

Internet Addiction among Secondary School Students in Kota Bharu, Kelantan, Malaysia

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Abstract—This present study aims to identify the level of Internet Addiction (IA) on the behavior of secondary school students in Kota Bharu, Kelantan. Internet usage is growing over time and as a result of its excessive use could lead to an addiction. A survey is conducted in Kota Bharu, Kelantan engaging respondents in a total of 422 secondary school students in the age range from 13 to 19 years old in answering the questionnaire provided related to this research. The level of Internet addiction is assessed by the Internet Addiction Test (IAT). The researchers chose a quantitative research method and results were analyzed by descriptive analysis. The results indicated, only 2.0% of respondents had experienced the high level of Internet addiction whereas the majority of respondents possess a low level of Internet addiction with a percentage of 64.0%. Responsible authorities must insert labor efforts in ensuring parents, teachers and adolescents are conscious about the alarming perils of IA. This study is expected to assist future research and current efforts to combat IA among secondary school students.

Keywords—Internet addiction, Behavior, Secondary school students

I. INTRODUCTION

Internet usage is increasing among school students [1]. In this millennial age, it is common to figure that schoolchildren are more likely to spend their time browsing the internet than engaging with parents and family members when they are at home [1]. Changes in cognitive and social development among secondary school students are prominent factors influencing their behavior in using the internet excessively [2]. Uncontrolled usage of the internet will result in addiction. Internet addiction (IA) has been defined as heavily disproportionate amount of time spent when surfing the Internet and is defined as the incompetency in controlling the use of the internet that later could be inflicted in psychological, social, family, school and employment disorders [2]. IA is a new kind of addiction that coming from the consequence of newly develop machinery namely technology and it inevitably brings negative effects to its users [3].

The Internet usage scenario in Malaysia held little discrepancy similar to the other countries as most internet users in Malaysia are comprised of school students and institutions of higher learning pupils. Studies showed that 44% of internet users in Malaysia consist of tertiary institutions and 46% are from secondary school students [4]. Furthermore, the internet has become the primary medium in delivering the courses offered at the school level [4].

In Malaysia, adolescents under the age of 18 spent nearly six hours a day browsing the Internet along with approximately 72 percent of internet users are between the age of seven and 35 years old in 2003 [5]. Reports posted on Symantec Corporation website indicate that children in Malaysia spend over 19 hours a week surfing the internet, while parents assume their children to surf the internet for only 11 hours a week. This worrisome occasion coupled with addictive internet culture might jeopardize the healthy proportion of students' mental, physical and moral capability. Among the disadvantages are the problems of discipline and crime, inactivity, mental health, social and non-social issues, such as social responsibility and compassion. It is supported by [6] that Internet addiction caused psychological incompetence which affected mental stability and mentioned that it could lead to low academic performance.

Academics and researchers believe that excessive internet use is potentially addictive and some empirical studies illustrate that enormous number of students are addicted to use internet excessively [7]. This phenomenon is getting attention from health professionals, educators and society as it can lead to a negative impact on internet addicts including academic and professional performance disruptions [8]. In addition, [9] reported that Internet addiction causes the problem of relationship difficulties, interpersonal problems, financial problems [10] physical and mental health problems [8]. For example, Yen [11] argued that individuals who are addicted to the internet often experience other psychiatric problems. Addicted to the internet can also be landed to various problems in terms of psychosocial well-being, communication, and academic negligence or job responsibilities [12]. Research also found that psychology and social circle diminished when society makes surfing internet as a pivotal habit in everyday life [13].

In a broad way, studies on Internet addiction among teenagers in Malaysia are not as extensive as studies in a foreign country such as the United States [14]. As a result, a study was conducted on secondary school students in Kota Bharu, Kelantan, Malaysia to identify the level of Internet addiction on the students' behavior. The study is expected to contribute significantly to this area by determining the spread of electronic epidemics extent in the 21st century.

II. LITERATURE REVIEW

Evidently, Dr. Kimberley Young, a staid researcher who studies a case related to addiction towards email of a 43-year-old addicted woman is the first to publish a research regarding this matter and it was later followed by primary groundbreaking study related to addiction [10] with approximately 600 cases of people who faced trouble in handling their everyday life activities when turning off the internet because of their addiction upon extreme use of the internet. A research study in Internet addiction's realm in Europe was first initiated on technological dependency by Griffiths, trailed by an Internet dependency study; a general paper, and later followed by an intricate profound study such as on Internet gambling addiction [15]. The term "addiction" has been critiqued greatly by peer scientists thus allowed for the emergence of terminologies describing the same phenomenon but in less controversial manner [16]. Currently, zero consensus are available for a permanent nomenclature but with some of distinguish proposed terms being: Internet dependency, pathological internet use [17], problematic internet use [18] or even compulsive computer use [19]. Conversely, to refer internet itself as an addictive medium is unfavorable because many people use it as a medium to channel specific addictions by spending a large sum of time surfing the internet; however, they are not internet addicts [20]. Therefore, there have been several different proposals about IA classifications.

2.1 Terminology of IA

Addiction derived from *addicere*, a word in Latin, bearing the meaning of "bound" or "enslaved by". Originally, a special reference is referred to explain the concept of addiction as it is also used to refer various social behaviors but is often associated with alcohol abuse behavior [21]. It has been criticized heavily, the term "addiction"; by peer scientists which have allowed for the arrival of fewer controversial terminologies describing the same phenomenon [16]. Currently, there is no alignment for a consistent terminology but with some of the different proposed terms being: Internet dependency, pathological internet use [17], problematic internet use [18] or compulsive computer use [19]. On the other hand, to peg the internet as an addictive channel is not suitable considering that many are not internet addicts even though they are excessive internet users, but the internet is casted as a medium to fuel their specific addictions [22].

Essentially, IA research before the year 2000 was heavily focused on the general internet use. However, the trend has taken another route in which internet has become a crucial medium for various on-network activities. Inevitably, to figure the source of addiction, both online activities and its contents are placed in the front row prior to the medium itself. Moreover, with constant changes of the medium, the important aspect of IA is now coupled with the original

activity and both aspects of its content/activity including the medium itself [23].

2.2 Factors of Internet Usage

i. Internet Factors

Time used by being online

The time spent by a person on the internet has fortified Internet addiction. For example, Young [10] found that internet fanatics spend 39 hours a week online regularly compared to someone who is not addicted that spend only five hours a week. In addition, Internet World Stats [14] reported that on average, 25 hours per week is spent online as opposed to nine hours spent by the non-addicted person.

Internet Activities

Internet activity is also an important factor that causes someone to become addicted to the internet. There are some disadvantages associated with gender-related to Internet addiction. This can be seen through the activities of men and women which are different when using the internet. Men tend to watch films and play violent online games while women are doing a totally opposite [24]. Young [10] in his study also established that men are often engaged in casual online activities such as games, while women sought anonymous friendship and communication or often sought love in cyberspace. Usually, students prefer to spend their time browsing social networking sites. The pleasurable sensation of surfing social networking sites affected students' consciousness about the time being as they have spent too much time surfing the internet. This could be a fundamental problem in learning acquisition at school because of late night surfing has eventually led them to experience lack of sleep, hence, disturbing the learning process. Most online games such as Mobile Legends, PUBG, Fortnite: Battle Royale and other online gaming are also the main reason that demands students to spend more time with activities on the internet, leading to the addictive symptoms.

ii. Family Factors

Parental guidance

Parents play a pivotal role in controlling the usage of the internet for their children. Parents can help children to form a positive attitude. Thus, they are responsible in forming positive attitudes in children by controlling their moral conduct primarily related to Internet use activities. Steeves and Webster [25] elucidated that there is a correlation between parental supervision on the child privacy online protection by reviewing, the children aged 13 to 17 in Canada; in form of focus groups and responses received. The result indicates that parental supervision contributes to the protection of online privacy of children. In addition, tight and secure parental supervision can diminish the risky behaviors associated with the use of the internet among children.

iii. Community Factors

Peer influence

Peers have a strong influence on the behavior of a student. Some research had been conducted to examine the relationship between peer influence and the level of Internet addiction among students. Esen and Gundogdu[26] studied the frequency of Internet addiction rates among secondary school students between the age of 15 to 17 years old in Turkey using Internet Addiction Scale, Scale Peer Pressure and Social Support Scale was observed. The results show that Internet addiction rate is due to peer influence.

2.3 Impact of Internet Use

i. Positive effect

A study conducted by [27] indicated that the usage of internet by students can define their academic accomplishment when determining whether it is used educationally or the other way around. It can be seen how important the Internet is, especially in assisting education. Students will be able to find learning information easily and hastily. Search information is also unlimited as everything is just at the fingertips. Given the challenges of today's educational world, which requires fast technology to find learning information not only in text form but in the form of diagrams, tables, charts, graphics, audio, animation and more, put an urgency not only for them the educators but also students. Thus, students have been exposed to the use of the World Wide Web (www) and Hypertext Markup Language (HTML) to find the desired information[4]. The availability of the web and the links provided offer students the ability to efficiently locating any information they needed without necessarily going to the library and they can surf the internet everywhere at any time of a day.

Students can use the internet as much as possible by searching various exercises to make revision as a preparation for the future examination. Most students use the internet especially social networking sites not only to share pictures and videos, but they share the previous year's examination questions in preparation for them to sit for the next exam [28].

The internet can be seen as a mean to save up cost such as transportation cost. If students do not have enough money to buy books for learning references, they can surf the internet to find the right source of references. It is very beneficial to students because it not only saves cost but also time. In addition, using the internet is a great advantage to students where they can also add contacts and have new acquaintance. This is due to the varieties of a platform called social networking sites like Facebook and Twitter which have now become a phenomenon among students around the world as a place to share views and exchange information apart from being miles away from each other [29].

If students are confronted with pressure during their study or examination, they can seek entertainment that can reduce their stress for a while by surfing the Internet. According to Jerald

[28], he supported that the provision of social networking sites on the internet helps students to relieve stress. In this way, students will be able to re-improve their self-esteem to continue learning.

Students can also enhance their computer skills as a result of using the Internet. Students believe that for them to be proficient in attaining excel computer skill, it can be achieved by working with various social networking sites such as chat rooms, by sharing information or such [28].

ii. Negative effect

Using the internet excessively could bring negative effect to students if the use of it is abused. Internet's surfing can trap a student in absorbance, making them rather focus on it attentively than giving their attention in the learning process. This is supported by [29] that the unregulated internet usage among students has caused their focus and attention to be diverted during the class hour which could lead to a decline in academic performance [30]. In this case, students spend a lot of time browsing the entertainment-based website solely for fun that does not bring any benefit to them. The time that should be spent to review lessons is wasted by browsing social networking sites like Facebook, Twitter, and some other social networking sites. Some studies have also reported that Internet addiction has tainted students' lives. Scherer [31] in his study found that 13% of respondents had been experiencing academic disturbances and their performance declined due to the extensive use of the internet. Students who are unable to cope with their pressure effectively due to excessive use of the internet will result in poor performance in their exams [32].

Additionally, students are also vulnerable to pornography because they can access any websites without restriction. Moreover, pornography is now a youth craze because it is accessible without restraint and the excitement of watching pornography can be encouraging to students to become a sex craze at an early age, hence lead to an addiction[33]. These behaviors might also contribute to offensive juvenile crime like having sexual intercourse among secondary school students because of early exposure to pornographic material that can easily be accessed as a result of no restrictions of its release. This is especially damaging to student behavior if there is no control over the use of internet amongst them.

Another effect of excessive internet use is the lack of inclination in social communication as it has caused refrainment upon the students from mingling because they only live between the walls that they built while using the internet. This is due to the use of social websites that have significantly reduced their social interactions. They tend to care only about their own world regardless of what is going on in the environment. The interaction between parents, family members, and society also diminishes as they prefer spending time scrolling social media sites and surfing the internet. Young people also refuse to talk face-to-face, causing them to

be insensitive to feelings and surroundings and not to mention the reaction of friends and others [34].

Excessive and uncontrolled use of the Internet becomes the main reason why students are lazy to be active or participating in co-curricular activities at school [35]. After completing the school session, students would prefer to go home and willing to skip co-curriculum activities and association meetings in the evening. It is well known that the extra-curricular activities such as sports and association can nourish the body, but students seem to neglect its benefit. Students now prefer to spend their time in front of computers and smartphones just after completing their school sessions. It is alarming because it would have deteriorated students' performance in the classroom and less innovative students will be produced because of a lack of engagement in the co-curriculum activity which supposedly helped the students.

2.4 Cognitive-Behaviour Theory (CBT)

Technology addiction is seen as an issue of behavior [36]. Internet addiction also features addictive elements such as attitude enhancement, mood change, and conflict. In this case, internet addicts showed a determination to perform an activity using the internet to bypass a job. The main psychological treatment for preventing IA is by focusing on cognitive behavioral which is considered as the most prominent model [37]. As such, this Cognitive-Behavior Theory (CBT) has been used to examine behaviors such as sex, self-management, food intake and gambling [38]. It is also appropriate to investigate the use of the Internet or addiction [39].

Davis [1] introduced the theory of cognitive behavior in practicing diversity and development associated with the use of the Internet. Davis described the use of the addicted Internet as a behavioral problem and it could have a negative effect on life [40]. If an individual failed to access the internet, it will result in behavioral disruption. Symptoms of Internet addiction generally occur when individuals spend their full time browsing the internet and cause changes in behavior and interfere with one's mental health [41].

In this context, the researchers recommend the use of a simple and secure internet which is the most convenient way to cure Internet dependency [42]. Therefore, the most preferred therapeutic treatment for uncontrollable Internet use is proposed as CBT (cognitive behavioral therapy) [37]. CBT is a regular treatment for determining thoughts and feelings [43]. In a study of 114 patients, they are thought to monitor their thoughts and to recognize feelings and actions that could lead to addiction by using CBT. They improve significantly because they acquire new skills and can prevent their old behavior through the learning abilities.

This CBT therapy requires three months of treatment or about 12 sessions per week for an hour. Early stage therapy of cognitive behavior is more focused on specific behaviors and situations [44]. In the early stages, this therapy focuses on

patient-behavioral behaviors while in the next stage, the treatment gradually shifts towards cognitive and cognitive-assumptions that promote problematic behavior. In addition, CBT promotes the stimulation of activities that do not involve the use of the Internet. This can reduce the level of dopamine in the individual who is experiencing such an addiction. Participation in physical activity can offset dopamine levels and increase the effectiveness of addictive [45].

Since IA is a complex behavioral disorder, intervention should be carried out in accordance with needs. Treatment for individuals who experience increased levels of internet use allows the intervention from professionals such as physicians, social workers and psychologists in curing the addicted individuals [16].

It is important to emphasize that nowadays the treatment of Internet addiction (IA) is rarely done because the internet is now being used for various professional and educational purposes as well as all activities in everyday life that require the usage of the internet.

III. MATERIALS AND METHOD

3.1 Instrument

This study is conducted in a form of quantitative research by using questionnaires. The questionnaire used is a measurement scale intended to measure the level of Internet addiction modified from the Internet Addiction Test (IAT) questionnaire from Young (1998).

The Internet Addiction Scale in this study is a Likert scale containing 15 items using 4 sets of responses to determine the level of addiction among respondents. The responses are from Never = 1 to Very Frequently = 4. (See Table 1)

Table 1: Likert Scale Reaction Set

Never	Sometimes	Frequently	Very Frequently
1	2	3	4

The Internet addiction scales in this study consist of 15 questions. The questions are:

1. I spend the time to online longer than intended.
2. I ignore the schoolwork to have more time surfing the internet.
3. I love surfing rather than spending time with friends.
4. I have more friends on the internet than in school / residential areas.
5. I'm always looking for new friends on the internet.
6. Many people complain because I spend a lot of time surfing the internet.
7. Grade / my school work was affected because of a lot of time spent surfing.
8. I do not like when others ask about what I did when surfing.
9. I worry my life would be bored if I do not surf.
10. I get angry when others interrupt me while I surf.

11. I have trouble sleeping because of surfing until late at night.
12. Initially, I wanted to surf the internet in just a few minutes, but I took a long time because it was too funny.
13. I tried to reduce the time for internet but failed.
14. I often feel stressed, depressed or uncomfortable if I do not surf the internet.
15. When I have problems, I will be frequent and longer browsing the internet.

Respondents are asked to answer questions related to them by giving a statement on the Likert scale. The total score for this scale is determined by the sum of 15 items answered by each respondent based on the Likert scale. The aim is to determine the Internet addiction level of each respondent who answered the questionnaire. Based on this score, respondents with a score of 45 and below are classified as ordinary internet users. In contrast, respondents with a score of 46 and above are classified as addictive internet users.

Table 2: Likert Scale Score

Score	Level
0-15	No problem with Internet addiction
16-30	Internet addiction is low
31-45	Medium Internet addiction
46-60	High Internet addiction

3.2 Data Collection

In this study, the researchers collect data by using a questionnaire to collect information from the respondent. The instrument in form of questions are used by researchers because they are easy to manage; data is easily quoted and analyzed. Researchers have distributed questionnaires to secondary school students around Kota Bharu district, Kelantan. The study was conducted from July 18 to August 16, 2018, for 30 days. After the closing date, data is analyzed in descriptive statistics. Descriptive statistical analysis was first studied in all quantitative data analysis [46]. Descriptive statistics are used to describe the basic characteristics of the data in the study conducted by simply describing the data related to the study. The descriptive analysis shows the overall study of frequency and percentage of respondents' answers.

IV. RESULTS

The respondents involved in the study, age range from 13 to 19 years old. A total of 422 respondents answered the questionnaire. A total of 150 male (35.6%) and 272 female (64.5%) respondents representing both genders.

Table 3: A Number of Respondents by Gender

Gender	f	%
Male	150	35.6
Female	272	64.5
Total	422	100.0

Internet Usage: The results showed that the number of internet addictive respondents is 2.0% (Table 2). The number of respondents who experienced moderate addiction is 33.0%. The majority of the respondents are at a low level of internet use addiction of 64.0%. The rest 1.0% of respondents are at normal levels of internet use.

Table 4: The Internet Addiction Level in Respondents

Marks	Status	f	%
0 - 15	Normal	4	1.0
16 - 30	Low	270	64.0
31 - 45	Moderate	139	33.0
46 - 60	High	9	2.0
Total		422	100.0

The findings show that the number of respondents with Internet addiction rate is 2.0%. This clearly shows respondents are using the internet for positive and learning purposes. The majority of the respondents are at a low level of internet use addiction of 64.0%.

IV. DISCUSSION

The purpose of this study is to examine the level of Internet addiction among secondary school students in Kota Bharu, Kelantan, Malaysia age range from 13-19 years old by using a modified set of questionnaires from the Internet Addiction Test (IAT). No specific study has been done in Malaysia which targeted teenagers IA. A recent study explores IA prevalence among schoolchildren. Other researches focus on the status of Internet addiction among students of high school students and their impact on their academic achievement.

Overall, the number of respondents with an IA rate is 2.0%. The respondents are not so addicted to Internet surfing because they use it for positive purposes and for learning. The majority of the respondents are at a low level of internet use addiction of 64.0%. This level is measured using an addictive test designed by Dr. Kimbely S. Young [44]. This clearly shows the user feel a bit addicted. This finding demonstrated that the respondents may spend a lot of time on the Internet but can still control their internet usage.

Asian cultures is considered as one of the top countries to ever encounter with the most significant problems with Internet addiction issues as opposed to the rest of the nations [47]. In other countries, studies of IA rated fluctuation between 0.7% in Indian college students [48] to 17.3% in Qatari adolescents and young adults [49]. A recent study in Croatia shows the rate of Internet addiction is 3.4% on high school students [16]. At this moment, the cultural differences cannot be explained. This is possibly related to a previously raised issue about the differences in the results of the studies. Without a unified instrument or clinical approach to diagnose IA, it can hardly produce a correct interpretation.

V. CONCLUSION

Internet addiction is an intricate construct, definite in the focus of experts in various realms. Undoubtedly, it is crucial to have a diagnosis model along with symptomatology of internet addictive behavior particularly for those health service workers that worked involving children and youth. The recent trend of excessive internet use has demanded intervention from the professionals.

Internet addiction is a contemporary behavioral and public health problem that needs a multi-disciplinary approach to be confined. School nurses, teachers, social workers, and families should be involved in designing behavioral promotion programs to reduce the rates of Internet addiction among high school students. In addition, national efforts are needed to raise public awareness about health and behavioral risks of IA.

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