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The Influence of Self-Esteem, Perceived Stress and Perceived on Internet Addiction During Pandemic Covid-19

[1]Mohamad Atheef Hannan Suaree, [2]Nur Hidayah Ayob, [3]Mohd Safwan Ramli, [4]Noor Dalila Musa, [5]Zaidatul Nadhirah Roslan

[1]Faculty of Business and Management, Universiti Teknologi MARA (UiTM) Shah Alam, Malaysia, [2,3,4,5]Faculty of Business and Management, Universiti Teknologi MARA (UiTM) Jengka, Pahang, Malaysia

Correspondence Author Email: [2]hidayahayob@uitm.edu.my & safwanramli@uitm.edu.my

Abstract

Internet is an information channel and communication that is widely used all over the world. The main purpose of this study was to examine the relationship between self-esteem, perceived stress and perceived social support towards Internet addiction among students. Pilot study where data was collected at UiTM Selangor (Shah Alam & Puncak Alam). The 220 students from undergraduate students and postgraduate students (Honors) Faculty of Business and Management answered the questionnaires. It was found that according to regression analysis, only perceived social support significantly contributed in predicting the student internet addiction during pandemic Covid-19. It was found perceived stress had the influence on internet addiction and other two dimension does not influence internet addiction among students which were self-esteem and perceived stress.

Keywords: Personal Factor, Self-Esteem, Perceived Stress, Perceived Social Support, Internet Addiction

Introduction

Internet is a resource for everyone, and especially for adolescents who like to receive and share personal, social information, and new knowledge. Previous studies have found that excessive use of the Internet is often associated with negative health conditions, including physical and emotional distress (e.g., anxiety, depression), and the risk of becoming addicted (Dong et al., 2020; Xu et al., 2019; Bolu et al., 2020). The current COVID-19 pandemic has changed individual and social life experiences and way of learning had also change from face to face into online distance learning (Taylor et al., 2020). But According to Arifin, et al (2018), students not only use Internet for academic purpose but also for leisure purpose such as entertainment activities, game playing, download movies and chatting. Thus, it can affect their sleeping time because they like to sleep late at night, thus the next day they felt tired and sometimes missed classes due to the addiction of the Internet (Arifin, et al., 2013). The study done by Nurhilyana (2013); Vang (2016) indicated that university students from West Malaysia spent more time on online Internet. The results are 63.3% students from one private

university, 49.2% from 19 years students and 2.6% from a public university student's dependent on the internet addict users of Internet. However, according to Leunita & SireraMarecia (2018), internet addiction is already a crisis in many developed countries. He stressed this plague has affected youngsters in Malaysia and situation will be worsening by day. Dong et al (2020) has stated that, it is time for Health Ministry in Malaysia to work with psychologists in considering an internet rehabilitation program because it can assist to bring addicts back into the real world.

Problem Statement

The COVID-19 pandemic is a new Coronavirus emergency which sparked an epidemic of acute respiratory infections in humans centered in Wuhan, Hubei province (China), in late December 2019. Even for households free from the virus, the pandemic emergency, like COVID-19 itself, is likely to work as a major stressor, especially in terms of anxiety and economic difficulties. Self-isolation, which entails social distancing and limitations in interpersonal relationships, could exacerbate negative emotions. Previous studies thus found an association between anxiety, depression, and COVID-19 (Planchuelo et al., 2020) and the Internet could contribute to the development of these psycho-pathological symptoms. Indeed, the Internet and social media applications can amplify the risk of mood disorders in citizens, due to the high daily rates of new COVID-19 cases and deaths, which in turn can exacerbate the fear of COVID-19.

Students are showing great interest on Internet because internet can change their lifestyles which results in spending more time on the Internet, reduce of social relations among family and friends (Bahrainian & Khazaee, 2014). Internet is important to the student's life today for their educational activities (Sylvia et al., 2017). However, many of the students are wasting their time by visiting inappropriate sites that are not related to education purpose activities (Sylvia et al., 2017). In another context, young people especially university students (generation Y) have spent time on Internet more than other people compared to generation X and baby boomers (Bahrainian & Khazaee, 2014). In addition, Bolton et al (2013) showed that gen Y uses the Internet for the purpose of setting information, entertainment, and experience of socializing in virtual nature by keeping in touch with friends in other countries. Thus, the impact is the college students (a group of Gen Y) spent more time on the Internet compared to using it for academic purpose (Pempek et al., 2009). Previous study by Azizah et al (2013), indicated that 175 undergraduates and 653 university students in Malaysia are addicted to Internet. Thus, it gives out negative impact on the students' and badly affected the academic performances. Students were excessive users of Internet, reported of having academic performances problems caused by their Internet usage compared to the average user. Excessive users reported that they have problems with their academic performance due their Internet usage.

Based on a study conducted by Perrella and Caviglia (2017), found that self-esteem is a significant factor and contribute negative consequences towards themselves and tend to engage in addictive behaviors such as Internet abuse and addiction. Students have limited time to study because more time are used for Internet hence the students stress level is increased and academic performance is decreased (Samaha & Hawi, 2016). The author suggested that by setting low social support in their real life, the Internet addiction gets higher because they have no social interaction in both inside and outside (Han, 2017). Therefore, the author aims to identify factors Internet addiction among university students which are self-

esteem, perceived stress and perceived social support which can be considered as a major feature which can predict the potential for problematic use of Internet.

Thus, in this study, the researcher aims to explore factors that contribute internet addiction among university students with supported relevant literatures. Studies on the relationship between self-esteem, perceived stress, perceived social support and Internet addiction are not widely researched in Malaysia. Hence, determining on the extent to which self-esteem, perceived stress, and perceived social support predicted Internet addiction is significant among university students.

Literature Review
Self-Esteem

Self-esteem is described as the evaluation one has of his/herself, how one feels about his/herself in almost all situations. When social integration and support are low, the level of self-esteem will accordingly decrease (Younes, 2016). It seems that the "self-esteem factor" is crucial, in such way that the individuals with low self-esteem have negative evaluations of them, and, in order to retire or run away from these stressful thoughts or feelings, tend to engage in addictive behaviors such as Internet abuse (Perrella & Caviglia, 2017). Internet addiction disorder is self-control ability, self-esteem, mental hygiene, self-efficacy, depression, anxiety, and loneliness (Baek, 2000). Priscilla (2019) investigated the extent to which sensation seeking and low self-esteem predicted heavier Internet use, using the Internet related problem scale. From the results obtained, self-esteem was a better predictor of 'Internet Addiction'. Individuals with low self-esteem seem to spend more time online compare to high self-esteem. In some other studies, self-esteem has emerged a factor associated with Internet use (Jackson et al., 2010) and problematic Internet use (Kim & Davis, 2009).

In addition, on self-esteem and the utilization of the Internet, there has been thinks about analyzing young people's utilization of some person-to-person communication destinations and its relationship with their confidence. In these investigations, it is seen that teenagers with low self-esteem have a tendency to invest more energy in informal communication destinations than those with higher self-esteem (Nirwana & Haliah, 2018). In Korean studies on the correlation between Internet addiction and self-esteem, Jeon (2005) investigated the effect of the extent of Internet use, depression and self-esteem from 800 adolescent surveyed. As a result, the extent of Internet use increases depression and it decreases self-esteem. The relationship between Internet addiction and self-esteem indicates a statistically significant negative slope (r= -.284, p < .01).

In other words, the higher Internet addiction is, the lower self-esteem. Other studies have looked at the relationship between Internet addiction and self-esteem (Lee, 2007; Kim, 2007; Widyanto & McMurran, 2004). Low self-esteem has been linked to addictive behaviors. Craig (1995), detailed that individuals who hold negative assessments about themselves utilize addictive substances to escape or pull back from their low self-beliefs. Study by Munasinghe et al (2018), respondents who fill the Internet addiction test, meet the criteria for Internet addiction significantly have low self-esteem.

This study includes 1044 adults' respondents and the result found a negative relationship between Internet addiction and self-esteem. In that study, it was found that early Internet use increased Internet addiction indirectly through self-esteem and gaming-contingent self-worth. According to Pantic (2017), a study conducted in young people they

found, a positive correlation was found between low self-esteem and Internet addiction. These studies show that a decrease in self-esteem increases Internet addiction.

Perceived Stress

Stress is a state or mental process in which the individual discovers his/her physical and mental prosperity as a debilitating circumstance (Clark, 2010). Actually, making stress relies upon how the individual statutes the circumstances and occasions. A circumstance might be alright for somebody and might be seen as a risk for another person (Clark, 2010). All types of social, economic and psychological stresses play a role in creating and developing Internet addiction (Seifi & Fadaei, 2014). The general strain hypothesis gives a hypothetical premise to the relationship among stress and Internet habit. This hypothesis proposes that an assortment of strain or stress experienced by teenagers may cause negative feelings, which along these lines causes issue practice (Agnew, 1992). Internet addiction also may contribute to anxiety and stress (Perrella & Caviglia, 2017). Those who suffer from anxiety and stress often have immense trouble interacting and communicating with others in a healthy, positive, and meaningful way (Panicker & Sachdev, 2014). Excessive Internet use can displace valuable time that people spend with family and friends, which leads to smaller social circles and higher levels of loneliness and stress (Priscilla, 2019).

Internet addiction also may contribute to anxiety and stress (Perrella & Caviglia, 2017). Those who suffer from anxiety and stress often have immense trouble interacting and communicating with others in a healthy, positive, and meaningful way. Alavi (2011) in a study examined the relationship between psychiatric symptoms of Internet addiction in Isfahan University students; they showed that there is a significant positive correlation between psychiatric disorders such as depression, anxiety, stress, hypochondriasis, compulsion, interpersonal sensitivity, aggression, paranoia, phobias, psychosis and Internet addiction. Jafari and Fatehizade (2012), who showed that there is a significant relationship between anxiety, depression and stress on Internet addiction, this study showed that there is a significant positive relationship between Internet addiction and each of the clinical variables of depression, anxiety, stress and social phobia (Priscilla, 2019). In determining the relationship between anxiety and stress with Internet addiction, author stated that the high anxiety and stress may have existed before the Internet use, that is the anxious individuals may use Internet as an escaping way (Seifi et al., 2014).

Similarly, uneasiness and stress may happen because of addiction on the Internet, that is, the point at which the individual ends up noticeably dependent on the Internet, she/he become stressed and restless, and utilizes the Internet to reduce her/his tension and stress (Mirazaeian et al., 2011). According to study Seifi et al (2014) indicates that Internet addiction as a whole can predict the variable of depression up to 17%, the variable of anxiety up to 20% and the variable of stress up to 13%; this result is consistent the results of previous studies that showed the use of Internet is the predictor of depression and social anxiety in youths and youthful grown-ups.

Perceived Social Support

Social support refers to beneficial interpersonal communication which protecting people from the negative effects of stressful events (Cohen & Wills, 1985). It is one of the essential elements affecting individuals to adjust to the social condition, and is likewise one of the vital assets as a sort of psychological assessment. According to Cohen and Wills (1985), they believed that social support associated with psychological well-being is crucial in this

period, when rapid changes and effects are experienced. Social support is a fundamental need for adolescents to continue their social relationships at the desired level, to overcome feelings of loneliness, to adapt to the society and to sustain the state of psychological well-being. Social support can be defined as meeting the fundamental needs such as love, appreciation and self-realization and a feeling of belonging by interacting with others (such as family and friends) (Eker et al., 2001). There are many positive effects of social support to overcome the negative impact of Internet addiction. Fengqiang, et al (2016) investigated in their study directed at 363 students, that Internet habit was decidedly related with life's occasions and social help assumes the part of intervening impact between Internet addiction and aggression. People who were dependent on the system and invest a lot of time and vitality on the Internet, got less social help and in the meantime, they would encounter more contrary life occasions and pressure from family, study, work and communication (Fengqiang et al., 2016). Thus, lack of social support in real life is likely to drive people to turn to Internet to seek self-affirmation information from the social support and intimate relationship gained through online self-disclosure (Han, 2017). The less social help a man sees actually, the more disposed he is to get self-affirmation through online self-disclosure (Han, 2017).

Interaction between family members influences the health of each family member; in addition, an unhealthy member has an effect on the whole family and on the functions of the family as well (Gunuc & Dogan, 2013). Many researches explore Internet addiction disorder's influence on social support and have acquired very good results. Hence, the causal relationship between Internet addiction disorder and social support has to be confirmed in follow-up researches. They first time enter in a new environment of university making new friends and they adopt the habit of Internet use from their peers (Young, 2004). During the developmental phase of adolescence, there is gradual decrease of parental involvement and support and increase, peer influence (Helsen et al., 2000). Adolescence is the crucial period of life where young adolescence needs their parents, family members and teacher's social and psychological support. In the case of absence or minimal support young boys and girls seek to search the solution of their emotional, psychological issues in increased use of Internet (Shah et al., 2016). It is seen that working mothers, mothers with child(ren), single mothers and fathers have different characteristics in terms of social support (Cairney et al., 2003).

These findings revealed that the working mothers' children had a higher level of perceived social support. In addition, the means presented in this study indicated that the adolescents spending time with their mothers had a higher level of perceived social support and a lower level of Internet addiction (Gunuc & Dogan, 2013). According to Gunuc and Dogan (2013), the findings of the present study showed a medium level of negative relationship (r = .37 between perceived social support and Internet addiction. Low levels of perceived support increased Internet addiction levels, or high level of Internet addiction was related to low levels of perceived social support. In other words, Internet addiction is not just a problem of an adolescent but also a problem which the family is responsible for and which also influences the family through its results (Gunuc & Dogan, 2013). Therefore, if Internet addiction is taken into consideration within the context of the family, then this will help both understand the causes of Internet addiction and prevent Internet addiction.

Internet Addiction

With the outbreak of COVID-19 and evolution of technology along the creation of the Internet, the cyber world has created a culture of online communication and virtual

connectivity. Decades of Internet growth and with it the usage of computer systems have brought about a change in people's lifestyle which rely on Internet just a few clicks away for all the important and abundance of information available online. Undoubtly the Internet has revolutionized the way we think and occupies an important place in our private lives and the society as a whole (Kapahi et al., 2013). Over the last couple of years, Internet addiction has become a global concern to the public and can be classified as a health issue (Nirwana & Haliah, 2018). Internet addiction is generally defined as failure to stop the desire for excessive Internet use, loss of the importance of the time spent away from the Internet, feelings of extreme nervousness when deprived of the Internet (Young, 2004) and as a new and generally unknown clinical ailment likely to cause social problems (Young, 2007). Internet addiction or behavioral dependency on the Internet, regardless of whether it is considered as a behavioral disorder, mental impairment, or social problem, is a chronic, recurrent, and pandemic phenomenon which is associated with serious physical, financial, family, social and mental losses (Bahrainian & Khazaee, 2014). According to The Malaysian Times (2013), Internet addiction has been consistently reported to result in unfavorable outcomes including internet gambling, misuse of social media, and a host of other internet-related problems that can subsequently result in depression, suicides, and deaths. Addictive use of the Internet is fast becoming a significant problem worldwide, and university students are particularly vulnerable for the reason that the Internet is an integral part of student life (Teong & Ang, 2016). In addition, when it is during online states the addicted young adults feels excited, thrilled, uninhibited, attractive, supported, and more desirable (Syed, 2014). When them in offline situations, make him and/or her frustrated, worried, angry, anxious, and depressed. On the other hand, Syed (2014) said that the Internet brings the world so close together today, by its positive aspects such as conducting research, performing business transactions and communications, accessing library journals, and communicating with social relations. Unfortunately, the Internet is misused by some groups of individuals

Research Objectives and Hypotheses
Figure 1 shows the conceptual framework of the relationship between self-esteem, perceived stress and perceived social support on internet addiction. Two research objectives were formulated for this study which are: (1) To identify the relationships between dimensions of self-esteem, perceived stress and perceived social support on Internet addiction and (2) To identify the most influence personal factors (self-esteem, perceived stress and perceived social support) towards internet addiction. Besides, researchers have also formulated several hypotheses for this study which are:

H_{1a}:   There is a positive relationship between self-esteem and Internet addiction.
H_{2b}:   There is a positive relationship between perceived stress and Internet addiction.
H_{3c}:   There is a positive relationship between perceived social support and Internet addiction.
H_{4d}:   Self-esteem has a positive influence on Internet addiction.
H_{5e}:   Perceived stress has a positive influence on Internet addiction.
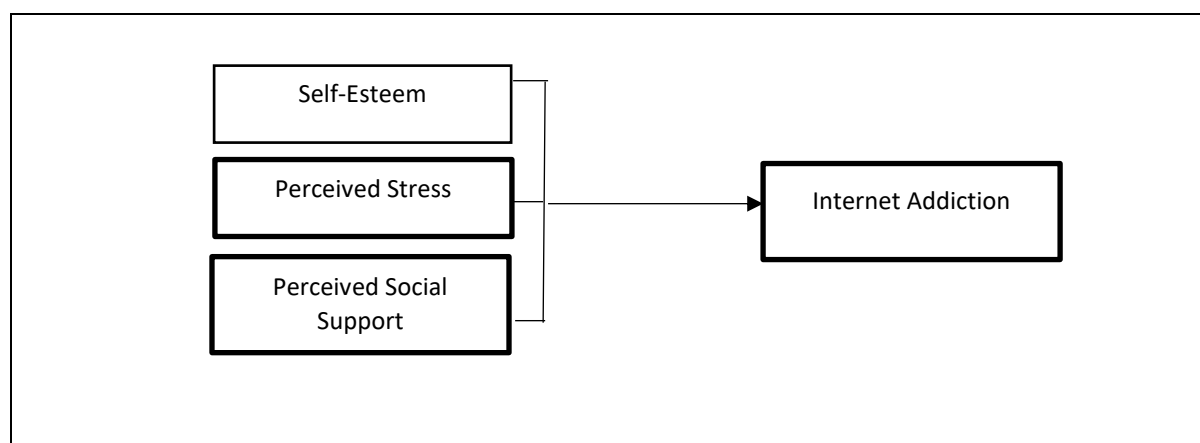H_{6f}:   Perceived social support has a positive influence on Internet addiction.

Figure 1: Conceptual Framework on the Relationship between Self-Esteem, Perceived Stress, Perceived Social Support and Internet Addiction

Methodology

This study was a pilot study where data was collected at UiTM Selangor (Shah Alam & Puncak Alam). The students are from undergraduate program students and postgraduate students (Honors) Faculty of Business and Management was represented by students Faculty of Business and Management, 220 students answered the questionnaires through convenience sampling. As instrument for personal factor consisting of 31 items was used while internet addiction was measured by using 22 items of questionnaire by (Morris, 2011; Cohen et al., 1983; Zimet et al., 1998). A five-point Likert scale was used with the values from 1=strongly disagree to 5=strongly agree.

Companies	Questionnaires Distributed	Questionnaires Returned	Return Rate (%)
UiTM Selangor (Puncak Alam & Shah Alam)	230	220	95%

Results and Discussion
Reliability Analysis

For personal factor, two domains of perceived stress and perceived social support were reported to have Cronbach's Alphas of <0.8. while other domains of self-esteem had Cronbach's alpha of >0.6, was considered acceptable (Hair, Black & Babin, 2010; Sekaran, 2005). The researchers decided to still use the instrument because it was a well-established set of questionnaires commonly used in various studies of personal factor. In fact, this instrument was found to be a reliable instrument in Malaysia's settings, whereby the Cronbach's Alpha were all greater than 0.7. Next, the instrument on Internet addiction only had one domain had Cronbach's alpha of 0.8 and above. The researchers decided to still use the instrument because it was a well-established set of questionnaires commonly used in various studies.

Pearson-Correlation and Multiple Regression Analysis

Table 1

Correlation Between Respondent Personal Factor and Internet Addiction

	1	2	3	4
Self-Esteem	1			
Perceived Social Support	.253**	1		
Perceived Stress	.704**	.565**	1	
Internet Addiction	.253**	-.256*	.341**	1

Table 1 shows the findings on the correlation between self-esteem variables from personal factor and internet addiction among undergraduate and postgraduate students from Faculty of Business and Management at UiTM Puncak Alam and UiTM Shah Alam. The result pointed there are significant positive relationships between self-esteem and internet addiction (r=.253 p<.01) (see Table 1). Therefore, hypotheses H_{1a} were supported. Next, correlation between perceived social support variables from personal factor and internet addiction among Faculty of Business and Management student at UiTM Puncak Alam. The result pointed there are significant negative relationships between perceived social support and internet addiction (r= -.256 p<.01) (see Table 2). Therefore, hypotheses H_{2b} were not supported. Lastly, correlation between perceived stress variables from personal factors and Internet Addiction among Faculty of Business and Management student at UiTM Puncak Alam and Shah Alam. The result pointed there are significant relationships between perceived stress and internet addiction (r=.341 p<.01) (see Table 3). Therefore, hypotheses H_{3c} were supported. This study supported by other study, Siyana and Zinna (2018), the correlation coefficient between internet addiction and perceived stress is (r= 0.116), which is significant. This indicates that there is significant relationship between self-esteem and perceived stress among undergraduate and postgraduate students at UiTM Shah Alam and UiTM Puncak Alam.

Table 2

Multiple Regression Analysis

Independent variables	Standardized Coefficients Beta	t	Sig.
Self-Esteem	-.174	-4.371	.000
Perceived Social Support	-.696	-20.306	.000
Perceived Stress	.857	18.356	.000
R Square		.427	
F		1289.229	
Sig. F Value		.000	
Durbin Watson		.328	

Findings from the regression analysis between personal factor variable which are self-esteem, perceived social support, perceived social support and internet addition were tabulated in Table 2. It was found that R² was .427, in which all of the independent variables such as self-esteem, perceived social support, perceived social support explained 42.7% of the variance (R square) for internet addition, with significant of F value of .000. Plus, the Durbin Watson value was .328, which was values approaching 0 - 4 indicate positive

autocorrelation, in line with one of the assumptions for bivariate and multivariate correlation analysis. The analysis revealed that perceived stress was the most influential component of personal factor on the internet addiction (β=0.857, p<.000). Consecutively, self-esteem and perceived social support dimensions were found had a negative significant to influence internet addiction among students. There are only one elements of personal factor had positive influence on internet addiction and two dimensions had negative significant influential. Therefore, it can be concluded that based on this analysis, it was found that perceived stress significantly contributed to predicting the student internet addiction during pandemic covid-19.

Conclusions

This research was conducted as a pilot study, intended to determine the relationship between personal factor and internet addiction among undergraduate and postgraduate students at during pandemic covid-19. Based on the statistical analyses, it was found that one dimension of personal factor (perceived stress) had significant and positive influences with internet addiction, while two dimension of personal factor (perceived social support and self-esteem) was reportedly had negative significant influences related to the dependent variable. Moreover, perceived stress had the most influence on internet addiction and other two dimension does not influence internet addiction in positive way among students which were self-esteem and perceived social support. In essence, stress contributes to major mental health hazards, problems both physical and mental stress related diseases. Stress makes a significant contribution to the prediction of subsequent students' performance and act as a negative predictor of academic performance in university. Studies have shown that adolescents used Internet as a means of relieving their stress (Priscilla, 2019) and regulating their negative moods. Many empirical findings have revealed significant relationship between high levels of academic stress and Internet addiction among adolescents. For example, adolescents with high level of stress are reported to be more addicted to Internet gaming. Hence, it can be assumed that from the above findings it is clear that the prevalence of addiction and stress is slowly spreading amongst the students as there is a significant association between stress and Internet addiction in this present study.

Recommendations

When students get stressed, they may develop bad feelings which may lead to negative responses. This negative coping style of negative feelings will lead to the consequences of negative behavior that was known as internet addiction. It can be clarified that the internet addiction amongst Faculty of Business and Management students at UiTM Shah Alam and UiTM Puncak Alam is induced by stress during the pandemic covid-19 which resulted in increasing use of the internet as the medium for coping with stress. Therefore, it is important to guide the students to make rational use of the internet and reduce the occurrence of internet addiction caused by individual stress. Firstly, the students should be encouraged to timely detect their level of stress to ease them to reduce negative responses to negative feelings by seeking help from their social support. Counselors, therapists, or academic advisors will be the best person in the university that students may refer to if they need help. Secondly, in relation to the first recommendation mentioned, universities and communities may take a positive action to establish an improved social support system through a series of welfare activities and psychological assistance activities to enable students to receive more

social support and more opportunities to participate in different kinds of social activities. It is hoped that by joining and participating in the social activities, students may focus on their surroundings by meeting and talking to more people and their time was spent wisely on something that is beneficial. It is due to the reason that how an individual responds to stress are influenced by their social support. If they realized that they receive sufficient social support, are being acknowledged, and are always supported, they will experience less stress. Thirdly, the student should have an understanding of the functions of the internet and regard the internet as a tool to assist their social contact and study only. Suggested to students moderately use the internet as a way to reduce the negative impact of internet addiction. As we know pandemic covid-19 has changed our lifestyles as we can't meet people, as we have to stay at home, thus most activities should be conducted online. During this condition, most students utilize social media to solve problems, entertain themselves and develop social interactions. We consider that most students prefer to spend most of their time on the internet which can leads to excessive social media or gadgets, making them more prone to poor academic performance.

Theoretical Contributions

Students who addict to Internet can involve how to do time management skills, setting goals, using reminder cards, or developing a personal inventory. Others may want to seek counselling and support groups or family therapy.

Reality Therapy has been used widely in the treatment of addictive disorders such as drugs, sex, food, and may work as well with Internet Addiction (Kim, 2007). The choice theory aspect of Reality Therapy is particularly important as it works to help addicts make choices that allow them to control their behaviour, while still meeting their needs and wants. Kim stressed group therapy as the best way to implement Reality Therapy for Internet Addiction (IA). Therapeutic factors such as universality, support, confrontation, and insight in group counselling can be effective in dealing with addictions.

Cultural authorities of universities provide the necessary facilitations in providing the culture for accurate use of the Internet and informing about the dangers of Internet addiction, the symptoms of Internet addiction and the ways of preventing it in their working plan (Priscilla, 2019).

Furthermore, provide an addiction prevention program by health people, do rehabilitation or treatment program for addicted students is important. It is also necessary to carry out preventive interventions via a systematic education program to adult who are addict to Internet. This program can contribute them to become positive and effective consumers of Internet.

Therefore, it is very important that efforts should be made on the campuses to deal with the problems related to the Internet, particularly when we know that university students are considered as high-risk group for internet addiction.

Acknowledgments

References

Agnew, R. (1992). Foundation for a general strain theory of crime and delinquency. Criminology, 30(1), 47-88.

Alam, S. S., Hashim, N. M. H. N., Ahmad, M., Wel, C. A. C., Nor, S. M., & Omar, N. A. (2014). Negative and positive impact of internet addiction on young adults: Emperical study in Malaysia. Intangible Capital, 10(3), 619-638.

Ambad, S. N. A., Kalimin, K. M., & Yusof, K. M. A. A. K. (2017). The Effect of Internet Addiction on Students'emotional and Academic Performance. E-Academia Journal, 6(1).Taylor, S., Landry, C. A., Paluszek, M. M., Fergus, T. A., McKay, D., & Asmundson, G. J. (2020). COVID stress syndrome: Concept, structure, and correlates. *Depression and anxiety*, *37*(8), 706-714.

Alavi, S. S., Maracy, M. R., Jannatifard, F., & Eslami, M. (2011). The effect of psychiatric symptoms on the internet addiction disorder in Isfahan's University students. *Journal of Research in Medical Sciences: The Official Journal of Isfahan University of Medical Sciences*, 16(6), 793–800.

Anuar, N., Mujayid, Z., Idris, A. S., & Noh, N. A. M. (2013). Prevalence of Internet Usage and Academic Purpose Among Pre-degree Student: A Case Study.

Ariffin, M., Abd Halim, F. A., & Savita, K. S. (2018). The Features of Mobile App Design Model from Dyscalculia Children Personal Factor.

Azizah, Z., Marina, D., & Marini, O. (2013). Impacts due to internet addiction among Malaysian university students. *Int J Asian Soc Sci*, 3(9), 1922-1928.

Baek, J. S. (2000). The effect of a reality therapy group counseling program on the internet addiction level,internal-external control, self-efficacy and psychological well-being internet addicted high school students*.* Unpublished master's thesis, Daegu: The Graduate School of Keimyung University.

Bahrainian, A., & Khazaee, A. (2014). Internet addiction among students: the relation of self-esteem and depression. *Bulletin of Environment, Pharmacology and Life Sciences*, 3(3), 1-6.

Bolton, R. N., Parasuraman, A., Hoefnagels, A., Migchels, N., Kabadayi, S., Gruber, T., & Solnet, D. (2013). Understanding Generation Y and their use of social media: a review and research agenda*. Journal of Service Management*, 24(3), 245-267.

Bolu, C. A., Azeta, J., Mallo, S. J., Ismaila, S. O., Dada, J. O., Aderounmu, S., & Oyetunji, E. (2020). Engineering students' virtual learning challenges during covid-19 pandemic lockdown: A case study. In 2020 IFEES World Engineering Education Forum-Global Engineering Deans Council (WEEF-GEDC) (pp. 1-5). IEEE.

Cairney, J., Boyle, M., Offord, D. R., & Racine, Y. (2003). Stress, social support and depression in single and married mothers. *Social Psychiatry and Psychiatric Epidemiology*, 38(8), 442-449.

Clark, K. D. (2010). The relationship of perceived stress and self-efficacy among correctional employees in close-security and medium-security-level institutions. (Doctoral dissertation, Walden University).

Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior*, 385-396.

Craig, R.J. (1995). The role of personality in understanding substance abuse. *Alcoholism Treatment Quarterly* 13:17–27.

Dong, E., Du, H., & Gardner, L. (2020). An interactive web-based dashboard to track COVID-19 in real time. The Lancet infectious diseases, 20(5), 533-534.

Eker, D., Akar, H., & Yaldız, H. (2001). The review form of the Multidimensional Perceived Social Support Scale's factor structure, validity and reliability. *Turkish Journal of Psychiatry*, *21*, 17-25.

Fengqiang, G., Jie, X., Yueqiang, R., & Lei, H. (2016). The relationship between internet addiction and aggression: multiple mediating effects of life events and social support. *Psychology Research*, 6(1), 42-49.

Gunuc, S., & Dogan, A. (2013). The relationships between Turkish adolescents' Internet addiction, their perceived social support and family activities. *Computers in Human Behavior*, 29(6), 2197-2207.

Han, D. H., Kim, S. M., Bae, S., Renshaw, P. F., & Anderson, J. S. (2017). Brain connectivity and psychiatric comorbidity in adolescents with Internet gaming disorder. *Addiction Biology*, *22*(3), 802-812.

Helsen, M., Vollebergh, W., & Meeus, W. (2000). Social support from parents and friends and emotional problems in adolescence. *Journal of youth and adolescence*, 29(3), 319-335.

Jackson, L. A., Eye, A., Fitzgerald, H. E., Zhao, Y., & Witt, E. A. (2010). Self-concept, self-esteem, gender, race and information technology use. *Computers in Human Behavior*, *26*(3), 323-328.

Jafari, N., & Fatehizade, M. (2012). The Relationship between Internet Addiction and Depression, Anxiety, Stress and Social Phobia in Students of Isfahan University. *Scientific Journal of Kurdistan University of Medical Sciences*, *17*, 90-101.

Jeon, J. H. (2005). The effect of the extent of internet use and social supports for adolescent depression and self-esteem. *Unpublished master's thesis, Seoul: The Graduate School of Yonsei University.*

Kapahi, A., Ling, C. S., Ramadass, S., & Abdullah, N. (2013). Internet addiction in Malaysia causes and effects. *iBusiness*, *5*(02), 72.

Kim, H. K., & Davis, K. E. (2009). Toward a comprehensive theory of problematic Internet use: Evaluating the role of self-esteem, anxiety, flow, and the self-rated importance of Internet activities. *Computers in Human Behavior*, *25*(2), 490-500.

Kim, K. H. (2007). The influence of teenager's internet addiction on their self-esteem and delinquency. *Unpublished master's thesis, Seoul: The Graduate School of Dongduk Women's University*.

Lee, J. Y. (2007). An influence of self-esteem, self-efficacy in virtual space and self-control on the internet of young people to the internet. *Unpublished master's thesis, Seoul: The Graduate School of Kyunghee University*

Leunita, D., & SireraMarecia, D. C. W. (2018). Academic Competence as a Personal Factor Influencing Resilience in School Adaptation among Children in Post War Context. In Proceedings of Kibabii University 3rd Interdisciplinary International Scientific Conference; June (Vol. 12, p. 14).

Mirzaeian, B., Baezzat, N., & Khakpoor, N. (2011). Internet addiction among college students and its impact on mental health. *Information Technology in Education, Fall*, *1390*(2), 1.

Morris, J. (2011). The relationship between Facebook and the well-being of undergraduate college students. *CyberPsychology, behavior, and social networking*, *14*(4), 183-189.

Munasinghe, S., Fookes, C., & Sridharan, S. (2018). Human-level face verification with intra-personal factor analysis and deep face representation. IET Biometrics, 7(5), 467-473.

Nirwana, N., & Haliah, H. (2018). Determinant factor of the quality of financial statements and performance of the government by adding contextual factors: Personal factor, system/administrative factor. Asian Journal of Accounting Research.

Panicker, J., & Sachdev, R. (2014). Relations among loneliness, depression, anxiety, stress and problematic internet use. International Journal of Research in Applied, Natural and Social Sciences, 2(9), 1-10.

Pantic, I., Milanovic, A., Loboda, B., Błachnio, A., Przepiorka, A., Nesic, D., & Ristic, S. (2017). Association between physiological oscillations in self-esteem, narcissism and internet addiction: A cross-sectional study. *Psychiatry Research*, *258*, 239-243.

Parush, A., Wacht, O., Gomes, R., & Frenkel, A. (2020). Human factor considerations in using personal protective equipment in the COVID-19 pandemic context: binational survey study. Journal of medical Internet research, 22(6), e19947.

Pempek, T. A., Yermolayeva, Y. A., & Calvert, S. L. (2009), "College students' social networking experiences on Facebook". Journal of Applied Developmental Psychology,30(3), 227-238.

Perrella, R., & Caviglia, G. (2017). Internet addiction, self-esteem, and relational patterns in adolescents. *Clincal Neuropsychiatry*, *14*(1), 82-87.

Priscilla, M. (2019). The Effect of Personal Factor And Psychological Factor On Purchase Intention Of Prospective Wedding Invitation Customer In Surabaya.

Salkind, N. J. (2012). Exploring Research . Hoboken.

Salkind, N. J. (2013). *Exploring research: Pearson new international edition*. Pearson Higher Ed.

Samaha, M., & Hawi, N. S. (2016). Relationships among smartphone addiction, stress, academic performance, and satisfaction with life. *Computers in Human Behavior*, *57*, 321-325.

Seifi, A., Ayati, M., & Fadaei, M. (2014). The Study of the Relationship between Internet Addiction and Depression, Anxiety and Stress among Students of Islamic Azad University of Birjand.

Sekaran, U., & Bougie, R. (2016). Research methods for business: A skill building approach. john wiley & sons.

Sekaran, U., & Bougie, R. (2016). *Research methods for business: A skill building approach*. John Wiley & Sons.

Shah, I., Siddiqui, F., & Ansari, S. (2016). Relationship between Internet Addiction and Social Support among University Undergraduates. *International Research Journal of Arts and Humanities*, *44*(44), 209.

Shotton, M. A. (1991). The costs and benefits of 'computer addiction'. *Behaviour & Information Technology*, *10*(3), 219-230.

Siyana, S., & Zinna, A. A. (2018). Loneliness, Social Support, Life Satisfaction, and Internet Addiction among Day Scholars and Hostel Students. 6(3). doi:10.25215/0603.035

Teong, K. V., & Ang, M. C. (2016). Internet use and addiction among students in Malaysian public Universities in East Malaysia: some empirical evidence. *Journal of Management Research*, *8*(2), 31-47.

Widyanto, L., & McMurran, M. (2004). The psychometric properties of the internet addiction test. *Cyberpsychology & behavior*, *7*(4), 443-450.

Xu, X., Jiang, X., Ma, C., Du, P., Li, X., Lv, S., & Li, L. (2020). A deep learning system to screen novel coronavirus disease 2019 pneumonia. Engineering, 6(10), 1122-1129.

Younes, F., Halawi, G., Jabbour, H., El Osta, N., Karam, L., Hajj, A., & Khabbaz, L. R. (2016). Internet addiction and relationships with insomnia, anxiety, depression, stress and self-esteem in university students: a cross-sectional designed study. *PloS one*, *11*(9), e0161126.

Young, K. S. (2007). Cognitive behavior therapy with Internet addicts: treatment outcomes and implications. *CyberPsychology & Behavior*, *10*(5), 671-679.

Young, K. S., & Case, C. J. (2004). Internet abuse in the workplace: new trends in risk management. *CyberPsychology & Behavior*, *7*(1), 105-111.

Zimet, G. D., Dahlem, N. W., Zimet, S. G., & Farley, G. K. (1988). The multidimensional scale of perceived social support. *Journal of Personality Assessment*, *52*(1), 30-41.