent, to be used in the study. A measuring tool with high reliability value would show the same score by the same individual using the same tool, only at a different time (Sidek, 2009). Referring to the previous literature, there were several reliability coefficients done on IAT (Young, 1998). That said, to ensure that the IAT reliability is good and appropriate for this study, the reliability test was conducted in both the pilot study and the actual study. This is due to the fact that most of the IAT reliability coefficient values in the past studies were not tested in the local context. A pilot study was carried out on 30 UPM students who have the same characteristics with the actual respondents.

Based on Chua (2006), the pilot study is essential to ensure that the measurement tool can be executed in the real study. The questionnaire was self-administered by the researcher in the pilot study conducted. The IAT reliability value was tested using the Alpha Cronbach (α) coefficient. The coefficient value α = .60 or higher than that, is good and can be applied for the purpose of the study (Majid, 1993). The reliability value obtained for IAT was high in the pilot study n (30) = .90; and it was also high in the actual study, n (810)= .91. This proves that IAT is a reliable, usable measuring tool for the purpose of the study. Refer to Table 2 below for the IAT reliability value. Meanwhile, for the process of analyzing the data of the study, the descriptive statistics was used in the forms of frequency, percentage, mean, standard deviation, level and total score of the study respondents.

Table 2
Reliability of Internet Addiction Test (IAT)

Reliability test	Respondent	α (Alpha Cronbach)
Pilot test	n=30	.940
Actual study	n=810	.941

Result and Discussions
Table 3 below shows the distribution of the number of respondents based on gender. The descriptive analysis shows that a total of 313 (38.6%) are male students, while 497 (61.4%) are female students.

Table 3
Respondents' Gender

Gender	Frequency	Percentage (%)
Male	313	38.6
Female	497	61.4
Total	810	100

Next, the descriptive analysis in Table 4 shows the category of the respondents' age. The majority of the respondents are students aged 18 to 19 years old, or 246 (30.4%), and those aged between 20 and 21- 287 (35.4%). The remaining are students aged 22 to 23 years old, 176 (21.7%), and 101 (12.5%) were students aged 24 to 25 years old.

Table 4
Respondents' Age

Age	Frequency	Percentage (%)
18 to 19	**246**	**30.4**
20 to 21	**287**	**35.4**
22 to 23	**176**	**21.7**
24 to 25	**101**	**12.5**
Total	**810**	**100**

In terms of the use of the internet in Table 5, it shows that 660 (81.5%) students often used the 9nternet, and the rest, or 150 (18.5%) students seldom used the internet.

Table 5
Respondents' Internet Usage

Internet Usage	Frequency	Percentage (%)
Always	**660**	**81.5**
Seldom	**150**	**18.5**
Total	**810**	**100**

Table 6 illustrates the distribution of respondents according to the frequency, percentage, mean, standard deviation and score for the internet addiction categories. The mean internet addiction of the study respondents was 50.400 (SD = 18.787). For the prevalence of internet addiction, 35 (4.3%) were found to have no addiction, 369 (45.6%) had mild addiction, 362 (44.7%) had moderate addiction, and 44 (5.4%) had severe addiction.

Table 6
The prevalence of internet addiction

Category	Score	Internet addiction category	Frequency	Percentage (%)	Mean	SD
1	**0-19**	**No addiction**	**35**	**4.3**	**50.400**	**18.787**
2	**20-49**	**Mild addiction**	**369**	**45.6**		
3	**50-79**	**Moderate addiction**	**362**	**44.7**		
4	**80-100**	**Severe addiction**	**44**	**5.4**		
Total			**810**	**100**		

Based on the study done, the study outcome finds that the majority of the respondents experienced internet addiction under mild category and followed by moderate category. This study outcome is consistent with that of Ayub et al (2012) which highlighted the difference in the internet addiction between male and female students. 388 respondents among the university students from social science were involved in the IAT survey (Young, 1998). The study outcome by Ayub et al (2012) revealed that the majority of the respondents or 56.4% were under the mild category of internet addiction.

Apart from that, the study finding also supported the finding from Hassan & Shahrina (2012) that was conducted to identify the level of internet addiction among Form 4 students in the city of Johor Bharu, Malaysia. Using the IAT (Young, 1998), the outcome of Hassan & Raja Shahrina (2012) shows that the majority of the respondents experienced mild internet addiction (45.7 %), moderate category (29.8 %), severe category 7.5 %, and 17.0 % had zero internet addiction.

Other than that, the findings of this study are also in line with Zainuddin et al (2013) that examined the impact of internet addiction toward university students in Malaysia based on IAT measurement (Young, 1998). The study outcome from Zainuddin et al (2013) displays that the majority of the respondents or 67.5% were at mild category, whereas 30% were at moderate category and the remaining, which is 2.5% experienced severe internet addiction, bringing them into the severe category.

Nonetheless, the study finding is rather different from several past studies such as (Ying et al., 2021; Azmi et al., 2020; Alam et al., 2014; Kapahi et al., 2014). In the work by Ying et al (2021), 29% of the school students as the respondents experienced internet addiction, dan 71% did not have any addiction. The same goes with the finding in Azmi et al (2020), that demonstrated that the prevalence of internet addiction lies in 23% of the school-children respondents, whereas parents respondent 15.7%. The remaining, which is 77% school-children and 84.3% parents did not experience any internet addiction (Azmi et al., 2020). Next, the study outcome by Alam et al (2014) found that the internet addiction among the university students was at moderate level, but it was only reported in mean.

 Last but not least, the majority of the teenage respondents in the study by Kapahi et al (2013) or 64%, did experience internet addiction, whereas 36% more had no such addiction. Through the finding of the study by Kapahi et al (2013), 64% was the highest percentage in the previous literature compared to this study and the past literature. Based on the discussion of the study above, it is concluded that the finding carries some similarities and differences with the past studies that have been done in the context of this country.

The inconsistency is explained by the use of the instrument to measure the prevalence of internet addiction among respondents. As an example, this study adopted the Internet Addiction Test developed by (Young, 1998). Among the studies that also adopted IAT (Young, 1998) were (Hassan & Syahrina, 2012; Ayub et al., 2012; Zainuddin et al., 2013). Thus, the finding obtained is similar to one another.

Meanwhile, there is another instrument used which is the Malay Version of the Internet Addiction Test (MVIAT) as established in (Ying et al., 2021; Azmi et al., 2020). Meanwhile, for studies like Alam et al (2014); Kapahi et al (2014), these researchers used their own self-

developed instruments. With different instruments used, the method of measurement, scale, scoring and study outcome also differ.

Next, the similarities and differences of the study findings are also caused by the selection of the population. The study respondents comprise of university students, but in the previous studies such as Ying et al (2021) it involved only school students as the respondents. In the study by Azmi et al (2020) it involved students and the parents. This leads to the conclusion that most possibly, the pattern of internet use is different between university students and school students.

However, based on this study, the number of university students in both mild dan moderate categories represent the total number of respondents and this should be a cause for concern. This is because respondents in the mild category may be moving toward the moderate category, whereas the respondents in the moderate category can move toward the severe category in the future.

This is not impossible to happen as individuals who often have to use the internet will tend to develop internet addiction more (Young, 1998). University students are those who are always exposed to the internet every day, since the teaching and learning method today requires the internet as the time-saving and effective communication medium (Ayub et al., 2012; Zainuddin et al., 2012).

Other than that, the internet is also beneficial for delivering tasks via email, and for uploading and downloading lecture notes. That said, even though it is convenient to get information about the subjects or the tasks assigned, it is irrefutable that a lot of students have taken the internet for granted (Che Tom & Tohalib, 2018). According to Che Tom & Tohalib (2018), students have the opportunity to get entertainment from the internet by surfing platforms like Youtube, Facebook, Twitter, and even more worrying, they are also free to surf inappropriate websites like pornography.

One of the negative effects that have been proven empirically is that the internet use can affect students' academic achievement, as established in Tom & Tohalib (2018) as well as (Ying et al., 2021). There are also studies showing that the internet addiction can lead one to experience insomnia, physical change, low self-esteem, poor attention span, reduced productivity and withdrawal symptom (Kapahi et al., 2013). This is a serious problem because persistent internet addiction can impair students' well-being in overall. Therefore, these issues regarding the internet addiction among university students must be given greater attention and immediate treatment as it can ruin their lives.

Conclusion
In sum, the level of internet addiction among university students in Malaysia is still under control. However, there are few students who have experienced severe internet addiction. Thus, several steps need to be taken to curb the internet addiction from worsening. One of the methods proposed to overcome the issue of internet addiction is via counseling. Counselors need to comprehend that the pattern of communication among the students today leans on the use of the internet as its orientation. Thus, they need to be more flexible in giving counseling services such as from offering face-to-face counseling session to online counseling session through various channels like emails, blogs, Facebook, Twitter, forums and

other online platforms. Next, the Malaysian government needs to play a role like formulating a new, very clear policy about Internet addiction to ensure that the use of the internet among the university students and the people in this country is under control. Apart from that, the modification of various factors needs to be considered while developing strategies and interventions to prevent the internet usage among university students.

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Reference

Azmi, S. U. F., & Robson, N., & Othman, S., Guan, N. C., & Isa, M. R. (2020). Prevalence and risk factors of internet addiction (IA) among national primary school children in Malaysia, *International Journal of Mental Health and Addiction*, 18, 1560–157, https://doi.org/10.1007/s11469-019-00077-2

Block, J. J. (2008). Issues for DSM V: Internet addiction. *The American Journal of Psychiatry,* 165, 306–307.

Che Tom, A. K., & Tohalib, Z. (2018). Hubungan antara ketagihan internet dengan pencapaian akademik dalam kalangan pelajar Universiti Malaysia Terengganu (UMT). *Prosiding Konvensyen Kepengetuaan dan Felo Penghuni Kolej Kediaman Universiti Awam Kebangsaan 2018,* 420-428.

Chua, Y. P. (2006). Kaedah dan statistik penyelidikan: *Asas statistik penyelidikan (buku 1).* Kuala Lumpur: McGraw-Hill (Malaysia).

Hassan, J., & Shahrina, R. A. R. (2012). Ketagihan penggunaan internet di kalangan remaja sekolah tingkatan 4 di Bandaraya Johor Bahru. *Journal of Technical, Vocational & Engineering Education, 6,* 23-43.

Hinic, D., Mihajlovic, G., & Dukic-Dejanovic, S. (2010). 'Internet Addiction' in relation to cognitive or somatic depression symptoms. *Journal of Cognitive and Behavioral Psychotherapies, 10*(2), 187-197.

Internet World Stats. (2020) Usage and Population Statistics. Available online: https://internetworldstats.com/stats.htm

Jang, K. S., Hwang, S. Y., Choi, J. Y. (2008). internet addiction and psychiatric symptoms among Korean adolescents. *Journal of School Health*, *78*(3), 165-171.

Kapahi, A., Siow Ling, C., Ramadass, S., and Abdullah, N. (2013). Internet addiction in Malaysia Causes and Effects. *iBusiness of Scientific Research,* 5, 72-76.

Kuss, D. J. (2013). Internet gaming addiction: Current perspectives. *Psychology Research and Behavior Management,* 6, 125-13.

Lam, L. T., Peng, Z., Mai, J., Jing, J. (2009). Factors associated with internet addiction among adolescents. *Cyberpsychology & Behavior , 12*(5), 551-555. https://doi.org/10.1089/cpb.2009.0036

Liberatore, K. A., Rosario, K., Colon-De Marti, L. N., & Martinez, K. G. (2011). Prevalence of internet addiction in Latino adolescents with psychiatric diagnosis. *Cyberpsychology, behavior, & social networking, 14*(6), 399-402. https://doi.org/10.1089/cyber.2010.0252

Malaysian Communications and Multimedia Commission (MCMC). Internet Users Survey. (2018): Statistical Brief Number Twenty Three. Available online:

https://www.mcmc.gov.my/skmmgovmy/media/General/pdf/Internet-Users-Survey-2018.pdf

Mohamed, G., & Bernouss. (2019): A cross-sectional study on internet addiction among Moroccan high school students, its prevalence and association with poor scholastic performance, *International Journal of Adolescence and Youth*, 479-490, 25 (1). https://doi.org/10.1080/02673843.2019.1674165

Ayub, M. A. F., Hamid, W. H. W., and Nawawi, M. H. (2012). Gender and internet addiction: The Malaysia experience. *Workshop proceedings of the 20th International Conference on Computers in Education,* 164-169.

Majid, M. K. (1993). *Kaedah Penyelidikan Pendidikan.* Kuala Lumpur: Dewan Bahasa dan Pustaka.

Oktan, V. (2011). The predictive relationship between emotion management skills and internet addiction. *Social Behavior And Personality*, *39*(10), 1425-1430, https://doi.org/10.2224/sbp.2011.39.10.1425

Alam, S., Hashim, N. M. A., Ahmad, M., Che Wel, C. A., Nor, M. S., and Omar, N. A. (2013). Negative and positive impact of internet addiction on young adults: Empirical study in Malaysia. *Intangible Capital, 10*(3), 619-638.

Sidek, M. N. (2009). *Reka bentuk penyelidikan. Falsafah, teori dan praktis.* Serdang. Universiti Putra Malaysia.

Tao, R., Huang, X., Wang, J., Zhang, H., Zhang, Y., & Li, M. (2010). Proposed diagnostic criteria for internet addiction. *Addiction (Abingdon, England)*, *105*(3), 556-64. doi:10.1111/j.1360-0443.2009.02828.

Ying, Y. C., Awaluddin, S. M., Kuay, K. L., Man, S. C. Baharudin, A., Yn, M. L., Sahril, N., Omar, M. A., Ahmad, N. A., & Ibrahim, N. (2021). Association of internet addiction with adolescents' lifestyle: A national school-based survey. *Int. J. Environ. Res. Public Health*, 18, 1-13. http://dx.doi.org/10.3390/ ijerph18010168

Young, K. S. (1998). Internet addiction: The emergence of a new clinical disorder. *CyberPsychology & Behavior*, *1*(3), 237-244.

Zainudin, A., Md. Din, M., and Othman, M. (2013). Impacts due to internet addiction among Malaysian university students. *International Journal of Asian Social Science, 3*(9), 1922-1928.