Predictors of Game Addiction in Children and Adolescents

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Abstract

The present study was based on a descriptive research design with the objective of exploring the predictive power of self-esteem and family function on the game addiction of children and adolescents. The sample group used in the present study was composed of junior and senior high school students in both general and vocational lines of study who were studying at state schools in the province of Singburi. The sample group of 390 subjects was composed of both males and females ranging from 13 to 18 years. The instrumentation employed in data collection was composed of the following: 1) a sociodemographic interview form; 2) the Game Addiction Screening Test-GAST; 3) the Five-Scale Test of Self – Esteem for Children and 4) the Chulalongkorn Family Function Inventory. The data obtained was analyzed by using descriptive and multiple regression statistics.

According to the research findings, the sample group had game addiction at a rate of 41.6% (89 cases) in males and 29.22% (52 cases) in females. Furthermore, self-esteem and family function were found to be negatively correlated to a high degree with game addiction with statistical significance at .01 ($r = -.822$, $p < 0.01$; $r = -.818$, $p < 0.01$, respectively). And according to the findings, self-esteem and family function are capable of jointly predicting game addiction in children and adolescents with statistical significance at .0001 ($F = 252.24$, $p < .0001$).

The recommendations suggested by the research findings demonstrate that self-esteem and family function are the sole factors with influence on the game addiction of children and adolescents. Therefore, people involved, whether they are family members, schools or even medical facilities and healthcare teams need to be aware of and give importance to promoting children and adolescents in gaining self-esteem; realizing the importance of self-esteem familiarize themselves with their personal strong and weak points in order to develop improved self-esteem. Furthermore, family participation should be encouraged in order to foster awareness of the importance of family function and to bring about improved family function in every aspect.

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Keywords: Game and Internet Addiction, Children and Adolescents, Family Function, Self-esteem

Introduction

Games are considered a popular type of activity enjoyed by children and adolescents as a means of relaxation from the stress of studies or an activity performed during free time. And games currently offer a greater variety in terms of game console designs, video games and computer games in the form of both online and off-line modes as well as games that can be played via Smart Phones or i-pads, etc. Changing socio-economic conditions give children easier access to a variety of games. Hence, numerous and significant problems have arisen with children, particularly problems with game addiction among children which has become a more frequently encountered problem in Thai families. Children's game addictions have created difficulties for many parents in attempting to force their children to quit playing games. Some children have such severe game addictions that they have lost interest in school and their grades have plummeted; or other children refuse to attend school, spending most of their time playing games. When they are criticized or forbidden from playing, these children will avoid trouble by sneaking off to play games in game shops. Consequently, some parents buy games for their children to play at home in order to prevent the problem of children not coming home, but this turns out to be a larger problem for both the children and their families (Chanwit Phronphadol, 2009). According to the news, the issue of children's game addiction is growing in severity because some game players play more than they should, lack responsibility and engage in aggressive behavior with aggressive emotions escalating to the commission of crimes as demonstrated in the news in newspapers such as in 2012 with the case of a 14-year old who attacked and killed his own mother because he was dissatisfied about his mother's criticism of his game playing.

Addiction to video and internet games follows the same psychological model as most other types of addiction. In this particular instance the focus of the addiction is some form of video game that provides the user with constant challenges that then manifest into rewards that feed the addiction. Although many cases of the addiction have been documented, the condition is not officially recognized as a psychological disorder. The primary indicator of a video game addiction is when an individual compulsively dedicates time and attention to playing the game to the point where daily activities and normal routines are negatively affected. This can include skipping showers and other types of hygiene and spending large portions of time alone playing the game. In extreme cases the addict might also forego eating and sleeping in order to fulfill the compulsion to play the video game. This behavior is different from someone who might play a game intensely for

one or two days because the pattern will become the default routine of the individual (Petry, N, 2014).

According to survey data on the use of information technology in 2009 in a population group aged 6 years and up by the National Statistics Office, the number of computer users was found to be 17.9 million people (29.3%) and the number of internet users was found to be 12.3 million people (20.1%). The aforementioned numbers represent an increase from 2005 when computer users amounted to only 14.5 million people (25.9%) and internet users amounted to 7.1 million people (12%). The group of users aged 15-24 years had the highest ratio of internet use (50%), followed by the group aged 6-14 yrs. (35.9%). The majority of the activities involved following up on news and searching for information at 80.6%, followed by game playing at 23.8%. Furthermore, according to a survey of the opinions of the section of the population aged 15 years and over in every province nationwide with a sampling of 10,800 people, the findings showed 20.4% of the sample group admitted that family members played online games whereby 59.3% played at internet shops and 38.5% played at home. In addition, CRM Market Research found that Thai children use internet shops to play games at a rate of 86% thereby making Thailand the leader among four nations, namely, Thailand, the Philippines, Ukraine and Russia.

According to the abovementioned statistics, it is indicated that the Thai group's highest use of the internet was in the group aged 6-24 years who commonly use the internet to play games at rates as high as 30-45 percent. Furthermore, according to the epidemiological data on the situation of game addiction among children in Thailand, the statistics for Thai children who are addicted to games amount to 14.4%, which means one in eight Thai children are confronted with the problem of game addiction (Chanwit Phronphadol, 2009).

In recent years, people have exerted their efforts toward studying numerous factors related to the problem of game addiction in children such as the factor of the children themselves and certain groups of children who might be at greater risk for game addiction than children in general; for example, children who have attention deficient disorder, children with emotional problems, depression or anxiety, children with inadequate social skills who are unable to get along with their peers, children with learning disabilities and children with low self-esteem due to failure to succeed in performing other activities (Chanwit Phronphadol, 2009; Prakaipetch Supaket, Suttham Nanthamongkholchai and Manthana Damrongsak, 2012; Chih-Hung Ko, Ju-Yu Yen, Cheng-Fang Yen, Huang-Chi Lin, and Ming-Jen Yang, 2007; Antonius J. van Rooij, Tim M. Schoenmakers, Ad A. Vermulst, Regina J.J.M. van den Eijden & Dike van de Mheen, 2010; Laura Widyanto, & Mark Griffiths, 2011). Concerning family factors, families may be dysfunctional with deficient training and poor discipline for children from early childhood, parents who do not have enough time for their children, problems with conflicts or communication issues in the family or stress due to parental over expectations (Sirichai Hongsongwonsri and Phanom Kedman, 2005; Chanwit Phronphadol, 2009; Musalin Tokani, 2012; Prakaipetch Supaket, Sutham Nathamongkolchai and Manthana Damrongsak, 2012; Chih-Hung Ko, Ju-Yu Yen, Cheng-Fang Yen, Huang-Chi Lin, and Ming-Jen Yang, 2007). Social factors include the great influence of peer groups and society on children's behavior, the many children who have game playing devices at home which prompts children to want to play games (Chanwit Phronphadol, 2009; Prakaipetch Supaket, Sutham Nathamongkolchai and Manthana Damrongsak, 2012; Antonius J. Van Rooij, Tim M. Schoenmakers, Ad A. Vermulst, Regina J.J.M. Van den Eijden & Dike Van de Mheen, 2010).

The study of Prakaipetch Supaket and colleagues (2012) which explored the factors which correlated with computer game addiction in 256 elementary school students aged 10-12 years in Khlong Luang, Pathumthani; found 52.7% of the elementary students to have game addictions and the factors correlated with statistical significance ($p < .05$) were conformity with peer groups, family relationships and self-esteem. The sample group with a high degree of conformity to peer groups was at 2.44 a greater risk for game addiction than the sample group with a low degree of conformity to peer groups. The sample group with poor family relationships was at 0.56 a greater risk for game addiction than the sample group with good family relationships. Moreover, the sample group with low self-esteem was at 0.35 a greater risk for game addiction than the sample group with high self-esteem.

Furthermore, according to the a study aimed at preventing game addiction in children and adolescents by Chanwit Phronphadol and colleagues (2009), the group of children with game addiction was found to have personal, family/child rearing and school/peer environment factors that clearly differed from the group of children without game addiction. And according to the study of Musalin Tokani (2555) who examined family function and delinquent behavior with effects on the computer game playing behavior of children and adolescents in the three southernmost provinces in Thailand, more than half of the children and adolescents played computer games at normal levels (63.5%), followed by 11.9% who were obsessed with game playing and 4.8% who were highly addicted to games. In the group of children and adolescents with addictions to computer games, family function in terms of emotional attachment and behavior control were only slightly good (X = 2.31, SD = .58 และ X = 2.48, SD = 0.45). The families of the children and adolescents whose parents performed their duties only slightly well were at 3.5 times the risk for game addiction than the families with better family function. The children and adolescents with delinquent behavior were found to be at 6 times greater risk for game addiction than the children and adolescents without delinquent behavior. Furthermore, theft was found to increase by 15.7 percent when children and adolescents had greater game addictions.

The aforementioned findings concurred with the study of Antonius J. and colleagues (2010) who conducted a study on the factors which correlated with game addiction in 467 students aged 13-16 years. According to the findings, the group of children with game addiction had higher degrees of depressive mood, loneliness, social anxiety and negative self-esteem than the group of children and adolescents without game addiction with statistical significance ($p < .001$). Furthermore, according to the study of Huang X. and colleagues (2011) who conducted a study about the effects of mental health condition, personality type and child-rearing styles adopted by parents on game addiction in 304 children, finding child-rearing styles with affection and understanding to be higher in the group of children that was free from game addiction than in the group with game addiction with statistical significance ($p < .001$). Furthermore, child-rearing styles marked by abandonment, refusal and excessive interference were more frequently encountered in the group of children and adolescent with game addiction than in the group of children and adolescents who were found to be free from game addiction with statistical significance ($p<.001$).

According to the abovementioned studies, it can be concluded that the game addiction of children is caused by multiple factors working together, whether concerning the children themselves, particularly regarding self-esteem, social skills and the effects of families; namely, family function, which is a key factor to which medical personnel have always given importance, with the current situation where game playing is becoming more and more popular among children and adolescents. The issue of concern is the subsequent impact of game playing to the point that it becomes a problem for most families and is becoming a significant national issue. In the present study, therefore, the researcher is interested in exploring the predictive ability of self-esteem and family function in game addiction in children and adolescents in order to help expand the pool of knowledge and serve as guidelines for the creation and development of preventive and corrective guidelines for game addiction among children and adolescents

Research Question

Are self-esteem and family function capable of predicting game addiction in children and adolescents?

Research Objective

To explore the predictive ability of self-esteem and family function on the game addiction of children and adolescents.

Research Hypothesis

Self-esteem and family function are capable of predicting game addiction in children and adolescents.

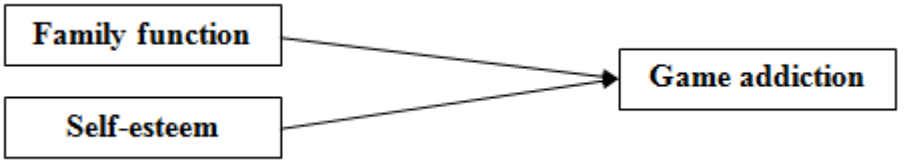
Conceptual Framework

According to the study of research related to the problem of game addiction in children and adolescents, it is evident that the game addiction of children and adolescents is caused by a combination of multiple factors working together. One of the key factors is family function because family function is a key component in the physical and mental development of children which can be either good or inefficient, in which case problems eventually arise. Hence, the researcher selected the McMaster Model of Family Function (MMFF) of Epstein and colleagues (1980) as the conceptual framework of the study. The aforementioned model explains family function, stating that the family is an open system composed of the individual sub-system, the spousal system and the sibling system. In addition, there are correlations with other external systems such as the extended family, community,

school, religious organizations, etc. Each unit in the family system is inter-related. Therefore, the behavior of one family member influences other family members. Understanding about one family member cannot be gained by analyzing that particular person alone, but requires consideration of the relationships of that person with the entire family system as well. Moreover, the types of interactions and management of the family organization are also key factors in determining the behavior of each family member.

The MMFF concept divides family function into the following six aspects: 1. Problem-solving, which means the ability to properly solve various problems occurring to ensure continued effective family function; 2. Communication, which means mutual exchanges of information in which communication can be either verbal or non-verbal, e.g. facial expressions, eye expressions, eye contact and other gestures, etc. Families with efficient communication will be able to communicate clearly and directly with target persons; 3. Roles, which means the planned behavior carried out by family members on a regular basis. Roles are divided into two aspects, namely, material roles and emotional roles, in order to maintain complete family function; 4. Affective responsiveness, which means the ability to meet mutual emotional needs with the right amount, quality and circumstances; 5. Affective involvement, which means the level of concern family members have for one another, the degree of expressions of interest, recognized value of various things performed by different family members and the degree of attachment and concern felt by each family member for one another; 6. Behavior control, which means the plan or method used by the family to control or manage the behavior of family members in order to assure that the behavior of family members remains within the scope of propriety and causes no difficulty for self or other people.

According to the concept of the McMaster Model of Family Function (MMFF) of Epstein and colleagues (1980), it is evident that the factor of family function is correlated with the behavior of children and adolescents. Nevertheless, previous literature reviews have found other factors to affect the game addiction of children and adolescents; such as individual self-esteem with the game characteristics capable of meeting the psychological needs of children and adolescents; whether in terms of fun, feelings of success, a release of aggressive pressure, these aspects have the effect of giving children challenges with more difficult play at each level. And as children and adolescents gain greater interest, they will have opportunities to win and receive awards for achievements, which positively promote players feeling of satisfaction in their ability to win or succeed.



Methodology

The present study is composed of descriptive research with the objective of exploring the predictive power of self-esteem and family function on the game addiction of children and adolescents. The sample group used in the study was composed of 390 junior and senior high school students enrolled in general and vocational studies at state schools in the province of Singburi. The samples were made up of both males and females aged 13 -18 years. Data was collected from January of 2012 to February of 2014.

Instrumentation

The research instrumentation consisted of four evaluation forms described as follows:

1. The Sociodemographic Data Interview Form – The Sociodemographic Data Interview Form was an evaluation form created by the researcher containing ten questions with multiple-choice and fill-in-the-blank answers. The questions were composed of: gender, age, educational attainment, family economy, parents' marital status, parents' occupation, reason for playing games, types of games played, places used by children to play games and time spent playing games in one session.

2. The Game Addiction Screening Test (GAST) – In the present study, the researcher used the Game Addiction Screening Test of Chanwit Pornnoppadon and colleagues (2009) in order to assess game addiction. The test contains a total of sixteen questions rated by four-level Likert scales from zero to three ("No" to "Yes"). Interpretation was divided into three groups consisting of the normal group, or persons without game playing problems; the obsessed group, or persons who were beginning to have game playing problems; and the addicted group, or persons with significant game playing problems. Instrument reliability was obtained by using Cronbach's Alpha Coefficient at 0.90 from a pilot study conducted in thirty children and adolescents with qualifications similar to the sample group.

3. The Five-Scale Test of Self-esteem for Children – In this study, the researcher used the Five-Scale Test of Self-esteem for Children of Pope (1980) translated and developed to fit the context of Thai society by Suwannee Puttisri and Chatchawan Sinlapakit (1998), which divided self-esteem into five aspects with thirty-six questions. The questions had three-choice answers valued from zero to two ("Never" to "All the Time"). High overall scores indicate patients to have received high self-esteem. Instrument reliability was obtained by using Cronbach's Alpha Coefficient at 0.78 from a pilot study conducted in thirty children and adolescents with qualifications similar to the sample group.

4. The Chulalongkorn Family Function Inventory – In this study, the researcher used the Chulalongkorn Family Function Inventory developed by Umporn Trangkasombat (2001) involving seven aspects of family function, namely, problem-solving, communication, roles, affective response, affective attachment, behavior control and normal function. The inventory contains a total of thirty-six questions rated on four-level Likert scales from one to four ("Most Accurate", "Moderately Accurate", "A Little Accurate" and "Not Accurate"). High overall scores indicate to have good family function. Instrument reliability was obtained by using Cronbach's Alpha Coefficient at 0.75 from a pilot study conducted in thirty children and adolescents with qualifications similar to the sample group.

Data Collection Methodology

The researcher presented the research project to request confirmation from the Human Research Ethics Committee, Thammasat University. The researcher then requested a letter from the Faculty of Medicine, Thammasat University, to the school administrators (Singburi School, Bang Rachan Wittaya School, Singhapahu School, Singburi Technical College, Singburi Vocational College and Inburi Industrial and Community Education College) to explain the research objectives, request cooperation in conducting the study and permission to collect data. After the schools had granted permission, the researcher met with the schools' guidance professors to introduce herself and informed them of the research objectives, research plans, data collection, research instrumentation and protection of the participants' rights in order to request cooperation in the study. The researcher set questionnaires for the guidance professors to collect data. After the professors had collected the data, the researcher went to receive data herself. This study was conducted in compliance with human research ethics and required approximately 30-45 minutes for completing evaluation forms.

Data Analysis

A computer program package was used in data analysis by using frequency distribution, percentage, mean and standard deviation to analyze the sociodemographic data, self-esteem, family function and game addiction behavior of children and adolescents. One-step Enter Regression Analysis statistics were used to study the predictive power of self-esteem and family function on game addiction in children and adolescents.

Research Findings

1. Sociodemographic Data for the Sample Group

The sample group for this study was composed of 390 subjects with 212 males (54.4%) and 178 females (45.6%) at a mean age of 15.72 years (Mean = 15.72, S.D. = 1.69). Most of the samples (59.2%) lived with parents (231 samples), 44.4% of the sample group's parents were contractors and 38.21% of the samples' families had income of 3,000 – 10,000 baht per month. The number-one cause of the samples' game playing was to relax from stress (72.1%), followed by boredom with learning (12.3%). The types of games most frequently played by the samples were adventure games such as Prince of Persia and Resident Evil (21.5%), followed by shooting games such as Special Force, Point Black and Counter Strike (21%) and Facebook games such as Farmville, Restaurant City and Pet Society (17.2%). The samples most frequently played games at home (58.5%). Concerning the time spent by children in playing games, the sample group played games both during school terms and after school terms from Monday to Friday and on weekends (100%) with over half of the sample group spending 1-3 hours per day in playing games (59.7%) and some samples (23.6%) spending more than 7 hours per day in playing games.

2. Data for the Studied Independent Variables

1. Self-esteem – The samples with game addiction were found to have lower mean aggregate and individual aspects of self-esteem scores than the samples without game addiction. The samples with game addiction had a mean self-esteem score of only 22.80 while the samples without game addiction had a mean score of 53.60 for self-esteem.

2. Family Function – The samples with game addiction were found to have lower mean aggregate and individual aspects of family function scores than samples without game addiction. The samples with game addiction had a mean aggregate family function score of only 74.43 while the samples without game addiction had the score of 116.56.

3. Game Addiction in Children and Adolescents – The samples were found to have game addiction divided into 89 male samples (41.6%) and 52 female samples (29.22%). When GAST scores and levels of game addiction were considered, the samples with obsessive game addiction were found to be the group who was beginning to have game playing problems divided into the male and female percentages of 27.83 and 15.17%, respectively (59 samples and 27 samples) while the group with game addiction or significant game playing problems were divided into male and female percentages of 14.15% and 14.04%, respectively (33 samples and 25 samples).

4. Findings of the Analysis of Correlations between Self-esteem, Family Function and Game Addiction in Children and Adolescents with Pearson's Product Moment Correlation Coefficient

When the correlations between self-esteem, family function and game addiction in children and adolescents were studied using Pearson's Product Moment Correlation Coefficient, self-esteem was found to have a highly negative relationship with game addiction with statistical significance at .01 ($r = -.822$, $p < 0.01$), meaning the samples with low self-esteem had high degrees of game addiction. In the meantime, family function had a highly negative relationship with game addiction with statistical significance at .01 ($r = -.818$, $p < 0.01$), meaning the samples with low family function will have high game addiction as shown in Table 1.

5. Findings of Enter Regression Analysis on Self-esteem, Family Function and Game Addiction in Children and Adolescents

According to the Enter Regression Analysis, self-esteem and family function were able to jointly explain fluctuations in game addiction at 70.7% with statistical significance at levels lower than .001 ($F = 252.24$, $p < .0001$) and the factors able to predict game addiction in the sample group with statistical significance consisted of self-esteem ($\beta = -.447$, $p < .0001$) and family function ($\beta = -.416$, $p < .0001$) as shown in Table 1.

Table 1 Correlation Coefficient between Self-esteem, Family Function and Game Addiction in Children and Adolescents

Studied Variables	1	2	3
1. Game Addiction	1.00		
2. Self esteem	-.822**	1.00	
3. Family Function	-.818**	.913	1.00

*p < 0.05, **p < 0.01

Table 2 Enter Regression Analysis of Predictive Factors and Game Addiction in Children and Adolescents

Predictive Factors	B	SE	β	t	p-value
- Constant	1.73	.094	-	18.434	.000
- Self esteem	-.009	.002	-.447	-5.150***	.000
- Family Function	-.011	.002	-.416	-4.790***	.000
$R = .841$; $R^2 = .707$; $F = 252.24$; p-value = .000					

*p < 0.05, p < 0.01**, p < 0.001***

Discussion of the Findings

The sample group for the present study comprised a total of 390 samples with 212 males (54.4%) and 178 females (45.6%) aged 12-18 years and a mean age of 15.72 years (S.D. = 1.69). The samples were composed of early adolescents and mid-adolescents in roughly equal numbers (40.77% and 59.23%, respectively). More than half of the samples lived with parents (59.2%) while 1 out of 3 samples had divorced parents (33.3%). Most of the sample group's parents (44.4%) were contractors with income of 3,000 – 10,000 baht per month. The number-one cause of the samples game playing was to relieve stress (72.1%), followed by boredom from learning (12.3%). The type of games most frequently played by the samples were adventure games such as Prince of Persia and Resident Evil (21.5%), followed by shooting games such as Special Force, Point Black and Counter Strike (21%) and Facebook games such as Farmville, Restaurant City and Pet Society (17.2%). The samples most frequently played games at home (58.5%). The samples played games both during school terms and during school term breaks. The samples played games every day from Monday to Sunday (100%) with over half of the sample group spending 1-3

hours per day in playing games (59.7%) and some samples (23.6%) spending more than 7 hours per day in playing games. Moreover, the samples were found to have game addiction divided into males at 41.6% (89 samples) and females at 29.22% (52 samples). The findings of this study concurred with previous findings of Musalin Tokani (2012) and Antonius. J and colleagues (2010) who found children and adolescents with game addiction to be in early adolescence to mid-adolescence, most of the samples spent more than seven hours per day in playing games and the samples spent most of their time after the end of school terms and during school terms to play games with more boys playing games than girls.

According to aggregate consideration of the findings, self-esteem and family function are able to jointly predict game addiction in children and adolescents with statistical significance ($F = 252.24$, $p < .0001$). When individual variables were considered, both self-esteem and family function are found to be able to predict game addiction in children and adolescents with statistical significance ($\beta = -.447$, $p < .0001$; $\beta = -.416$, $p < .0001$, respectively).

The findings of this study can confirm the belief that family function is an important component in pushing for and imprinting positive physical and psychological development in children and adolescents whereas inefficiency leads to subsequent problems. According to the family function structure of Epstein and colleagues (1980) who stated that each aspect of family function is interrelated and will help in promoting positive physical and psychological development in children, family function is a factor influencing game addiction behavior because family function is the role of parents in providing love, care and rearing children in society with the provision of care for family health and economy (Umaporn Trangkasombat, 2001). Negligent care is particularly found to cause children and adolescents to have high levels of game addiction (Sirichai Hongsanguansri and Nongpanga Limsuwan, 2009). In addition, children and adolescents from families where children are reared without discipline, self-control and house rules are frequently found to involved game addiction while families that spoil children or do not punish children when children are wrong (Prakaitip Niyomrat, 2004). Hence, children and adolescents have the freedom to play games without boundaries or limitations. In the meantime, families with parents who are not close to children and adolescents and have low emotional attachments with children and adolescents may have problems from stress caused by conflicts or communication problems in the family, thereby causing children and adolescents to seek solutions by playing computer games.

Self-esteem is considered an important preventive factor in helping children and adolescents effectively manage or confront pressure, stress and suffering in the lives of children and adolescents (Susan. H.,1993). Having high degrees of self-esteem will help promote children and adolescents in feeling wanted by others, namely, families, friends or teachers, causing children and adolescents to consult or request help from others in situations where children and adolescents are unable to manage problems. On the contrary, children and adolescents with low self-esteem will have negative thoughts concerning social relationships with others. Children and adolescents will view themselves as unwanted by families, friends and teachers, thereby resulting in children looking for other things to replace feelings of emptiness. And because computer games have properties capable of responding to the psychological needs of children and adolescents in terms of entertainment, feelings of success and venting aggression. These factors cause players to feel challenged by games with increased difficulty at each level and opportunities to win with immediate rewards if played frequently and over long periods of time such as scores or items, etc., which are positive support causing players to feel satisfied in playing until players win or succeed. Some players enjoy playing games for longer than they should, especially children and adolescents without proper discipline (Chanwit, 2012).

Limitations and Recommendations from the Findings

1. Recommendations for Practical Implementation of the Findings

According to the findings, self-esteem and family function are both important factors influencing game addiction in children and adolescents. Therefore, all persons involved, whether families, schools or even medical facilities and healthcare teams, must have awareness and give importance to promoting children in gaining self-esteem; recognizing individual importance, strong points and weak points in order to increase self-esteem by hosting various activities for promoting self-esteem in children and adolescents. In addition, all persons involved should focus on supporting family participation in order to create awareness of the importance of family function and improve family function in every aspect, especially affective attachment and behavior control, whereby education on the aforementioned topics may be provided by organizing family groups. Related persons, nurses and healthcare teams may visit the homes of children and adolescents to view the family environments of children and adolescents, living conditions and family characteristics in order to plan support on the topic of

promoting family participation in care and appropriately promoting family function for each child and adolescent.

2. Recommendations for Future Studies

2.1 Because the sample group in this study was located in Singburi, which is a rural province while children, and adolescents with game addiction exist in all areas nationwide; future studies should, therefore, be conducted to compare game addiction and the factors influencing game addiction in children and adolescents nationwide to determine the size of nationwide game addiction problems and determine whether the factors influencing game addiction in children and adolescents throughout the country are similar or different.

2.2 Experimental studies should be conducted by creating programs aimed at reducing game addiction together with promoting self-esteem and family function in order to better reduce game addiction in children and adolescents.

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