

Internet Addiction Among Adolescents in Jakarta: A Challenging Situation for Mental Health Development

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Abstract

The digital era has led to young people being exposed to the Internet at an early age, increasing the risk of problems related to emotional development. Consequently, Internet addiction can be found in 40% of adolescents in Asia. Because adolescence is a critical phase in a person's emotional development, this study explores the impact of Internet addiction on adolescents. Semistructured interviews were conducted with 19 adolescents who were purposely recruited through Internet café settings in Jakarta (n = 19). Fifteen males and four females participated in this study. The main topics were participants' characteristics, the extent and consequences of Internet use, and their knowledge about Internet addiction. Interviews were audio-recorded, transcribed, and analyzed by the author using thematic analysis. The results showed distinct characteristics and the extent of Internet use between male and female adolescents. Considering today's lifestyle, adolescents can be considered vulnerable to Internet addiction.

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Introduction

The growth of digital technology has exposed children and adolescents to the Internet starting at a young age. A study conducted in six countries in Asia: China, Hong Kong, Japan, South Korea, Malaysia, and the Philippines, showed that 62% of adolescents have their own smartphone, and that about 68% of adolescents in Hong Kong use the Internet every day.¹

Adolescents use the Internet for sending e-mails, chatting, blogging, browsing, accessing social media, and doing online shopping or gaming. About 11% of adolescents in China as well as 39% of adolescents in Japan use the Internet to play online games.² Adolescents in Asia tend to use social media, such as Facebook, WeChat, Line, or Kakao Talk to express their emotions and creativity. Often, this tendency is related to Asian culture, where a person is expected to hide their feelings.

Despite providing benefits, the Internet has some bad effects also. In addition to cybervictimization, cyberbullying, pornography, sexting, privacy violations, and cybersexual predation,³⁻⁵ another threat is the excessive use of the Internet. Using the Internet continuously for more than four hours per day can increase vulnerability to Internet addiction. The prevalence of Internet addiction varies between 4% and 19.1% in adolescents and between 0.7% and 18.3% in young adults. In Asia, about 40% of adolescents suffer from Internet addiction. The Philippines had the highest prevalence of Internet addiction among adolescents (51%), followed by Japan (48%) and Hong Kong (32%).²

Internet addiction can be experienced by everyone; however, nowadays, children and adolescents are more vulnerable because they are forming a self-identity, and social interaction is affected by the Internet and technology.^{4,5} Adolescence is defined by the World Health Organization as a phase in which the transition from absolute dependency to a relatively more independent state takes place. Erik Erikson defined adolescence as a phase of self-identity formation and autonomy.

When they are forming a self-identity, adolescents tend to experiment with a variety of

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rules. Those who succeed in finding their identity exist in a stable state, while those who do not, may suffer from identity confusion, which can lead them to self-isolation or may merge with a peer group and lose their self-identity.⁶ Internet addiction can have huge implications for an adolescent's behavior and attitude toward reality. The clinical features are similar to drug addiction. A previous study found anatomical changes in the brain. FMRI showed more dominant gray matter in the frontal lobe (especially the prefrontal area), the parahippocampal gyrus, and the striatal complex, reflecting changes in the brain's capacity for executive function in adolescents with Internet addiction.⁷

Since adolescence is a critical phase in emotional development, the author was motivated to explore the characteristics of adolescents who frequently use the Internet, the extent and consequences of Internet use, and knowledge about Internet addiction among adolescents in Jakarta.

Methodology

This study was based on qualitative research using a semistructured interview to explore the characteristics of Internet use among adolescents as well as their knowledge about Internet addiction. In addition, demographic data was collected to determine the characteristics of the participants. Thematic analysis was used to audio-record, transcribe, and analyze the interview of each participant.

The demographic data collected, consisted of gender, age, level of education, residential environment, monthly allowance, and smoking status.

The characteristics of Internet use explored in the participants, included the frequency of Internet use and its duration and purpose, online activities, the online games played most frequently, and preference for the Internet or activities involving actual interaction with other people. Knowledge about Internet addiction was explored through questions about the definition of, the characteristics of, and the reasons for Internet addiction; problems caused by Internet addiction; the relationship between Internet addicts and their friends; the participants' insight into Internet addiction; and the relations between drug use, smoking, and Internet addiction as well as adolescents' perception of

what parents should do to prevent Internet addiction. Each question was open-ended.

The participants who met the criteria for inclusion and exclusion were purposely recruited through Internet café settings in Jakarta (n = 19). The inclusion criteria were adolescents hanging out in Internet cafés in Jakarta. The exclusion criteria were (1) suffering from severe physical or mental illness or (2) not agreeing to be interviewed. The study was explained to the participants, and they gave their written consent before taking part in the study.

Results

The participants consisted of 15 males and four females. The age was range between 12 and 18 years old, with most of the participants being 14 years old (32%). The level of education varied from elementary school, to junior high school, to senior high school, to finished high school, to drop out. The largest number of participants in this study were the junior high school students were (53%).

Sixty-eight percent of the participants were living with their nuclear family, while 32% only were living with their extended family. Most of the participants received IDR 500.000 to IDR 1.000.000 for a monthly allowance (63%), and the other 37% received IDR 1.000.000 to IDR 1.500.000. Most of the participants were smokers (63%).

Nearly all of the male participants used the Internet every day (93%), and one used the Internet three times a week (7%). One out of the four female participants used the Internet for less than two times a week, while the other three used the Internet every day. The duration of Internet use varied between less than 2 hours a day to more than 12 hours a day. Most of the participants used the Internet for two to four hours a day (36.8%), followed by five to seven hours a day (31.6%). The participants who used the Internet less than two hours a day were 5.3%, while the participants who used the Internet more than 12 hours a day were 10.5%.

The female participants used the Internet to facilitate their doing homework, to communicate, to entertain themselves through social media, and to get information through online media and YouTube videos. In contrast, the male participants were attracted to the Internet to entertain themselves with online

games and to do homework. The participants used the Internet for the following activities: browsing, doing online gaming, sending e-mails, accessing social media, doing YouTube streaming, chatting, listening to music, and engaging in online gambling. The online games played most frequently by the participants were Defense of the Ancients (DotA), Counter Strike, Clash of Clans, Point Blank, and Grand Theft Auto (GTA). Most of the participants (68%) preferred online to real activities involving interaction with others.

The participants defined Internet addiction as a state where an individual (1) continuously uses the Internet; (2) makes frequent attempts to get a better connection (e.g., moving to a position/location with the best Internet connection); (3) cannot stop using the Internet; (4) wants to use the Internet more and more; (5) needs to use the Internet longer than before; (6) is always thinking about using the Internet; (7) gets easily angry, bored, and stressed if they stop using the Internet; and (8) forgets to eat and to study.

Based on participants' responses, the characteristics of people with Internet addiction can be classified into three groups: (1) emotional: irritable, easily angered, restless, and frustrated, especially when the Internet connection is slow or interrupted; (2) physical: visual problems, puffy eyes, skinniness, dirty skin, and sleep problems; (3) behavioral: neglect daily needs (e.g.,, eating and showering), cannot be separated from the Internet (e.g.,, using a smartphone when it is charging or while walking), are easily distracted (e.g.,, using a smartphone while learning in class), are quiet and introverted, isolated themselves, lie, argue with the teacher, ignore their surroundings, and according to the trends.

The reasons why people suffer from Internet addiction can be classified into four categories: (1) friendship problems in real life; (2) family problems; (3) boredom; and (4) curiosity about trying Internet features (Figure 1). Thus, for these reasons, people are motivated to use the Internet excessively since they find new friends online, discover a place to share their feelings through social media and escape from unpleasant feelings, and are challenged to achieve a victory. Excessive use of the Internet gives them pleasure, makes them not want to stop, and leads to addiction.

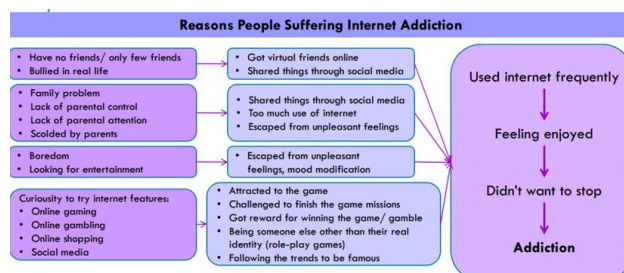


Figure 1. Diagram of reasons people suffer from Internet addiction

According to the participants, Internet addiction causes many problems, ranging widely from school problems, to family and social problems, to online problems and cybercrime, to problems with physical appearance and health. Figure 2 shows specific problems within each broader group:

School problems	<ul style="list-style-type: none"> Laziness toward studying Failing to pay attention to the teacher Sleeping in class Skipping classes Bad time management Lowered achievement Being troublesome at school, e.g., cheating, arguing with teacher Failing a grade Dropping out
Family and social problems	<ul style="list-style-type: none"> Lack of communication with family members and friends Ignoring family and surroundings Arguing with parents Lying to parents
Online problems and cybercrime	<ul style="list-style-type: none"> Pornography Was asked to send naked pictures, then got threatened Hoax Fake accounts Drifted along according to trends Stealing Wi-Fi Stealing money to play in the internet café Pictures get edited and shared without permission Online gambling
Appearance and health problems	<ul style="list-style-type: none"> Unkempt appearance Dirty skin Skinniness body Dizziness Visual problems Red eyes Sore eyes Muscle stiffness Muscle cramps Tingling Hunchback Sleeping problems
Emotional problems	<ul style="list-style-type: none"> Irritableness Holding a grudge Stressed

Figure 2. Problems caused by Internet addiction

Most of the participants agreed that there is a relationship between drug abuse, smoking, and Internet addiction. The most frequently stated opinions were the following: (1) both drug abusers and Internet addicts are lazy; (2) through social media, a person can access bad websites and end up buying drugs online; (3) a person who was bullied in real life, complained on social

media, was offered the chance to try drugs, and wound up being addicted; (4) smoking and drinking coffee help users stay awake while using the Internet.

The participants expressed the idea that people with an Internet addiction have more friends online than in real life and only want to be friends with popular people; are funnier when interacting online or through chat applications than when talking face to face; and are ignorant, quiet, socially awkward, and preoccupied with their gadgets. Slightly more than half of the participants (53%) considered themselves addicted to the Internet.

The participants had opinions on what parents should do to prevent Internet addiction, including controlling and limiting the amount of time their children use the Internet, paying more attention to as well as being firm with their children, advising their children to use the Internet for important things only and not to use their gadgets constantly, instructing their children to pray more, taking their children on vacation or inviting their children's friends to the house, and giving punishment such as taking the gadgets away from their children, not providing an allowance, and not letting their children do everything they want to do.

Discussion

In this era of globalization, the growth of the Internet network and communication tools, such as the smartphone, facilitates people receiving and sharing information faster. However, excessive and inappropriate use of the Internet can cause a user to become addicted. The Ministry of Communication and Informatics of the Republic of Indonesia reported that 80% of Internet users in Indonesia are adolescents aged 15 to 19 years old.²

In this study, all the participants were between 12 and 18 years old, with one-third of them being 14 years old and junior high school students. Most of the male participants were smokers, while none of the female participants was.

About 42.1% of the participants were at high risk of Internet addiction since they used the Internet continuously more than four hours a day. Despite spending more time using the Internet in Internet cafés, most of the male participants seemed to spend less money on Internet use

compared to the females. The reason was that some of the male participants not only played in an Internet café but also worked there to get a discount.

According to data from the Yayasan Kita dan Buah Hati, most of the students in the Jabodetabek area (Jakarta, Bogor, Depok, Tangerang, and Bekasi) use the Internet for accessing entertainment sites; 16% for watching films/videos; 14% for listening to music; 19% for playing games; 14% for downloading; 6% for online trading/shopping; and 4% for accessing social media. Only 20% of the respondents reported using the Internet for studying and 7% for reading the news.

While most of the male participants in the present study used the Internet to entertain themselves, the female participants' purposes were more diverse. The male participants found online gaming attractive as males tend to be more oriented toward aggressive and competitive activities.⁸ In contrast, the female participants were more addicted to social media, including chat applications, because they involve social interaction.⁸

The online games played most frequently by the participants, such as DotA, Counter Strike, Clash of Clans, Point Blank, and GTA, belonged in the category of Massive Multiplayer Online Role-Playing Games (MMORPGs). MMORPGs can be played by thousands of people around the world at the same time. Each player can choose their own character and personality, engage in a variety of missions, and interact with other players. These games run continuously in the virtual world, even though a player may not be playing. If a player is absent for a long period of time, they will lose their power. Success in these games is related to the length of playing period and participation of the player within the game.⁹

More than half of the participants (68%) preferred using the Internet as opposed to engaging in activities involving real interaction with other people because there was no physical space for them to do "real" activities involving personal interaction, such as football, and there were no friends to interact with in the neighborhood.

The term "internet addiction" was introduced in 1996 by Kimberly Young and defined as any online-related compulsive behavior that interferes with normal living and

causes severe stress for family, friends, loved ones, and one's work environment.¹⁰

In the present study, the definitions of Internet addiction mentioned by the participants covered the characteristics of Internet addiction stated by Young, including unsuccessful attempts to control, continuously trying to get a better Internet connection, loss of control, compulsive Internet use, intolerance, preoccupation, social withdrawal, and continued excessive Internet use despite the awareness of psychosocial problems. These characteristics, along with a loss of interest in previously important activities, were similar to those related to substance addiction.¹⁰

It appears that the emotional characteristics mentioned by the participants are similar to the withdrawal symptoms of Internet addiction. The behavioral characteristics noted by the participants covered psychosocial problems, lost control of emotion, and preoccupation with internet activities. In addition, the participants talked about physical problems, including vision issues, puffy eyes, skinniness, dirty skin, and sleep issues as characteristics of people with Internet addiction.

When asked what makes people suffer from Internet addiction, the participants gave various answers. Friendship problems, such as a lack of friends and being a victim of bullying, can cause a person to look for online friends and share their feelings through social media. Family issues and lack of parental control and attention, as well as parents who like to give punishment can encourage a person to express their feelings through social media to escape from unpleasant emotions, leading to excessive use of the Internet.

Boredom can lead a person to use the Internet to escape from unpleasant feelings. Curiosity to explore features of the Internet, especially online gaming, challenge a person to finish all the missions and receive a reward. Online gaming also gives a person pleasure in playing while using another identity. These reasons can lead a person to become attached to this form of entertainment and can cause Internet addiction.

Adolescents tend to take risks, to explore new things, and to be sensitive to peer pressure. This critical phase is involved in the development of an area of the brain that is responsible for executive control, motivation, and decision-making. The risk factors for Internet addiction

include biological, psychological, and social factors.

Genetic factors might lead adolescents to experience addiction by 40%–60%. This is related to the polymorphism of the receptor gene *CHRNA5/A3/B4*, which mediates nicotine addiction. Internet addiction itself is connected to an abnormal dorsolateral prefrontal cortical area, which is responsible for cognitive control and inhibition. In an adolescent suffering from Internet addiction, the use of the Internet affects the mesolimbic pathway, in that an increase in dopamine can cause a sense of pleasure and gratification.^{11,12}

A history of psychopathology can be a risk factor for Internet addiction. For example, a person with low self-confidence or low self-esteem may tend to employ a dysfunctional coping mechanism to escape from unpleasant feelings by using the Internet to gain satisfaction. Some adolescents with Internet addiction were abused during their childhood. Those who did not have a secure attachment to their mother during childhood are at high risk of looking for activities that will allow them to compensate for deficits of striatal dopamine. Adolescents with anxiety tend to look for a safe environment, and the Internet provides them with a virtual world. The internet provides positive reinforcement for the adolescent who uses the Internet excessively because it can bring feelings of satisfaction over previous unpleasant emotions.

During adolescence, peers are important figures in helping an individual shape a self-identity. If adolescents are not supported by adequate basic trust, they may fall into a state of low self-confidence, low self-esteem, and negative emotions, and may turn to a situation in which they seek instant gratification, such as the Internet.

The social factors of Internet addiction include family cohesiveness, parenting methods, peer support, and prosocial behavior. Cohesiveness plays an important role in shaping children's welfare within the family. A balanced cohesiveness within the family can help young family members be independent but still maintain relationships with other family members. Too high cohesiveness can be a sign of too much consensus and emotional attachment, leading to dependency, while too low cohesiveness results in little commitment and attachment to the family. Low cohesiveness of a family is reported to

produce adolescents with problematic behavior.

An authoritative parenting method is the most ideal because these parents discipline their kids to be productive and proactive in society and at the same time still provide boundaries related to their age and development as well as discipline in order to educate, not punish. They are not only assertive and consistent but also warm and rational.¹³

The authoritarian parenting method stresses behavior regulation, but provides inadequate support and warmth. Often, these parents use physical punishment, which can create a rebellious child. In contrast, in an indulgent parenting style, the parents never say "no" to whatever their children want. The children are less supervised, resulting in antisocial behavior. Uninvolved parenting does not regulate or support the child. This type of parenting can be found in a family where the parents are divorced, have a history of psychopathology, or are addicted to drugs.¹³

Adolescents need peer support to release negative emotions. Good peer support can reduce peer pressure and increase self-capacity to face stressful situations. The less peer support, the higher the risk for self-isolation and Internet addiction.¹⁴ The involvement of an adolescent in prosocial activity can increase their achievement both academically and socially. It also improves their ability to bond with the community as well as their self-enhancement and self-acceptance.¹⁵

A prospective study conducted by Lam and Peng with 1,618 adolescents aged 13–18 years old in China found that the risk of depression increased two-and-a-half-fold with pathological Internet use. Using the Internet for more than 20 hours/week, engaging in online gaming, chatting, accessing pornography, and participating in online gambling are related to aggressive behavior. Adolescents who spend more time online have a poor relationship with parents and friends. The participants in the present study agreed that a person with Internet addiction cannot maintain communication with other family members and friends. Often, they argue with and lie to their parents as well. Regarding friendships, adolescents with Internet addiction usually have more friends online than in real life and feel more attractive when interacting online, but are socially awkward and preoccupied with their gadgets in real life.¹⁶

Often, adolescents that are addicted to the Internet complain about sleep problems, back pain, muscle stiffness, muscle cramps, tingling, vision issues, eye irritation, and dizziness, as mentioned by the participants in the current study. They also described the physical appearance of a person with Internet addiction as messy, dirty, and skinny.

The participants held the view that Internet addiction causes many online problems and can possibly lead to cybercrime, such as stealing money to play in Internet cafés, hijacking accounts, engaging in online gambling, accessing pornography, and sharing hoaxes, and to cybervictimization. According to the participants, emotionally, Internet addiction can cause irritability, feelings of stress, and a tendency to hold a grudge, especially in people addicted to online gaming. A study conducted by Yen found that adolescents with Internet addiction had a higher rate of depression. Most of the participants in the present study agreed that there is a correlation between drug abuse, smoking, and Internet addiction. A previous study that found that Internet addiction often has comorbidities with drug abuse supports this.¹⁷

In the current study, more than half of the participants (53%) considered themselves addicted to the Internet. They thought that parents should not only control the use of the Internet, be firm, and discipline their children but also give them attention, affection, and spend time with them.

Conclusion

It can be concluded that there were distinct differences in the nature and extent of Internet use between male and female adolescents. Considering today's lifestyle, adolescents appear vulnerable to Internet addiction.

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