

PSYCHOLOGY RESEARCH PROGRESS

Margaret Adams  
Editor



# Internet Addiction

Prevalence, Risk Factors and Health Effects

NOVA

**PSYCHOLOGY RESEARCH PROGRESS**

**INTERNET ADDICTION**  
**PREVALENCE, RISK FACTORS AND**  
**HEALTH EFFECTS**

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**INTERNET ADDICTION**  
**PREVALENCE, RISK FACTORS AND**  
**HEALTH EFFECTS**

**MARGARET ADAMS**  
**EDITOR**



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## PREFACE

According to the World Health Organization, pathological addiction is the psychic, and sometimes even physical, condition arising from the interaction between a living organism and an exogenous substance, characterized by behavioral responses and other reactions that always include a compulsive need to take the substance continuously or periodically, in order to get its psychic effects and/or to avoid the distress related to its withdrawal. This book presents a review on Internet addiction, which is considered an emergent problem especially amongst adolescents, and examines the risk factors and health effects of this addiction.

Chapter 1 - During the last decades a novel addictive group, the so-called “behavioral or no-drug addictions,” has been recognized. This group includes pathological gambling, compulsive shopping, TV-internet-social network-videogame (new technologies) addictions, workaholism, sex and relationship addictions, orthorexia and overtraining syndrome. Substance and behavioral addictions show similar phenomenological features, such as craving, dependence, tolerance and abstinence, and perhaps they share a common possible pathophysiology. It is, however, controversial whether all or at least some of them should be considered real disorders or just normal, albeit extreme behaviors. Currently, the new technologies addiction is attracting a great attention for its relevant social impact, given the widespread use mobile phones since childhood and adolescence. Mobile phones partially cancelled the spatio-temporal, emotional and relational distance, and promoted novel emotional experiences and relationships that may become progressively prominent. The risk, especially in young people who are the major users of this tool, is to develop a full-fledged addiction. Increasing worsening of stress and generalized anxiety levels would be due to continuous web access and sms



and mail control, at any place and time. Preliminary findings of the authors' study, carried out in a large cohort of students from three major Italian Universities, show that the use of new technologies exceeds their real use and can be considered a real addiction. Therefore, preventive strategies of Internet abuse should be rapidly implemented to avoid the possibility of an irreversible "mind change" of next generations that can be detrimental.

Chapter 2 - Internet addiction has, as of yet, not been completely recognised as a disorder by the International Classification of Diseases ICD 10 and DSM 5.

Despite the debate on diagnostic criteria and validity, its health consequences as well as risk and protective factors have been widely proven.

Regardless of the controversy, people who suffer from this addiction experience significant limitations in their psychosocial functioning. This is why they seek treatment and help.

The main characteristics of this disorder include: worrying about the Internet and digital media; loss of control of time spent connected to digital technology; an increasing need for more time or new applications; mood repercussions; withdrawal symptoms when not connected; behaviour that continues despite negative consequences; deterioration of social relationships; and negative impact on academic and work life.

Prevalence rates are high, but differ between countries. It is estimated that prevalence rates in Europe and the USA are between 1.5 and 8.2%, respectively. In Asia, prevalence is even higher with 20%.

The prevalence rate of young people who meet Internet addiction criteria in specific populations, such as adolescent students in Hong Kong, has reached 26.7%.

Adolescents are a particularly vulnerable group. Life stressors such as social relationship problems or difficulties adapting to study life correlate positively with the disorder.

There are many explanations as to the link between the disorder and adolescence including use of the Internet to relieve stress and tension.

Risk factors include environmental factors such as parental control and family attitudes, internal and personality factors such as lack of achievement of personal goals, alienation and personal dissatisfaction.

Longitudinal studies have shown that the main psychopathological risk factors are attention deficit hyperactivity disorder, withdrawal, thought disorder, anxiety, depression and thought disorder in childhood.

The main long term effect on mental health is an increase in the incidence rate of depressive disorders.

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The high prevalence rates, risk factors and health effects of Internet addiction in adolescents require different approaches and a primary focus on the specific needs of this age group, where early detection and promotion of healthy habits are of utmost importance.

Chapter 3 - Internet addiction (IA) is a serious problem and a common disorder leading to mental health concerns especially in adolescents and young adults around the world. Although different from IA, the concept of flow refers to the state of being immersed in an activity and is often used in a positive context. This chapter discusses similarities and differences between IA and flow.

Chapter 4 - Pathological Internet use is characterized by excessive or poorly controlled preoccupations or behaviors regarding computer use that results in impairments or distress. Previous studies reported high comorbidity of Internet addiction with psychiatric conditions like affective and anxiety disorders.

Among anxiety disorders, social anxiety is often associated with relational impairments in adolescent. Many studies suggested that social anxiety is promoted by an insecure attachment style.

Attachment style plays an important role in socio-emotional relationships with others and forms the generalized basis of self-worth. Insecure attachment, in particular, implicates a higher non specific risk factor for psychopathologies. Previous study reported that attachment style predicts online social interaction in the same way that it does in the offline context. Individuals with high attachment anxiety have more frequent internet use and are constantly concerned about how others perceive them.

Insecure attachment and social anxiety were reported to be more strongly associated with Internet Addiction. Thus, the association between the insecure attachment style and social anxiety seems to have a very relevant role as risk factors for the problematic use of Internet.

Chapter 5 - This study aims to describe the initial development and to investigate the psychometric properties of an instrument for measuring the Mental Health Literacy (MHL) of Internet Addiction (IA). The formation of the items was based on the Australian National Survey of Mental Health Literacy and Stigma Youth Survey. It was designed as a vignette-based questionnaire depicting behavioural characteristics of a severe problem with Internet usage. These symptomatic behaviours were based on the description in the Young Internet Addiction Test (IAT). This newly developed instrument was administered to 348 adolescents aged between 15-18 years randomly recruited from high schools in a large city. Responses on the recognition of the

problem from the vignette with the recognition of another vignette depicting depression were compared. The convergent validity of the intended action to seek help was investigated using the Self-Stigma of Seeking Help Scale (SSOSH), and the personal identification of the problem by the IAT. The results of this study provided supporting evidence for the validity of the MHL of IA measure. As the unique measure of the MHL of IA, this could play an important role in understanding the level of MHL in the population of an emerging area of psychiatric problem.

Chapter 6 - South Korea has rapidly developed the infrastructure for a digital information society. The rapid development of its infrastructure, however, has caused social problems such as internet addiction, for which countermeasures were implemented at the national level early on. Such response measures include the 3-year master plans, annual nationwide surveys on the current conditions, training of professional counselors, counseling programs tailored to different age groups, and regional counseling centers. However, as is the case with all other policies, there are dilemmas in the Internet addiction policy in regard to the cause and true nature of digital addiction, the inter-departmental implementation systems of the central government, and the division of roles and cooperation among the central and local governments and citizens. This chapter is a reflective study about the future policies to be improved with the previous successful Internet addiction policies in S. Korea. S. Korea's experience in responding the Internet addiction problems may offer good case studies for other countries that have recently experienced it.

*Chapter 1*

# **INTERNET AND NOVEL TECHNOLOGY ADDICTION: THE LATEST EPIDEMIC**

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## **ABSTRACT**

During the last decades a novel addictive group, the so-called “behavioral or no-drug addictions,” has been recognized. This group includes pathological gambling, compulsive shopping, TV-internet-social network-videogame (new technologies) addictions, workaholism, sex and relationship addictions, orthorexia and overtraining syndrome. Substance and behavioral addictions show similar phenomenological features, such as craving, dependence, tolerance and abstinence, and perhaps they share a common possible pathophysiology. It is, however, controversial whether all or at least some of them should be considered real disorders or just normal, albeit extreme behaviors. Currently, the new technologies addiction is attracting a great attention for its relevant social impact, given the widespread use mobile phones since childhood and

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adolescence. Mobile phones partially cancelled the spatio-temporal, emotional and relational distance, and promoted novel emotional experiences and relationships that may become progressively prominent. The risk, especially in young people who are the major users of this tool, is to develop a full-fledged addiction. Increasing worsening of stress and generalized anxiety levels would be due to continuous web access and sms and mail control, at any place and time. Preliminary findings of our study, carried out in a large cohort of students from three major Italian Universities, show that the use of new technologies exceeds their real use and can be considered a real addiction. Therefore, preventive strategies of Internet abuse should be rapidly implemented to avoid the possibility of an irreversible “mind change” of next generations that can be detrimental.

## INTRODUCTION

According to the World Health Organization [1], pathological addiction is the psychic, and sometimes even physical, condition arising from the interaction between a living organism and an exogenous substance, characterized by behavioral responses and other reactions that always include a compulsive need to take the substance continuously or periodically, in order to get its psychic effects and/or to avoid the distress related to its withdrawal. The different editions of the Diagnostic and Statistical Manual of Mental Disorders (DSM) and the International Classification of Diseases, 10th edition (ICD-10) [1] continue to propose a notion of “addiction” exclusively referred to the intake of substances with psychotropic activity. This term is increasingly used also in the classification of syndromic entities arising from the development of addictive behaviors developing in the absence of substance intake. The DSM system has long avoided the term “addiction,” while preferring to apply the terms “substance use” and “dependence.” According to its 4<sup>th</sup> edition (DSM-IV) [2], significant impairment of work, school, and social life. On the other hand, the definition of “addiction” relates to that of “drug dependence”: a relevant amount of time spent to obtain the substance, increased tolerance to it, physical or psychological damage caused by its use, failed attempts to stop it, and withdrawal symptoms. The 5<sup>th</sup> edition of the DSM (DSM-5) does not separate the diagnoses of substance abuse and dependence as in the previous editions, while eliminating the confusion between the two terms, and provides criteria for substance use disorder, accompanied by those for intoxication, withdrawal, substance/medication-induced disorders, and unspecified substance-induced disorders, where

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relevant [3]. Therefore, DSM-5 substance use disorder criteria are nearly identical to the DSM-IV substance abuse and dependence criteria combined into a single list, with two exceptions. In the DSM-5 draft, the American Psychiatric Association (APA) originally proposed the inclusion of a new chapter entitled “Behavioral Addictions,” but this chapter was not included in the final edition. Nevertheless, the DSM-5 chapter “Substance-Related and Addictive Disorders” includes gambling disorder, and, as such, it reflects the increasing and consistent evidence that brain reward system may be disturbed in both drug abuse and behavioral addictions. Another behavioral addiction, the “Internet addiction,” has been included in Section 3, which encompasses conditions that require further research before they can be formally considered “full disorders.” By contrast, the proposed “hypersexuality category,” which some authors considered simply as a subtype of sex addiction, was rejected. The terms “new addictive syndromes” or “no-drug addictions” refer to a wide range of abnormal behaviors including pathological gambling, compulsive shopping, the so-called “new technologies addiction” (addiction to TV, Internet, social networks, videogames), work addiction syndrome (workaholism), sex (sex addiction) and emotional relationships, orthorexia, and overtraining syndrome. In 1999, Francisco Alonso-Fernandez [4] proposed a broad classification of the concept of “addiction” based on social regulators, while distinguishing social or legal dependencies, including legal drugs, namely those allowed for free sale (tobacco, alcohol, drugs), and socially accepted activities (such as eating, working, shopping, playing videogames, surfing the Internet), from antisocial or illegal dependencies. Both classical and new addictions share several features that include the following:

- Pleasure and relief: pleasant sensations, albeit restricted to initial periods of substance use (or of the implementation of behavior). It is the so-called “honeymoon” phase, during which a denial of the problem is always present.
- Dominance: the substance (or behavior) constantly dominates the thinking (main ideation); there is an inability to resist the impulse to take the drug (or perform the behavior), experienced in a compulsive manner.
- Craving: there is a feeling and the increasing sense of tension before taking the substance (or implementing the behavior).

- Mood instability: this is initially limited to the beginning of substance intake (or behavioral implementation), then increasingly generalized and extended to all aspects of existence.
- Tolerance: the need to increase the amount of substance (or the time dedicated to behavior) to get the “positive” effect, that otherwise lessens over time.
- Loss of control: the increasing feeling of loss of control on substance intake (or on implementation of behavior).
- Abstinence: a deep psychic and physical distress when substance intake (or the period dedicated to behavior) is stopped or reduced.
- Conflict: the consequence of chronic use of the substance (or behavior), which leads to great impairment of familial, social, educational, and work adjustment.
- Persistence: substance use (or behavior) continues notwithstanding the progressive and clear association with increasingly severe and negative consequences.
- Impact: there is the frequent tendency to use substances (or behavior) again after a period of interruption.
- Polydrug abuse and cross-addiction: high-frequency of intake of more substances (or running multiple behaviors), and “jumping” from one dependency to another. It should be noted that there is an important phenomenon of cross-dependence between substance and no-drug addictions.
- The similarity of the main risk factors: impulsivity, sensation-seeking, cognitive styles, inadequate and disturbed parental environment.

Currently, the pharmacological treatment of no-drug addictions is established only on empirical assessments and based on clinical characteristics, similar to those of obsessive-compulsive (OCD) and impulsive spectrum disorders, or substance use and mood disorders, especially those belonging to the bipolar spectrum [5]. Several treatment options have been investigated, including different antidepressants, mood stabilizers, opioid antagonists, glutamatergic modulators, and atypical antipsychotics, that showed a good effectiveness in symptoms reduction and craving control. In addition, according to our clinical experience, in most cases, it seems useful to combine psychopharmacological treatments with psychotherapeutic and psychosocial intervention, although controlled studies exploring the real effectiveness of this strategy are not available. Further, all the data on

treatment of behavioral addictions are limited, and no specific guidelines are available. The aim of this article is to present a review on Internet addiction, which is considered an emergent problem especially amongst adolescents, as well as to highlight possible interventions to stop and prevent this epidemic.

## **INTERNET AND NEW TECHNOLOGY ADDICTIONS**

In 1995, Goldberg [6] proposed the ironic and provocative introduction in DSM of a new addictive syndrome called “Internet addiction disorder.” In 1996, Young [7] published the first clinical research on a sample of 396 dependent Internet users (“dependents”) vs a control group of 100 nondependent Internet users (“nondependents”). Diagnosis was carried out by using a specific test (“Diagnostic Questionnaire”), published directly on the Web, which modified criteria for pathological gambling to provide a screening instrument for addictive Internet use; cut-off was reached when users answered affirmatively to at least 5-8 questions [7]. The use of internet becomes pathological when it takes too much time and the subjects show an impairment of work, school and sound relationships. Other unspecific and therefore under-recognized symptoms of new technology addiction can be alterations of sleep-wake rhythm, chronic fatigue (due to the common preference for nighttime web connection), reduced efficiency of immune system, abnormal appetite, poor self-care, headache, visual problems, back pain, and carpal tunnel syndrome due to prolonged mouse utilization. Some patients may be predisposed to the onset of seizures elicited by the continuous visual stimulation due to the long stay in front of a computer screen.

Young described 5 subtypes of Internet addiction [7]:

- cyber-sexual addiction (a compulsive need to access virtual sex and pornographic Web sites)
- cyber-relational addiction (excessive involvement in relations arising in the network)
- net-compulsion (compulsive behaviors related to online activities such as gambling, shopping, and e-trade)
- information overload (an obsessive search for news on the Web)
- computer addiction (a tendency to excessive involvement in virtual games such as multi-user dimensions and role playing games)



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Among the several Internet addiction variants, the so-called cyber-relational addiction is of particular interest. It is characterized by a tendency to establish friendly or even love relationships with people met online, mostly via chat, forum, or social networks. It is a form of relationship where anonymity plays a main role, that allows one to “create” specific physical and personologic profiles, often different from their real personalities. Virtual relations become progressively more important than real-life relationships, and the subject undergoes a progressive isolation, while living in a parallel world, full of idealized people, and where communication is often symbolized through a special linguistic, grammatical, and visual form called IRC (Internet relay chat) that includes well known emoticons. It is possible to distinguish two subtypes of Internet addicted people: those who have already suffered from other psychopathological disorders (most frequently mood, anxiety, eating, conduct, impulse control, but also personality and psychotic disorders), and those who have never presented, at least apparently, any psychopathological feature. In the first type of patients, the previous disorders would represent facilitating factors toward the onset of any type of addiction. In the second, by contrast, first contacts with the “substance” (i.e., the Internet) would trigger the need to maintain and intensify its “intake” (i.e., web connection). Mobile phones represent a technological tool that are increasingly widespread and sophisticated. In parallel with the substantial and rapid increase in communication services, availability of accessories, and multiplication of technical features (short message service (sms), multimedia messaging service (mms), video calling, e-mailing, instant-messaging), psychosocial aspects of this tool rapidly transformed. Mobile phones partially cancelled the spatio-temporal, emotional, and relational distances, and promoted novel emotional experiences and relationships that may become progressively prominent. The risk, especially in young people, who are the major users of this tool, is developing a full-fledged addiction. Increased worsening of stress and generalized anxiety levels would be due to continuous Web access and sms and e-mail control, at any place and time. Addictive syndrome starts when most of a person’s time and energies are spent in instrument use or related activities, and provokes personal, relational, emotional, familial, or school maladjustment. Mobile phone addiction may develop rapidly and worsen, while showing similar phenomena to those of substance addiction, such as craving, tolerance, and habituation. Other features that might indicate a dependence risk are the intense attachment towards a mobile phone, the refusal to abandon it even for a short time, and its use as the main, or even only means of knowledge and interpersonal relationships.

Excessive use of mobile phones may lead to the development of specific disorders, such as the so-called “disconnection syndrome” and “ring or phantom vibration syndrome.” Similar to most addictions, mobile phone addiction occurs more easily in individuals with low self-esteem, social difficulties, high anxiety levels, marked interpersonal sensitivity, obsessive thoughts, and compulsive behaviors. Television addiction configures an excessive (“teleabuse,” or exaggerated stay in front of TV screen) and/or abnormal (habit of TV watching alone, motionless, in strict silence, preventing contact with other people, or presenting violence if stopped during TV watching) TV use.

## **PHARMACOLOGICAL TREATMENT OF NEW TECHNOLOGY ADDICTIONS**

No specific indications exist for drug treatment of Internet addiction. Recent data have suggested the potential effectiveness of bupropion and methylphenidate in reducing videogames craving [8, 9] and of naltrexone in reducing the search for pornographic sites [10]. A case report suggested the possible effectiveness of escitalopram (10 mg/day in internet addiction) [11], which was subsequently confirmed in an open-label trial [12].

## **CONCLUSION**

Despite the significant amount of clinical, genetic, biochemical, and neuropsychological data, the field of behavioral addiction is still largely unknown [13-15]. Epidemiological data are meager, and there is a wide heterogeneity of tools used for diagnostic assessment, treatment, and interventions. Similarly, the pathophysiology of behavioral addictions, which might lead to specific treatments, remains obscure and mainly hypothetical. However, it is interesting to mention that neuropsychological tests have revealed that behavioral and drug addictions share similar abnormalities in complex executive functions, such as planning, attention, response inhibition, elaboration of problem-solving strategies with tendency to perseveration error, exaggerated reward sensitivity, maintenance of abnormal and increased levels of excitation, and deficit of self-control. The need to satisfy a drive is always present, with the increasing inability to postpone it [13]. Such deficits have

been linked to disturbances of the reward system, so-called “reward deficiency syndrome,” and of frontal lobe modulation, particularly of the prefrontal cortex. Moreover, biochemical and genetic studies in drug addictions and pathological gambling have suggested the possible role of altered 5-HT, norepinephrine, and dopamine, as well as glutamate and betaendorphin regulation [14, 15]. Therefore, there is an urgent need for studies to explore patients with different behavioral addictions by brain imaging techniques of peripheral markers of central nervous system parameters. In conclusion, it is not surprising that no specific prevention protocol is available, especially in vulnerable populations, nor standardized treatment and rehabilitation interventions. It is not yet possible to define the essential levels of assistance (LEA) that are scientifically oriented; in some cases (e.g., gambling), a pushy, persuasive, incentive-based bearer of deceptive messages is legally permitted [16]. Behavioral addictions, therefore, represent one of the most important challenges of contemporary psychiatry. Clinical data, neurobiological profiles, and response to specific therapeutic strategies would indicate their intimate connection with substance addiction. However, there is a current and increasing debate on whether all, or at least some of them, should be considered real disorders or just normal, albeit maladjusted, behaviors [17, 18]. The hope is, in the near future, to build a standardized, comprehensive, and multidisciplinary approach that is able to coordinate biochemical and genetic research, behavioral restructuring, social/environmental conditioning factors (risk and resiliency) analysis, programming and organization of social and health systems, political acts, and appropriate legislative changes leading to focused prevention and tailored pharmacological treatment, when necessary. The school and the families are the main educational agencies that should be involved in increasing awareness on the possible dangers related to excessive Internet use, but also politicians should make their part. It would appear, therefore, very important to implement educational programs related to behavioral addictions in order to prevent the onset of psychiatric disorders in childhood and adolescents. Teenagers could become motivated to understand the phenomenon by seminars and/or meetings involving also parents and teachers with the support of psychologists and psychiatrists who should prepare guidelines to approach new technology use by exploring cognitive, emotional, behavioral and social factors related to it.

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*Chapter 2*

## **TOWARDS AN EPIDEMIOLOGICAL MODEL OF INTERNET ADDICTION**

*Andres Fontalba-Navas<sup>1,\*</sup>, Virginia Gil-Aguilar<sup>1</sup>  
and Jose Miguel Pena-Andreu<sup>2</sup>*

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### **ABSTRACT**

Internet addiction has, as of yet, not been completely recognised as a disorder by the International Classification of Diseases ICD 10 and DSM 5.

Despite the debate on diagnostic criteria and validity, its health consequences as well as risk and protective factors have been widely proven.

Regardless of the controversy, people who suffer from this addiction experience significant limitations in their psychosocial functioning. This is why they seek treatment and help.

The main characteristics of this disorder include: worrying about the Internet and digital media; loss of control of time spent connected to digital technology; an increasing need for more time or new applications; mood repercussions; withdrawal symptoms when not connected; behaviour that continues despite negative consequences; deterioration of social relationships; and negative impact on academic and work life.

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Prevalence rates are high, but differ between countries. It is estimated that prevalence rates in Europe and the USA are between 1.5 and 8.2%, respectively. In Asia, prevalence is even higher with 20%.

The prevalence rate of young people who meet Internet addiction criteria in specific populations, such as adolescent students in Hong Kong, has reached 26.7%.

Adolescents are a particularly vulnerable group. Life stressors such as social relationship problems or difficulties adapting to study life correlate positively with the disorder.

There are many explanations as to the link between the disorder and adolescence including use of the Internet to relieve stress and tension.

Risk factors include environmental factors such as parental control and family attitudes, internal and personality factors such as lack of achievement of personal goals, alienation and personal dissatisfaction.

Longitudinal studies have shown that the main psychopathological risk factors are attention deficit hyperactivity disorder, withdrawal, thought disorder, anxiety, depression and thought disorder in childhood.

The main long term effect on mental health is an increase in the incidence rate of depressive disorders.

The high prevalence rates, risk factors and health effects of Internet addiction in adolescents require different approaches and a primary focus on the specific needs of this age group, where early detection and promotion of healthy habits are of utmost importance.

**Keywords:** Internet addiction, prevalence, risk factors

## INTRODUCTION

In today's society, Internet use has become a necessary tool for daily tasks related to work or leisure; it is a means of communication through which information is shared.

Incorrect use of this source of gratification is called Internet addiction. It is an extreme way of using this tool; the person is incapable of stopping the behaviour despite the negative consequences on his or her daily life.

This phenomenon is relatively recent and has not yet been included in international diagnostic classifications.

A new element introduced by the DSM 5 (Diagnostic and Statistical Manual of Mental Disorders) is the inclusion of non-substance addictions in relation to psychiatric diagnoses [1].

There was some dispute over whether to include Internet addiction under behavioural addiction. In the end the team decided to only include Internet

gaming disorder based on previous studies that described its characteristics, which also include other non-work-related Internet use such as communication via social networks. This particular disorder's prevalence rates and severity data resulted in it being considered a significant behavioural addiction [2].

The difficulties involved in describing diagnostic criteria for this disorder include deciding how to approach it due to the similarity between internet addiction and, for example, substance use addictions. It can also be considered a type of compulsive gambling or impulse control disorder.

One of the main reasons for its inclusion in the manual are the neurobiological similarities between the disorder and substance use disorders due to the involvement of brain reward circuits and similar symptoms.

The DSM 5 describes Internet gaming disorder as a “condition for further study” and can be found in section III.

According to the DSM 5 the diagnostic criteria for Internet gaming disorder includes repetitive use of Internet-based games, often with other players, that leads to significant issues with state of functioning. Five of the following criteria must be met within one year:

- 1) Preoccupation or obsession with Internet games.
- 2) Withdrawal symptoms when not playing Internet games.
- 3) A build-up of tolerance—more time needs to be spent playing the games.
- 4) The person has tried to stop or curb playing Internet games, but has failed to do so.
- 5) The person has had a loss of interest in other life activities, such as hobbies.
- 6) A person has had continued overuse of Internet games even with the knowledge of how much they impact a person's life.
- 7) The person lied to others about his or her Internet game usage.
- 8) The person uses Internet games to relieve anxiety or guilt—it's a way to escape.
- 9) The person has lost or put at risk an opportunity or relationship because of Internet games.

The inclusion of the disorder in the DSM 5 is a great advance as it will trigger more research on this category and encourage alternative therapeutic measures in a clinical setting [3].



Despite the controversy, it is an emergent disorder with health consequences which affect the state of functioning of people who experience it. This is linked to suffering and results in the patient seeking help and treatment.

## EPIDEMIOLOGY

High prevalence rates of Internet addiction have become a global phenomenon; however, these rates differ from country to country. These differences could be explained by the use of heterogeneous definitions of the disorder or different diagnostic criteria.

In an extensive meta-analysis by authors Cheng and Li [4], prevalence rates of 164 samples from 31 countries were compared and their conclusion was a global prevalence of 6%; at the same time, they associated differences in prevalence with indicators of Internet access as well as subjective, environmental and quality of life indicators.

Most prevalence studies focus on young people, fewer extensive epidemiological studies have been carried out on the general population; like the ones in the USA (which showed a prevalence of 1%) [5], or in Norway (0.7%) [6].

One of the countries most concerned about the disorder is China. In Hong Kong, prevalence rates of Internet addiction in adolescents ranged from 17% to 26.8% during high school years [7].

Through the study on "Child Safety and Morals of Children on the Internet", we can conclude that all children use the Internet regularly and consistently. The connection time is moderate. Thus, 65% of children are connected less than 5 hours a week. 66% of children use the Internet as a leisure tool, ignoring its wide range of information 11% of children who are connected, develop characteristics of Internet addiction disorder, 50.5% of those only find the information they want sometimes or rarely, which highlights their lack of skills to function successfully in the network [8].

The study on "Child Safety and Habits of Children in the Use of Mobile Telephony" [9], it was noted that: 24% of children make calls and 50% send text messages (SMS) daily. The same study demonstrated that 30% of children who use mobile phones have already purchased games for it, 72% of children report having received SMS messages inviting them to participate in sweepstakes or gambling, 28% felt overwhelmed and 10% say they have been

terrible and forced to do without their mobile, and 11% claim to have lied to their parents and even stolen money at some stage to recharge the balance.

In the study on “Video Games, Children and Parental Responsibility”[10], it was noted that during school days, 9% of children engaged in play between 1 and 2 hours. At the weekend, 23% play more than 2 hours, 57% use pirated games, 27% discussed with their parents the amount of time spent playing, 14% of respondents say they are “hooked” on a video game, 11% recognize that video games can make them more violent and 57% of children recognize that they play games in which they destroy things and torture and kill people.

The high prevalence of this disorder and its possible long-term consequences requires the development of preventive activities in this susceptible population.

## **PREDICTORS OF INTERNET ADDICTION**

Studies on predictors and risk factors have also mainly been carried out on the adolescent population, which is also where the highest prevalence rates have been found.

Adolescents are a particularly vulnerable group. Life stressors such as social relationship problems or difficulties adapting to study life can correlate positively with the disorder.

There are many explanations as to the link between the disorder and adolescence including use of the Internet to relieve stress and tension.

Risk factors for the development of Internet addiction include [11]:

- Diagnosis of attention deficit hyperactivity disorder
- Hostility
- Withdrawal
- Anxiety/depression
- Parent/child conflicts
- Not living with the mother
- Use of Internet to play games

On the other hand, identified protective factors include:

- Good communication between parent and child
- Positive youth development

The use of diagnostic models also allows predictive sociodemographic factors to be identified with sensitivity and specificity in relation to incorrect Internet use [12].

There is an open debate on whether emotional problems can be the cause or consequence of Internet addiction. Strittmatter and cols. [13] demonstrated that only previous problematic Internet use symptoms and emotional problems were significant predictors of problematic Internet use 2 years later. The categorical stability of problematic Internet use in adolescents over those 2 years was lower than previously reported. However, current problematic Internet use symptoms were the best predictor of later problematic Internet use; emotional symptoms also predicted problematic Internet use over and above the influence of previous problematic Internet use. Both problematic Internet use symptoms and emotional problems may contribute to the vicious cycle that supports the perpetuation of problematic Internet use.

In regard to social factors, living in metropolitan areas was associated with problematic Internet use in European adolescents [14]. Students not living with a biological parent, low parental involvement and parental unemployment showed the highest relative risks of both maladaptative Internet use and problematic Internet use.

Another cross-sectional study implemented within the framework of the European Union project: "Saving and Empowering Young Lives in Europe" showed correlation between problematic Internet use, conduct problems and hyperactivity/inattention stronger among females, while the link between problematic Internet use and symptoms of depression, anxiety and peer relationship problems was stronger among males [15]. The association between problematic Internet use, psychopathology and self-destructive behaviours was stronger in countries with a higher prevalence of problematic Internet use and suicide rates. These findings ascertain that psychopathology and suicidal behaviours are strongly related to problematic Internet use. This association is significantly influenced by gender and country suggesting socio-cultural influences.

## **CONSEQUENCES ON HEALTH**

Internet addiction is characterised by an elevated amount of time spent carrying out activities on the Internet, playing computer or video games in a non-work related setting. Mood swings are also present as well as worrying about the activity, loss of sense of time spent carrying out the activities, sense

of needing more time or new applications, withdrawal symptoms and persistence of the behaviour despite its negative consequences. [16].

There is evidence indicating that Internet addiction subjects had multiple structural changes in the brain. The gray matter atrophy and white matter fractional anisotropy changes of some brain regions were significantly correlated with the duration of internet addiction in a study developed by Yuan and cols. [17].

A voxel-based morphometric study comparison between Internet addiction subjects and matched healthy controls indicated decreased gray matter volume in several clusters, i.e., the bilateral right dorsolateral prefrontal cortex, the supplementary motor area, the orbitofrontal cortex, the cerebellum and the left rostral anterior cingulate cortex, after controlling for potential confounding variables including age, gender effects and total intracranial volume.

In addition, gray matter volumes of the right dorsolateral prefrontal cortex, the left anterior cingulate cortex and the right supplementary motor area showed a negative correlation with months of internet addiction.

These changes in brain structure are very important because they appear during adolescence, which is a developmental stage. This neural substrate can explain part of the high comorbidity with mental disorders too.

Among adolescents, Internet addiction has been repeatedly found to be related to attention-deficit/hyperactivity disorder, depression, anxiety, stress, negative self-perception and suicidal ideation [18].

The results of the study of Yen and cols. revealed that adolescents with Internet addiction had higher self-reported ADHD symptoms, which correlate with Internet addiction mostly in the regression model for both male and female students [19].

Medication-naïve adolescents with ADHD showed significantly reduced brain activation in the right inferior prefrontal cortex during successful motor response inhibition and in the precuneus and posterior cingulate gyrus during inhibition failure, both of which correlated with behavioral scores of ADHD. This abnormal brain activity is associated with impairment of inhibitions in performance, and this could explain the difficulty in controlling internet use. [20].

The relationship between depression and Internet addiction is well established. Depression levels are associated with those who become addicted to the Internet and clinical depression is significantly associated with increased levels of personal Internet use. Low self-esteem, poor motivation, fear of

rejection, and the need for approval associated with depression contribute to increased Internet use [21].

Similar neurochemical changes in serotonergic transmission can occur in Internet addiction and depression [22].

In the clinical presentation, patients suffering from IA are preoccupied with internet usage, so they are more likely to be noncompliant with psychotropic medication and psychotherapy and the treatment of symptoms can be difficult.

Depression and anxiety can be part of the internet withdrawal syndrome. In regard to anxiety disorders, excessive internet usage may serve as a maintaining factor by reinforcing the avoidance of anticipatory anxiety stemming from stressful situations and life events [23].

In a systematic review Lam identified seven studies that contained potentially useful information to address the question of whether addictive Internet gaming and problematic Internet use are related to sleep problems, including insomnia and poor sleep quality, but with the need of new well-designed studies with a clear focus on the relationship under investigation, strong research methodology, and the use of valid approaches for the assessment of the exposure and outcome variables, in order to search for stronger evidence [24].

This comorbidity or direct consequences of excessive and pathological use could be ill-health effects on the adolescents such as impaired psychological well-being, less peer and family interaction, poor academic performance, and difficulties achieving psychosocial developmental tasks [25].

## DISCUSSION

The high prevalence of this disorder and its possible long-term consequences requires the development of preventive activities in this susceptible population.

The best way to approach misuse of internet is to start from earlier levels of intervention, such as prevention and health promotion. Young people are a very susceptible group to work with in the early stages of these kinds of disorders regarding detection and prevention [26].

Our main aim is not to convince the teenager of our point of view. In fact, they should dissent when they disagree and they may give an opinion based on their own perspective. It is important that adolescents have the possibility to maintain their judgments respecting tolerance and to incorporate new

knowledge about healthy behaviors. In this sense, a type of intervention is needed that encourages active learning, with a high level of interaction between participants. Health professionals must try to develop psychological defense strategies in adolescents against this harmful behavior with emphasis on early detection [27].

Most adolescents might not think that this is a behaviour problem. In this sense, it is very important to consider that adolescents need a different approach, and a different focus. For this reason, professionals should consider talking about positive habits to this population as this will have better results. In this sense, this study will try to overcome the negative image of mental health services and illnesses and will build a new perspective based on the promotion of healthy habits and activities.

The promotion of mental health has important health benefits on individuals and in society in general; promoting the welfare and quality of life of the population. The development of activities to promote mental health involves the creation of individual, social and environmental conditions that enable optimal psychological and physiological development [28].

Health promotion activity must aim to explain warning signs of internet addiction to adolescents, because the negation of this problematic behavior is very usual. On the other hand, early detection enables an intervention in the early stages of this disorder. A positive perspective of internet use is very important, because if we only use a negative view of this behavior in adolescents it is possible that we inadvertently induce it.

The strategy of promoting mental health in Internet addiction is a priority. This strategy must work by establishing objectives and intersectoral tagging activities, aimed at encouraging greater well-being and quality of life of this vulnerable population.

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*Chapter 3*

**INTERNET ADDICTION  
AND FLOW EXPERIENCE**

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**ABSTRACT**

Internet addiction (IA) is a serious problem and a common disorder leading to mental health concerns especially in adolescents and young adults around the world. Although different from IA, the concept of flow refers to the state of being immersed in an activity and is often used in a positive context. This chapter discusses similarities and differences between IA and flow.

**Keywords:** addictive behavior, positive psychology, optimal experience, rehabilitation

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## INTRODUCTION

The Internet is a tool, which is now essential to everyday life. We use the Internet to gather information, shop, and communicate with others. Therefore, the Internet is tremendously beneficial to us.

However, sometimes if we are too enthusiastic about the Internet, we are prone to have troubled daily lives. Such a state is sometimes referred to as Internet addiction (IA). IA is a serious problem and a common disorder leading to mental health concerns especially in adolescents and young adults around the world [1]. In fact, we reported that in university students, the prevalence of IA was 15% [2].

Previous studies have reported that IA is positively associated with depression and anxiety [1, 3, 4, 5]. One study reported that IA is positively associated with low academic achievement, inadequate social support, and communication skills [6]. Another reported that IA is negatively associated with self-esteem [7]. Thus, IA has adverse effects on academic achievement, communication skills, and mental health.

Although different from IA, the concept of flow refers to the state of being immersed in an activity and flow is often used in a positive context. The definition of flow is “the holistic sensation that people feel when they act with total involvement” [8].

We have the following evidence regarding flow: (1) In college students, frequency of flow experiences showed significant correlation with mental Quality of Life (QOL) [9]; (2) subjective stress was significantly reduced in a high-flow group when compared with a low-flow group of college students suggesting that a brief flow experience could alleviate subjective stress [10]; (3) in community-dwelling elderly people, physical health was significantly better in groups experiencing flow or relaxing during important daily activities in comparison with the apathetic group [11]; (4) in college students, ambiguity tolerance and shyness were associated with frequency and quality of flow experience [12]; (5) in undergraduate students the following was observed: negative correlation between frequency of flow experience and self-disgust; significant correlation between duration of flow activity and guilt; and quality of flow experience and guilt [13]; (6) people who tended to achieve flow were associated with a significantly higher mental QOL and coherence than average in unemployed people [14]; (7) among male undergraduate students, frequency of flow was significantly reduced after 1 year when compared with the baseline values [15]; (8) in undergraduate students, energy consumption in prefrontal activation was negatively correlated with feeling of satisfaction

during a flow experience [16]; (9) inferiority feelings were significantly lower in undergraduate students who tended to achieve flow than in those who did not [17]; (10) in undergraduate students, schizotypal personality and distress associated with paranoid ideation were associated with the degree of flow experience [18]. Thus, for the most part, flow has a healthy influence on people.

This chapter describes the relationship between IA and flow experience [2]. Participants in this study were 160 Japanese undergraduate students (mean age,  $20.07 \pm 1.27$  years; 96 males and 64 females) [2].

### **INTERNET ADDICTION AND FREQUENCY OF FLOW EXPERIENCE [2]**

Of participants, 160 were classified into the Internet addiction group (IAG;  $n = 24$ ) or into the non-Internet addiction group (NIAG;  $n = 136$ ) by the Japanese version of the Internet Addiction Test [19]. Flow in daily life was also assessed for frequency and quality using the Flow Experience Checklist [20]. Results showed that the frequency of flow experience was significantly higher for IAG. This result might reflect the “absorption” common to IA and flow. In this study, absorption represents the frequency of flow experience in one activity. Therefore, the one activity is likely to be using the Internet. A previous study suggested that experiencing flow in more than one activity has a positive impact on QOL [14]. Therefore, on the Internet as well, being immersed in a plurality of activities is important. In future research, studying the relationship between IA and an evaluation of activities for experiencing multiple flows will be necessary.

### **INTERNET ADDICTION AND QUALITY OF FLOW EXPERIENCE [2]**

In contrast, quality of flow experience did not differ significantly between IAG and NIAG. Thus, NIAG showed the possibility of experiencing flow in activities other than the Internet. In social life, any activity wherein an individual is so enthusiastic that the enthusiasm hinders a normal daily life can be defined as being undesirable. However, being immersed in a favorite activity that does not cause trouble for others is good. Therefore, if an

individual does not bother others, there is no need to intervene forcefully. In many cases, people with IA have also been a problem in terms of public health because they cause a nuisance to others as well. Therefore, even though IA might be problematic, immediate intervention and support are unnecessary. However, after sufficiently assessing and understanding the individual's background, performing intervention and support might become necessary.

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*Chapter 4*

## **THE ROLE OF ATTACHMENT STYLE AND SOCIAL ANXIETY IN INTERNET ADDICTION**

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### **ABSTRACT**

Pathological Internet use is characterized by excessive or poorly controlled preoccupations or behaviors regarding computer use that results in impairments or distress. Previous studies reported high comorbidity of Internet addiction with psychiatric conditions like affective and anxiety disorders.

Among anxiety disorders, social anxiety is often associated with relational impairments in adolescent. Many studies suggested that social anxiety is promoted by an insecure attachment style.

Attachment style plays an important role in socio-emotional relationships with others and forms the generalized basis of self-worth. Insecure attachment, in particular, implicates a higher non specific risk factor for psychopathologies. Previous study reported that attachment style predicts online social interaction in the same way that it does in the offline context. Individuals with high attachment anxiety have more

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frequent internet use and are constantly concerned about how others perceive them.

Insecure attachment and social anxiety were reported to be more strongly associated with Internet Addiction. Thus, the association between the insecure attachment style and social anxiety seems to have a very relevant role as risk factors for the problematic use of Internet.

**Keywords:** attachment theory, social anxiety, internet addiction

## INTRODUCTION

The deep relationship between men and technology is rapidly becoming more complex and more intricate in the daily life and influencing the everyday routine of everyone. At the same speed of the diffusion of this human-technology relationship, the attention and the scientific interest are quickly and extensively directed at the consequences of this relationship.

Particularly, Internet and the virtual reality have a very important role as factors of social, cultural and psychological changing.

The new technologies magnify our action on “virtual realms”, amplifying, hence, the concept of reality and increasing the psychic and sensorial human faculties. Internet and its instruments act, therefore, almost as “psychic prostheses”, allowing us to enhance the dimensions of the virtual experience in nearly inexhaustible way. Moreover, the technology and Internet can make the reality more recreational, giving back to the mind a more acceptable and harmless world, very similar to the reverie of the game and of the omnipotence, and then a world able to raise a sensation of strengthened efficiency of mental faculties. The creation of this sensation can create temporary dissociative parentheses in which everyone can take cover.

The problematic use of Internet can be considered in relation with micro/macro dissociative phenomena. It is intended on a continuum from normal to pathological, in which the common element is to isolate and snatch the Self from the reality unintelligible by the ordinary state of consciousness.

In a certain sense, Internet and its network creates for us in an artificial way the “refuge of the mind” (Steiner, 1993) as a defensive dissociation, separating a part of information or of mental processes from the rest of consciousness. As reported by Young (1998), the dissociation is a process of active inhibition that normally excludes internal or external perceptions from the field of consciousness and it is a defence mechanism that protects the

ordinary consciousness from a flood of excessive stimuli. Therefore, the dissociation is adaptive and it has an aim that is both defensive and supplementary in relation with the reality.

However, the separate part of consciousness that becomes a mental identity independent from the global personality detracts the relation with the reality. This mechanism and the easiness and the rapidity with which the experience online can be replicated and protracted seems to play a crucial role in the development of Internet addiction (Caretti and La Barbera, 2005).

## **INTERNET ADDICTION: A DIFFICULT DEFINITION**

The term “*addiction*”, borrowed from the drug’s dependences, is been broadly accepted for the abuse behaviour of the web (Holden, 2001). The use of “*addiction*” (from Latin “*addictus*” = slave for debts) underlines as the subject becomes a slave of the solution that he finds for cope the mental suffering, is an act that has in it the illusion of doing something to confront and overcome the difficulties of everyday life.

Coherently with the multifaceted essence of the web, and with the several worlds that Internet opens, its abuse and addiction behaviour extends in different contexts and has different features depending on the specific use of the web. Thus, in the last years there was a intensive debate to reach an unambiguous definition of the Internet addiction and there have been many proposals for its categorization.

In the latest edition of the Diagnostic and Statistical Manual of Mental Disorders- Fifth Edition (DSM-5) the Internet Addiction Disorder (IAD) is introduced as a clinical condition that requires more observation and more scientific data.

The Internet Addiction Disorder has different shared psychopathological aspects with other addiction behaviours, such as the craving, the abstinence and negative effects on the social relationship. Moreover, some preliminary studies reported a dysfunction in opioid receptors, as in many other dependences (Nestler, 2005; Mick and Hollander, 2006). These evidences can indicate that Internet Addiction can be considered as a discrete addiction behaviour.

The clear comprehension and definition of the disorder as a clinical condition can also help to raise awareness among people towards a more responsible use of the web. At the other hand, the recognition of the IAD, separated from the other psychopathologies, can increase the stigmatization

toward the Internet use also creating specific pathologies for each technological devices, such as smartphone addiction, virtual reality addiction, etc... .

Some of the symptoms reported by the studies on IAD are very similar to symptoms of the depression and anxiety disorders, moreover many studies showed a co-morbidity with these disorders (Can et al., 2012; Carli, et al., 2012; Tonioni et al., 2012; Caplan, et al., 2007; Shapira et al., 2000). In addition, the Internet addiction shares several elements also with the Impulse Control Disorder (ICD) and some researchers proposed to consider the IAD as another aspect of the ICD category (Beard e Wolf, 2001; Shapira et al., 2000; Treuer et al., 2001).

These issues underline the unclear pathogenesis of the IAD and its inclusion in a defined diagnostic category. Despite the increasing number of researches in this field, we need still more evidences on the reliability of the criteria, on the stability of the disease during the lifetime and more importantly the risk factors that leads to the onset of the Internet Addiction.

The development of psychopathology is always a combination of cultural, psychological and biological dimensions. It is particularly true for an addiction behaviour like IAD that include new technologies which are broadly changing our everyday life.

The Internet addicted people spend more time on the interactive activities offered by the web, they showed a high social inhibition, a low level of self-esteem, a tendency toward the sensation seeking, high levels of hostility and a dysfunctional family functioning compared to people non-addicted (Moody, et al. 2001; Kim et al., 2009; Ghassemzadeh, et al., 2008; Whang et al., 2003; Young, 1998).

These studies have led researchers to hypothesize the role of social anxiety and the family relationship as the possible risk factors of IAD.

Among anxiety disorders, the social anxiety is usually more pronounced in adolescents and young adults. Many studies suggest that the social anxiety is positively associated with the insecure attachment style.

In addition, insecure attachment with social anxiety were reported to be more strongly associated with Internet Addiction. These associations between these variables attachment style, social anxiety and Internet Addiction need to be further explored that might open new perspectives to better explain IAD.

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## SOCIAL ANXIETY

The social contacts and the interpersonal relationships has been identified as having a primary role in the development of problematic use of Internet (Paris, et al., 2002; Kraut et al., 1998). Internet can be used to satisfy social needs that are not satisfied in *face to face* interactions. Some people have difficulty to express themselves in the daily social environments, which trigger anxiety and fear of the others' judgment. The intense fear of embarrassment, humiliation, and negative evaluation by others in social situations, and a tendency to avoid feared situations is better known as social anxiety disorder. People with social anxiety have the desire to make a positive impression of one's self on others and tend to minimize their chances of making undesired impression (Schlenker and Leary, 1985).

Central tasks during childhood and adolescence are to become autonomous from the family, acceptance among peers, develop romantic and sexual interests, in order to create a sense of integration of the Self, which is fundamental in social relations (Ladd, 1999; Buhrmester, 1990; Kelly and Hansen, 1987).

A dysfunctional management of these tasks can lay the groundwork for a weak self-integrity that exposes the individual to the fear of others' judgment, perceived as threat for self-identity.

The maladaptive familial environment, parental criticism and over-control (Whaley, et al., 1999; Bruch and Heimberg, 1994), peer rejection, violence (LaGreca and Lopez, 1998; Slee, 1994; Vernberg, et al., 1992) and perceived traumatic social-evaluative situations (Hofmann, et al., 1995; Barlow, 1988) during the growing period can negatively affect the building of strong self.

Each of these experiences has the potential to set in motion negative feedback loops involving anxiety, avoidance behaviors, and potential deficits in social competence. The pathways from a reliance on parental guidance to the building of a structured sense of self, the reaching of self-regulation and the creation of stable relationships with peers can be broadly modeled by parent's behavior. If the parents put excessive importance and reliance on the other's approval or if there is a lack of communication and emotional regulation by parents, it is probable that child experiences low sociability and shyness (Melfsen, et al., 2000). An anxiety behavior of parents, such as avoiding social situations, can transmit the same social fear to the young individual, contributing to creation and maintenance of social anxiety (Bruch, 1989). Previous studies reported that adults with social anxiety tend to perceive their parents as more restrictive to engage them in social activities

with relatives and friends, encouraging social isolation and avoidance (Bruch and Heimberg, 1994; Bruch, et al., 1989).

During the development, thus, it is fundamental that parents enhance the shifting from a reliance to an emotional self-regulation of child that is necessary for the creation of intimate relationship with peer.

In presence of an effective menace, social anxiety may be an evolutionistic adaptive warning system that is in charge to ensure the strength of social bonds, alarming the individual when it's or other's behavior increase the likelihood of social threat (Miller and Leary, 1992). This "social warning system" should alert the individual to stop erroneous social behaviors that put him in possible rejection or isolation position, increasing instead the prosocial behaviors that increase the social networking. However, the occurring of the psychological and environmental variables mentioned above can lead the "social warning system" to become dysfunctional and produce a pathological social fear. But because the social warning system can lose own adaptive functionality, the social anxiety needs to be maintained in a vicious circle that strengthen the dysfunctional aspects. Cognitive biases, deficit in social skills and operant conditioning are considered the three principal factors involved in the maintenance of social anxiety. From a cognitive perspective, the fundamental nucleus of social anxiety is a strong desire to make a positive presentation to others associated with a perceived inability to do so (Musa and L'épine, 2000; Clark and Wells, 1995). These individuals have the conviction that their behaviors will elicit rejection and negative judgments from others and they use these convictions as parameters to evaluate whole social situation, resulting in negative self-statements in social performances (Hartman, 1986) and leading to behavioral manifestations of anxiety. From the other hand, the physiological reactions are interpreted as signals of negative social performance and this interpretation, strengthening the negative convictions, will affect further social interaction increasing anxiety and reinforce poor self-efficacy in social conditions. This self-focused attention and the subsequent negative thoughts about own public reactions interfere with satisfactory social functioning and sustain a self-perception as not socially skilled. In this way it become easy the creation of the vicious circle. The negative experience of self in social situation reinforces behavior of avoidance of social contacts. Avoiding the social situations that create fear and anxiety, the individual receives negative reinforcement when experiences a sense of relief upon the termination of anticipatory anxiety. Unfortunately, these avoidance coping patterns can have deleterious effects on development that normally lead the individual to reach new and mature social abilities, and can

produce negative effects which are difficult to modify with age (Ollendick et al., 2000). For example, the fear of trying out social rejection and failure can greatly prevent the opportunities to improve social interaction skills, that are necessary for developing friendship or romantic relationship, joining peer groups and becoming autonomous from parental guidance.

In this perspective, Internet offers an incredible possibility to create a “protected place” in which the social interactions can be controlled. As reported by Caplan (2003; 2002), the preference for online social interaction can be considered as a cognitive individual difference characterized by beliefs that one is safer, more efficacious, more confident, and more comfortable with online interpersonal interaction and relationship, reducing the social anxiety present in *face to face* interactions.

## ATTACHMENT THEORY

Attachment is a deep and enduring emotional bond that connects one person to another. Attachment theory is a psychological model emphasizing the importance of “attachment” in regards to personal development and describes the dynamics of long-term and short-term interpersonal relationships between humans. Attachment theory was conceptualized by John Bowlby (Bowlby, 1969) based on the concepts from ethology, information processing, developmental psychology, and psychoanalysis. The basic principle of attachment theory is that an infant needs to develop a relationship with at least one primary caregiver for the child's successful social and emotional development, and in particular for learning how to effectively regulate their feelings (Levy and Orlans, 1998).

Attachment theory conceptualizes “the propensity of human beings to make strong affectional bonds to particular others” and Bowlby hypothesizes that an attachment system evolved to maintain proximity between infants and their caregivers under conditions of danger or threat (Bowlby, 1977). Children, gradually, internalize experiences with caregivers in such a way that early attachment relations come to form a prototype for later relationships outside the family. It identifies two key features of these internal representations or working models of attachment: (a) whether or not the attachment figure is judged to be responsive to calls for support and protection; (b) whether or not the self is judged to be as a person towards whom anyone and the attachment figure, in particular, is likely to be responsive in a helpful way (Bowlby, 1977,

p. 204). The first indicates the child's image of others; the second indicates the child's image of the self.

More recent formulations view the attachment system as functioning model that continuously provide children a sense of security which facilitates exploration of the outer world by the child (Ainsworth et al., 1978; Sroufe and Waters, 1977). The quality of early attachment relationships is thus rooted in the degree to which the infant has come to rely on the attachment figure as a source of security (Ainsworth and Bowlby, 1991).

## **ATTACHMENT STYLES**

On the basis of infants' responses to separation and the eventual reunion with caregivers in Strange Situation (a structured laboratory procedure to observe m) four distinct patterns of infant attachment are identified: secure, anxious-resistant, avoidant, and Disorganized/disoriented (Main, 1995).

### **Secure Attachment**

A toddler classified as securely attached explores freely in the presence of the caregiver, typically engages with strangers. The child is often visibly upset on separation with the caregiver and readily welcomes the caregiver's return. Parents who consistently respond to their child's needs contributes to create securely attached children. Such children are certain that they their parents will be responsive to their needs and they will receive nourishment both physically and emotionally. Securely attached children if distressed, seek proximity to the attachment figure and are readily comforted which provides a sense of security in them (Ainsworth, 1968).

### **Anxious-Resistant/Ambivalent Insecure Attachment**

A child with an anxious-resistant attachment style will typically explore little and is often wary of strangers, even in the presence of the caregiver. When the caregiver departs, the child seems to be highly distressed. The child is generally ambivalent and often displays anger towards the caregiver on return (Ainsworth, Blehar, Waters and Wall, 2015). The Anxious-Ambivalent/Resistant strategy is a response to unpredictably responsive

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caregiving, and the displays of anger towards the caregiver on reunion can be regarded as a conditional strategy for maintaining the availability of the caregiver by taking control of the interaction (Crittenden, 1999; Solomon, George and De Jong, 1995). It was found that children with abusive childhood experiences were more likely to develop this attachment. The study also found that children with such attachments are more likely to experience difficulties in maintaining intimate relationships as adults (McCarthy and Taylor, 1999; Simpson et al., 1992).

### **Avoidant Insecure Attachment**

A child with the avoidant insecure attachment style will avoid or ignore the caregiver, showing little emotion when the caregiver departs or returns. The child will not explore its surrounding very much regardless of presence of the caregiver. Infants classified as avoidant did not exhibit distress on separation, and often ignored the caregiver on their return and do not seek contact with the attachment figure when distressed. These avoidant behaviours allows the infant to maintain a conditional proximity with the caregiver: close enough to maintain protection, but distant enough to avoid rebuff. Such children are likely to have a caregiver who is consistently insensitive and unresponsive to their needs (Ainsworth, 1969).

### **Disorganized/Disoriented Attachment**

If the behaviour of the infant does not appear to the observer to be coordinated in a smooth way across episodes to achieve either proximity or some relative proximity with the caregiver, then it is considered 'disorganised' as it indicates a disruption or flooding of the attachment system (e.g., by fear). Infant behaviours in the Strange Situation are considered as disorganised/disoriented when display overt fear; contradictory behaviours occurring simultaneously or sequentially; have stereotypic, asymmetric and jerky movements; or freezing and apparent dissociation (Ainsworth, et al. 1978).

It was reported that most of the mothers of these children had suffered major losses or other trauma shortly before or after the birth of the infant and had reacted by becoming severely depressed. In fact, 56% of mothers who had lost a parent by death before they completed high school subsequently had



children with disorganized attachments (Main and Hesse, 1990). Further studies, while emphasising the potential importance of unresolved loss, have stated that an unresolved trauma in mother's infancy tend to be associated with disorganised attachment with their children (Solomon, J. and George, C. 2006; Madigan et al., 2006)

## **ATTACHMENT IN ADULTS**

According to Bowlby's theory (Bowlby, 1977), the attachment representations of themselves and others in relationships subsequently shape expectations about future relationships (Bowlby 1980). Thus, a person might develop beliefs about whether others would be consistently available or not, and whether they would be responsive and caring, or cold and rejecting; in parallel they would develop beliefs about whether she or he was worthy of receiving love and care, and about the value of close relationships.

When testing this theory in studies of adults, most researchers have focused on the systematic pattern of relational expectations, emotions, and behaviours that result from one's attachment style in childhood. Attachment styles reflect both the person's sense of attachment security and the ways in which he or she deals with threats and distress. People with avoidant attachment tend to rely on deactivating strategies like trying not to seek proximity, denying attachment needs, and avoiding closeness and dependence on others in relationships (Mikulincer and Shaver, 2007). These strategies develop in relationships with attachment figures disapproving closeness and expressions of need or vulnerability (Crowell and Treboux, 1995). In contrast, adults with high attachment anxiety tend to rely on hyperactivating strategies – energetic attempts to achieve proximity, support, and love combined with lack of confidence and show resentment and anger when fail to do so (Rutter, 1995). These strategies develop in individuals who had inconsistent attachment figures and worry about being unloved or abandoned and thus seek reassurance. On the other hand, the adults secure attachment considers themselves as worthy of love and care and have a positive representation of the others. This arises when children have received consistently warm and responsive caregiving in their infancy (Ainsworth et al., 1978).

The attachment representations, thus, can be conceptualised as schema for future relationships, formed in response to experience with childhood caregivers, which drive attachment behaviours, such as reassurance seeking or avoidance of relationships (Waters, Merrick, Treboux, Crowell

and Albersheim, 2000). The interactions with inconsistent, unreliable, or insensitive attachment figures may interfere with the development of a secure, stable mental foundation. This may reduce resilience in coping with stressful life events; and predispose a person to break down psychologically in times of crisis (Ainsworth, 1968; Bowlby, 1988). Attachment insecurity can therefore be viewed as a general vulnerability to mental disorders.

## **ATTACHMENT STYLES AND SOCIAL ANXIETY**

As previously explained, social anxiety is a disorder characterized by an intense fear of embarrassment in social situation and a fear of been judged negatively, that lead to a compromised social functioning. Moreover, social anxiety has a negative effect on the ability to have a social or romantic relationship, on the participation in discussion at the workplace and on joining recreational group (Schneier et al., 1994; Erozkhan, 2009). Social anxiety is in co-morbidity with other conditions, such as loneliness and depression (Eng et al., 2001, Erozkhan, 2009) as well as it commonly reported to be positively associated with insecure attachment (Hazan and Shaver, 1990; Mikulincer et al., 1993; Shaver and Brennan, 1992; Erozkhan, 2009; Cash et al., 2004; Eng et al. 2001; Kashdan et al., 2008; Erozkhan, 2009).

Attachment style seems to influence interpersonal relationship, while social anxiety seems to be an indicator of adaptation difficulties in such relationships (Erozkhan, 2009).

Many factors play an interactive role in the development of social anxiety, such as genetic factors, behavioural inhibition, parent-child interaction, social skills deficits, social cognition processing, parental psychopathology and peer relationship. Regarding parent-child interaction, much investigation demonstrated association between insecure attachment style and later development of mental health problems, like anxiety disorders (Warren et al., 1997; Joan and Neville, 2004).

Thus, the type of parent-child relationship have a considerable effect on social development and childhood anxiety disorders, such as social anxiety (Joan and Neville, 2004).

Previous research reported the deep relationship between attachment styles and social anxiety, proposing two hypothesis: the first one regards the possibility that children with ambivalent or avoidant attachments are at risk for development of anxiety symptoms; the second hypothesis is that only

ambivalent attachment is strongly related to the anxiety symptoms (Brumariu and Kerns, 2008).

Regarding the first hypothesis, it was found that social anxiety was positively correlated with fearful, preoccupied and dismissing attachment styles and negatively correlated with secure attachment (Erozokan, 2009); moreover, attachment security was associated with good social functioning and no differences between avoidantly and ambivalently attached children were found. It means that secure attachment may represent a factor of protection against social anxiety and a manifestation of constructive coping strategies: securely attached children have positive social expectation and are more able to establish group belongingness, compared to insecurely attached (avoidant as well as ambivalent) children; in contrast, people with insecure attachment style, having negative working models of themselves, tend to feel social avoidance and social inadequacy and to experience hypervigilance and worry about social rejection in their own relationship, reducing their communication skills (Bohlin et al., 2000).

According to this perspective, studies reported that college students with a secure attachment perceived more social support from their peers (Kobak and Sceery, 1998; Parade et al., 2010) and experienced more positive friendship qualities and lower friendship conflict (Lieberman et al., 1999; Parade et al., 2010). Moreover, adolescents with a secure attachment style reported less social anxiety (Papini et al., 1991; Parade et al., 2010).

The social anxiety seems to play a mediating effect, influencing the development and the quality of interpersonal relationships.

The second hypothesis regards the possibility that social anxiety is related specifically to ambivalent attachment. It was demonstrated that there were higher levels of reported school and social phobias among adolescents who were ambivalently attached in infancy (Bar-Haim et al., 2007), and that ambivalent attachment was correlated with distress specific to new situation, that is one of three dimensions of social anxiety; instead, secure attachment was not correlated with generalized social avoidance and distress (Brumariu and Kerns, 2008). It means that ambivalent attachment seems to be a greater risk for some aspect of social anxiety symptoms than either secure or avoidant attachment. Children with avoidant attachment reported less social anxiety in new situation, indicating that avoidance may serve an adaptive function in some contexts such as unfamiliar low intimacy social situation, while it may interfere with forming close friendship or romantic relationship. Thus, in this specific situation, avoidance may contribute to the development of social anxiety.

The most studies about the relationship between attachment style and social anxiety concern a non-clinic population.

Each of these studies supported a strong relationship between attachment style and the development of social anxiety. In particular, secure attachment style seems to be a protection's factor for the risk of social anxiety, while insecure attachment style, with high levels of anxiety or avoidance, is associated to deficits in interpersonal relationships; it represents a great risk for anxious symptomatology.

## **SOCIAL ANXIETY, ATTACHMENT STYLE AND INTERNET ADDICTION**

As reported above, Internet addiction has been conceptualized as similar to impulse control or addictive disorders, there is still a debate of whether Internet addiction should be considered as a primary disorder (Lai et al., 2015).

Problematic Internet Use (PIU) and Internet addiction negatively impact the individual's social and emotional functioning (Young, 2009) disrupting the daily lives of users and relationships with family members (Young and Rogers, 1998; Lin and Tsai, 2002; Young, 2004) as well as a dysfunctional family functioning can make individuals vulnerable to Internet addiction (Yen et al., 2007; Park et al., 2008).

In literature has been amply demonstrated the association between Internet addiction and social anxiety (Lai et al., 2015; Taranto et al., 2015; Lehenbauer-Baum et al., 2015; Casale et a., 2015; Lee and Leeson, 2015; Weinstein et al., 2015; Yen et al., 2012; Lee and Stapinski, 2012; Tonioni at al., 2012; Caplan, 2007; Lo, 2005).

Social anxiety has also been well-documented in leading significant distress and impairments in social, daily routine, academic, and family functioning (Kashdan and Herbert, 2001; Beidel et al., 1999), and often followed by substantial emotional distress, namely dysphoria and depression (Roza et al., 2003).

According to the findings previously explained, the attachment appears to be a predictor of social anxiety.

Poor family functioning has been found to be associated with youths' addictive Internet use, and parental use of active and restrictive mediation has been found to reduce online risk. This association resulted stronger for higher

levels of attachment, communication, and comfort in family, implying that the effectiveness of restrictive mediation varies with the degree of warmth and support in the general family environment (Chng et al., 2015).

The Attachment Theory is an inborn motivational system that plays a significant role for the entire life cycle, in adolescence and adulthood. The attachment system leads individuals to seek a safe retreat and a secure base from close and intimate relationships (Bifulco and Thomas, 2012; Schimmenti et al., 2014). The representations built during the first experiences of interactions with primary caregivers could be predict the pathological Internet use.

There are still few studies that have investigated in this direction, but the results seem to confirm the hypothesis.

Dysfunctional parental attachment has a greater influence than peer attachment upon the likelihood of adolescents becoming addicted to Internet-related activities and concluded that the need to relieve dysphoria resulting from poor adolescent-parent relationships may be a major reason for Internet addiction (Soh et al., 2014).

Some evidences suggest that insecure attachment plays a relevant role in PIU (Shin et al., 2011; Lin, 2011), and that attachment disorganisation is a key factor for understanding the most problematic cases of Internet addiction (Schimmenti et al., 2012).

Schimmenti and colleagues (2014) showed that the PIU was predicted by male gender, having suffered from physical and sexual abuse in childhood, and preoccupation with relationships. Findings of this study support the hypothesis that insecure attachment attitudes (particularly the preoccupation with relationships) are involved in the development of PIU among late adolescents.

Recent research demonstrated that Internet addiction has a negative relationship with secure attachment style and a positive one with anxious and avoidant attachment style (Anderson, 2001; Lin et al., 2011b; Shin, et al., 2011; Kang, et al., 2012; Betül et al., 2014; Nazli Tavakoli et al., 2014) where the anxious attachment style could predict Internet addiction more than the avoidant (Betül et al., 2014; Lin et al., 2011b).

Moreover, about social network use specifically, Oldmeadow, Quinn and Kowert (2012) observed in adulthood a relationship between anxious and avoidant attachment style and the use of Facebook. The people with a high anxious attachment style used Facebook more frequently. They also used it greater when experiencing negative emotions and were worried about how others think of them on Facebook. To confirmation of this, recently, Lai et al.

(2016) found a positive association between need to approval, a dimension of anxious attachment, and the fear of missing out (FOMO).

The findings indicated the possible role of emotion dysregulation as a preceding factor of Internet addiction in affecting individual psychosocial well-being (Lai et al., 2015) and, in this regard, the Attachment theory can contribute to the understanding of the pathogenesis of Internet addiction (Eichenberg et al., 2016) and the secure attachment style may represent an important protective factor for the onset of the pathological use of Internet.

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*Chapter 5*

**THE MENTAL HEALTH LITERACY OF  
INTERNET ADDICTION AMONG  
ADOLESCENTS: AN INITIAL MEASURE  
DEVELOPMENT AND VALIDATION**

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**ABSTRACT**

This study aims to describe the initial development and to investigate the psychometric properties of an instrument for measuring the Mental Health Literacy (MHL) of Internet Addiction (IA). The formation of the items was based on the Australian National Survey of Mental Health Literacy and Stigma Youth Survey. It was designed as a vignette-based questionnaire depicting behavioural characteristics of a severe problem with Internet usage. These symptomatic behaviours were based on the description in the Young Internet Addiction Test (IAT). This newly developed instrument was administered to 348 adolescents aged between 15-18 years randomly recruited from high schools in a large city. Responses on the recognition of the problem from the vignette with the

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recognition of another vignette depicting depression were compared. The convergent validity of the intended action to seek help was investigated using the Self-Stigma of Seeking Help Scale (SSOSH), and the personal identification of the problem by the IAT. The results of this study provided supporting evidence for the validity of the MHL of IA measure. As the unique measure of the MHL of IA, this could play an important role in understanding the level of MHL in the population of an emerging area of psychiatric problem.

**Keywords:** mental health literacy, internet gaming disorder, internet addiction, assessment, psychometric, validity, reliability

## INTRODUCTION

Mental Health Literacy (MHL) is a term defined by Jorm as the “knowledge and beliefs about mental disorders which aid their recognition, management or prevention” [1]. This was based on the concept of health literacy established by the US Institute of Medicine (IoM) in 2004 and subsequently enriched by the World Health Organisation (WHO) in 2007 [2-3]. To provide a comprehensive concept of MHL, Jorm also included six main characteristics, namely: 1) the ability to recognise specific disorders; 2) the knowledge of how to seek mental health-related information; 3) the knowledge about risk factors and causes of mental health disorders; 4) the knowledge about how to self-treat and of the availability of professional help; 5) the attitudes that promote the recognition of mental health problems; and 6) the attitudes that promote seeking appropriate help [1].

In terms of the measurement and assessment of MHL, Jorm designed and utilised a vignette-based method to examine the ability of individuals to recognise mental disorders or problems in the national population survey in 1995 [1]. He also reported the use of rating scales to assess respondents’ perceptions of a list of pharmacological and non-pharmacological treatments related to the vignettes [1]. Since then, this approach of MHL assessment has been further developed to include questions on other important aspects of the MHL concept. These include: intention to seek help; belief and intention about first aid; belief about intervention and prevention [4]. This assessment approach has been widely adopted in many studies in the area of MHL for Depression, Depression with suicidal thought, Psychosis/early Schizophrenia,

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Social phobia, Depression and Substance abuse, and Post Traumatic Stress Disorder [5-11].

Excessive use of the Internet is a form of human interaction with information and communication technologies that has, for many years, been viewed as problematic [12]. Different terms have been used to describe such behaviour including: “compulsive computer use”; “pathological Internet use (PIU)”; “Internet addiction (IA)”; and “Internet dependency” [13-16]. Internet Gaming Addiction (IGA) has been listed as an emerging disorder worthy of further investigation in the latest version of the Diagnostic and Statistical Manual of Mental Disorders V (DSM-V), while a condition called “Internet addiction” (IA) is still yet to be recognised as an established disorder, with the controversial debate is still on-going [17-18]. In this study PIU and IA are used interchangeably.

The mental health outcome of PIU has been well documented and reported in the literature, particularly depression among adolescents 19-24]. In the most recent review of studies on the relationship between pathological Internet use and psychopathological co-morbidities, it was reported that depression had the most significant and consistent association with PIU among a number of the different psychopathologies investigated [19]. However, the review was not able to draw any conclusion on the causality of the relationship owing to the fact that all, but one, were cross-sectional studies [19]. In a recent longitudinal study on healthy young people aged between 13 and 18 years who were depression free, it was found that after 9 months of exposure to the Internet, moderate and severe problematic users were about 2.5 times more likely to develop depressive symptoms and scored high enough on the Zung Depression Scale to return clinically meaningful scores in comparison to normal users [25]. Other longitudinal studies conducted subsequently also yielded similar results [26-27]. These studies suggested a potentially causal relationship between PIU and depression. These finding further suggested that PIU per se could be considered as a mental health problem.

The development of Mental Health Literacy measures for other disorders and mental health problems are emerging in the literature. These include Autism Spectrum disorders, Conduct disorders, personality disorders, and Eating disorders [28-32]. However, for PIU there has not been a single study examining MHL and PIU. As Internet Gambling Addiction has been identified as a potential disorder to be further investigated in the DSM-V, the Mental Health Literacy aspect of PIU will soon become an important issue for exploration. The immediate question is whether there is a suitable measuring instrument for assessing the MHL of PIU. So far, there is none in the PIU

literature. The aim of this study is to bridge this gap by attempting an initial development and validation of an instrument for measuring the MHL of PIU, particularly among adolescents.

## **MATERIAL AND METHODS**

### **Sample and Procedure**

The sample was generated using a two-stage random clustering sampling technique. First, two high schools were randomly selected from the list of high schools in a large city of Southern China. Second, four classes were selected randomly from each school with all students in the class recruited in the sample. As a result, a sample of adolescents aged between 15-18 years was included in this development and validation study. The survey was conducted on campus at different schools within the same week. Selected students were invited to participate in the study by school principals and teachers, and were encouraged to fill in a self-reported questionnaire designed specifically for the study. Consent was implicated by a voluntarily response to the questionnaire. Institute ethics approval for the study was granted by the Human Ethics committee of the Hong Kong Institute of Education.

### **Materials**

The conceptualisation of the instrument and the formation of the items were based on the Australian National Survey of Mental Health Literacy and Stigma Youth Survey designed and developed by Reavley and Jorm [33]. The MHL Youth assessment includes all the aforementioned six domains of MHL. Recognition of disorders was assessed using a vignette-based question that presented a young person with symptoms characteristic of a disorder such as depression. The respondent was then asked the question: "What, if any, do you think is wrong with the young person?" Recognition of the disorder was indicated by the respondent's answer from a list of multiple-choices. Adopting the same format, the domain for disorder/problem recognition for the MHL of PIU was also designed as a vignette-based question presenting a young person with behaviours characteristic of an individual who might have a severe problem with Internet usage. These symptomatic behaviours were based on the

description depicted in the Yong Internet Addiction Test (IAT) [34]. The IAT was designed by Young as a 20 item self-reported scale in accordance to the behavioural diagnostic criteria of pathological gambling detailed in the DSM-IV but applied to the scenario of the Internet usage [34]. It included questions that reflect typical behaviours of addiction. After reading the vignette description, the respondent was asked to select an answer from a list of possible disorders or mental health problems.

At this initial developmental stage of the instrument, not all six domains of MHL were included in the design of the MHL of PIU. Included in this instrument were questions covering areas of intended action to seek help, perceived barriers, and exposure to the disorder/problem. Questions in these domains were all formatted after the original questions presented in the Mental Health Literacy and Stigma Youth Survey with minor modification to adapt to local cultural and language requirements. For example, for the intended help seeking action, the respondent was asked: "If you had a problem right now like the young person described above, would you seek help?" If the answer to the question is affirmative, then it would be followed by another question asking the respondent to indicate from whom he/she would seek the help.

## **Psychometric Analyses**

Owing to the fact that the design of the original MHL instrument included vignette-based questions and other questions with multiple-choice answers, the conventional approach of psychometric analyses that mostly applied to numeric scales might not be appropriate in this situation. Hence, other approaches were adopted to examine the psychometric properties, including the validity and reliability of the newly developed instrument. To investigate the construct validity of the MHL of PIU, particularly discriminant validity, questions on the same three domains of the MHL of depression were also included in the study questionnaire. Respondents were also asked to answer those questions for the MHL of depression. It was assumed that PIU and depression were two different disorders/problems therefore they were of two different constructs. Hence, the recognition of these separate mental health problems should be independent of each other. In other words, the correct recognition of the problem should only be dependent on the behavioural characteristics depicted in the vignette itself, but not on the description of the other vignette. As a result, there should be a significant discordance between the correct recognition responses elicited from PIU and that from depression.

In terms of the analysis this can be tested by using the McNemar Chi-squared test with correct/incorrect recognitions on the PIU and depression vignettes as responses.

To examine the convergent validity, particularly in the domain of the intended action to seek help, the Self-Stigma of Seeking Help Scale (SSOSH) was included in the questionnaire [35]. The SSOSH was designed to measure self-stigma associated with seeking professional psychological help. It was validated with a uni-dimensional structure and good reliability of 0.9,1 and a test-retest reliability of 0.72 [35]. A higher score on the SSOSH scale indicated a strong self-stigmatisation towards seeking professional psychological help and it was demonstrated that SSOSH was negatively and significantly associated with the intention to seek professional help [35]. In terms of the convergent validity for the domain of intended action to seek help, theoretically speaking, those who had indicated a positive intent to seek help should score lower than those who had indicated otherwise. This was tested by comparing the mean SSOSH scores between groups using an independent student's t-test. For the exposure to the problem, specifically on the question whether the respondent had ever had a similar problem as the person depicted in the vignette, the IAT was also included in the questionnaire as an objective assessment of the severity of PIU. Respondents who had indicated having experienced a similar problem should score higher on the IAT in comparison to those who did not have a similar experience. This was also examined by comparing the mean IAT scores between groups.

For the reliability of the MHL of PIU items, the test-retest reliability was examined with the same questionnaire re-administered to a randomly selected group of about 50 students at an interval of 2 weeks. Responses on the main MHL of PIU items were compared between the two test times. The agreement and the 95% Confidence Intervals of responses between the two test-times were calculated with the discordance examined using McNemar Chi-squared tests. A significant level of 5% was used for testing all hypotheses.

## **RESULTS**

The sample consisted of 348 young people with 150 (43%) males and 198 (57%) females and a mean age of 16.7 years (s.d. = 0.83). The demographic characteristics of the sample were summarised in Table 1. Of these, 127 (37%) were single children and the majority (n = 309, 89%) were living with both biological parents. Most of the parents received formal education up to

secondary or post-secondary levels with only 7% (n = 24) of fathers and 5% (n = 18) of mothers attaining university or higher education. As shown, there were no significant differences in the mean ages or the proportion distributions in any of the demographic characteristics between those who recognised PIU correctly and incorrectly.

The correct and incorrect recognition of PIU and depression responses were presented in Table 2. To confirm the construct validity of the MHL of PIU, particularly the discriminant validity, the discordance of these responses was tested with variables cross-tabulated for McNemar Chi-squared analysis. The results indicated that there was a significant discordance in the responses to the two vignettes (McNemar  $\chi^2 p < 0.001$ ). Information on other MHL items of the PIU and depression were also presented descriptively in Table 2.

**Table 1. Frequency (%) or means (s.d.) of the demographics by recognition of PIU and results on comparisons (N = 348)**

Variables	Total sample	Recognition of the problem		Results
		Yes (n = 203)	No (n = 145)	
Age	16.7 (0.83)	16.7 (0.81)	16.8 (0.86)	$t_{346} = -1.22$ , $p = 0.223$
Sex				
Male	150 (43%)	80 (39%)	70 (48%)	$\chi^2_1 = 2.71$ , $p = 0.100$
Female	198 (57%)	123 (61%)	75 (52%)	
Single child				
Yes	127 (37%)	77 (38%)	50 (35%)	$\chi^2_1 = 0.43$ , $p = 0.510$
No	221 (63%)	126 (62%)	95 (65%)	
Living with biological parents				
Yes	309 (89%)	184 (91%)	125 (86%)	$\chi^2_1 = 1.67$ , $p = 0.196$
No	39 (11%)	91 (9%)	25 (14%)	
Father's Education level				
University or above	24 (7%)	13 (6%)	11 (8%)	$\chi^2_2 = 0.49$ , $p = 0.782$
Secondary and Post-secondary	261 (75%)	155 (76%)	106 (73%)	
Primary or below/deceased	63 (18%)	35 (18%)	28 (19%)	
Mother's Education level				
University or above	18 (5%)	9 (4%)	9 (6%)	$\chi^2_2 = 2.08$ , $p = 0.353$
Secondary and Post-secondary	254 (73%)	154 (76%)	100 (69%)	
Primary or below/deceased	763 (22%)	40 (20%)	36 (25%)	

**Table 2. Frequency and percentage<sup>a</sup> of responses to Mental Health Literacy items for PIU and Depression (N = 348)**

MHL items	PIU	Depression	Comparison results
Recognition of disorder			
Correctly	203 (58%)	69 (20%)	McNamar $\chi^2$ p < 0.001
Incorrectly	145 (42%)	279 (80%)	
Recognition of disorder			
Problematic Internet Use	203 (58%)	-	-
Depression	14 (4%)	69 (20%)	
Schizophrenia/paranoid schizophrenia	3 (1%)	6 (2%)	
Psychosis/psychotic	-	-	
Mental illness	2 (1%)	-	
Stress	14 (4%)	89 (26%)	
Nervous breakdown	2 (1%)	6 (2%)	
Psychological/mental/ emotional problems	88 (25%)	147 (42%)	
Has a problem	-	16 (5%)	
Cancer	-	1 (0.3%)	
Other (specify)	10 (3%)	13 (4%)	
Nothing	6 (2%)	1 (0.3%)	
Don't know	6 (2%)	-	
Intended action to seek help			
Yes	191 (55%)	210 (60%)	McNamar $\chi^2$ p = 0.064
No/Don't know	157 (45%)	138 (40%)	
Of those who seek help, seek help from			
Father	30 (16%)	28 (13%)	McNamar-Bowker <sup>c</sup> $\chi^2_3 = 0.8, p=0.064$
Mother	46 (24%)	57 (27%)	
A family member	14 (7%)	14 (7%)	
My teacher	10 (5%)	8 (4%)	
A school social worker or counsellor	3 (2%)	3 (1%)	
Friends met on the Internet	6 (3%)	5 (2%)	
Friends in school	65 (34%)	68 (32%)	
Others	11 (6%)	21 (10%)	
Don't know	6 (3%)	6 (3%)	
Barrier of seeking help(multiple responses)			
Person might feel negatively about you	65 (35%)	60 (29%)	McNamar $\chi^2$ p = 0.081
What the person might say is wrong	41 (22%)	41 (20%)	p = 1.000
Other people think of you seeing the person	21 (11%)	27 (13%)	p = 0.481
Thinking that nothing can help	33 (18%)	48 (23%)	p = 0.080
Too embarrassed/shy	49 (27%)	49 (23%)	p = 0.473
Other	10 (5%)	11 (5%)	p = 0.774
Don't know	34 (18%)	57 (27%)	p = 0.093

MHL items	PIU	Depression	Comparison results
Exposure to the problem			
Family or friends had a similar problem			
Yes	139 (39%)	-	
No/Don't know	213 (61%)		
Did they receive professional help? <sup>b</sup>			
Yes	14 (10%)		
No/Don't know	120 (90%)	-	
Have you ever had a similar problem?			
Yes	97 (28%)	-	
No/Don't know	251 (72%)		
Did you receive professional help? <sup>b</sup>			
Yes	16 (17%)	-	
No/Don't know	79 (83%)		

<sup>a</sup> Percentage did not add up to 100% due to rounding; <sup>b</sup> Follow-up question only for those who answered yes in the previous question, <sup>c</sup> Categories were collapsed into father, mother, and others,

To examine the convergent validity for the intended action to seek help, the mean SSOSH scores between those who had indicated a positive intent to seek help and those who had indicated otherwise were compared (Table 3). There was a significant difference in the mean scores between groups ( $t_{346} = -4.14$ ,  $p < 0.001$ ). Those who had indicated a positive intent scored lower than those who had indicated otherwise with mean SSOSH scores of 24.2 (s.d. = 4.62) and 26.1 (s.d. = 3.97) respectively. For the convergent validity of the question on the exposure to the problem, results also suggested a significant difference in the IAT scores between those who had experienced a similar problem and those who did not have similar experience ( $t_{346} = 6.66$ ,  $p < 0.001$ ). The mean scores of IAT for the former group were 48.6 (s.d. = 13.77) and 39.6 (s.d. = 10.68) of the latter.

The test-retest reliability of the MHL of PIU items was investigated and the results were summarised in Table 3. As shown, the agreements of all MHL items between the two test-times were moderately high ranging from 70.6% to 84.3%. The test for discordance for each item did not yield any significant result, suggesting no obvious discordance of responses between the two test-times.



**Table 3. Results on test-retest reliability and convergent validity of MHL items (N = 51)**

MHL items	Test	Retest	Agreement in % (95% C.I.)	Results
Recognition of disorder Correctly Incorrectly	27 (53%) 24 (47%)	26 (51%) 25 (49%)	70.6 (56.0-82.1)	McNamar $\chi^2$ p = 1.000
Intended action to seek help Yes No/Don't know	30 (59%) 21 (41%)	30 (59%) 21 (41%)	84.3 (70.9-92.5)	McNamar $\chi^2$ p = 1.000
Exposure to the problem Family/friends had a problem Yes No/Don't know	25 (49%) 26 (51%)	23 (45%) 28 (55%)	76.4 (50.0-77.2)	McNamar $\chi^2$ p = 0.815
You ever had a problem Yes No/Don't know	17 (33%) 34 (67%)	18 (35%) 33 (65)	82.4 (68.6-91.1)	McNamar $\chi^2$ p = 1.000
		ITA scores		Results on comparison
You ever had a problem Yes No/Don't know	48.9 (13.77) 39.6 (10.68)		$t_{346} = 6.66, p < 0.001$	
SSOSH scores				
Intended action to seek help Yes No/Don't know	24.2 (4.62) 26.1 (3.97)		$t_{346} = - 4.14, p < 0.001$	

## DISCUSSION

This study aims to examine the psychometric properties of a newly developed instrument for measuring the Mental Health Literacy of Problematic Internet Use. As aforementioned, this is the first attempt of the development of a Mental Health Literacy measure in the area of Problematic Internet Use. Previous studies have reported the development of MHL for other disorders [28-32], however according to Jorm's MHL concept for instrument design, MHL measures are disorder or problem specific. As a result, each vignette depicts one disorder and the MHL questions are referred to the same disorder described in the vignette. Hence, there are six different vignettes for six different disorders in the Mental Health Literacy and Stigma Youth Boost Survey [33].

The results of this study provide some supporting evidence for the validity of the MHL of PIU measure. The significant discordance in responses to the PIU and depression vignettes renders support for the hypothesis that the responses of correct recognition of the disorder depicted in the two vignettes are independent from each other and also vignette specific. This in turn also provides evidence that the vignettes clearly depict two different sets of symptom characteristics, and thus two distinct constructs. Applying the same logic to the test of discordance on data collect at two test times, the results also provide evidence for the concordance of responses at the two test times with moderately strong agreements on the main MHL items. These results suggest reasonably good test-retest reliability of these items. Other results on the comparison of the IAT and SSOSH scores between groups also give support to the validity of the MHL items on intended action to seek help and exposure to the problem.

The role of MHL in the prevention of mental health problems and the promotion of better mental health is undeniably important, as argued by Jorm [36]. The value of enhancing MHL in the community across all ages comes not only in an increase in the ability to recognise mental health disorders and problems, but also a better understanding of the risk factors of these disorder and problems, resulting in the reduction of negative attitudes and stigmatisation towards people who are suffering from these disorders. More importantly, a greater benefit could be gained by developing the ability to seek information on these problems, cultivating a more positive attitude towards seeking appropriate help, and possibly more knowledge in self-treatment or seeking professional help. It is through the early detection, and in turn early intervention, of the problem that the goal of primary and secondary prevention can be achieved [36]. As the onset of many mental health problems occurs during adolescence, it would be more important to develop and implement MHL programs for children. However, a recent study reviewing the available school-based MHL programs for adolescents in the literature yielded disappointing results. It was found that, on one hand the quality of the reviewed studies was far from promising, and on the other the quality of evidence for help-seeking behaviour and knowledge was very low [37]. This demonstrates a greater and urgent need to invest in research for better design and development of MHL programs based on strong and proven theoretical frameworks.

There are strengths and weaknesses in this study. The design of the PIU vignette is based on the conceptual framework embedded in the design of the Internet Addiction Test which is a well validated and widely used instrument

in many countries. The symptom characteristics depicted in the vignette are in line with Davis's concept of Generalised Problematic Internet Use [18]. The questions included in the instrument adopt the format of the original Mental Health Literacy and Stigma Youth Boost Survey that allow for comparisons of responses among different disorders. One obvious limitation of the instrument is that it only includes three main domains of MHL. Further studies are required to develop and to validate the remaining domains to complete the full MHL of PIU instrument.

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## BIOGRAPHICAL SKETCH

### *Lawrence T. Lam*

Lawrence Lam has received training in areas of Medical Sciences, Psychology, Public Health, Epidemiology and Medical Statistics. He worked as a hospital Epidemiologist and a Medical Statistician in the Royal Alexandra Hospital for Children, Sydney, Australia, for many years. During the period, he was also teaching Master classes in Epidemiology and Biostatistics at the School of Public Health, The University of Sydney. He was the Head of Epidemiology and Medical Statistics, as well as the Deputy Chair of the Population and Public Health Domain in the School of Medicine Sydney, the University of Notre Dame Australia during 2009-2012. He is also appointed a Fellow of the American College of Epidemiology.

**Research Administration**

In 2006, he established the Centre for Trauma Care, Prevention, Education, and Research (CTCPER) in conjunction with clinical colleagues of the Surgery Division of the Children's Hospital at Westmead. He was also appointed to the position of the Scientific Director of the centre with full responsibility of promoting and developing research program in the area of trauma care, management, and injury prevention. (<http://www.kidsresearch.org.au/research/trauma-care/index.php>)

Lawrence has been managing many different local and internal projects for a number of years. He was one of the founding members serving on the advisory committee at the onset of the DRIVE Study which is the world largest study on young drivers' risky behaviour and crash injuries. He has also served as members of the Research Committee of the School of Medicine Sydney and School of Nursing Sydney, the University of Notre Dame Australia while serving a faculty member. He is also a founder and a co-director of the Asia-Pacific Research Collaboration in Child and Adolescent Public Health based in the Chinese University of Hong Kong. More recently, he also established the Child and Adolescent Mental Health Research Collaboration group with colleagues in Hong Kong, China, Macau, and Singapore with a flagship multicentre project held in different cities within the region. He has been appointed as the Co-chair of the Scientific Committee of the Hong Kong Society of Behavioural Health, an affiliated member of the International Society of Behavioural Medicine. He has also been nominated as an in-coming Vice President of the society.

**Research Profile**

Being an Epidemiologist, a Statistician, and a research Psychologist in clinical and academic settings, Lawrence has experience in many different sub-specialties in Epidemiology and Medicine. These include Behavioural, Clinical, and Environmental Epidemiology. His works cover a range of research areas including Clinical Trauma Management and Injury Prevention, Paediatric and Adolescent Mental Health, Environmental Child Health, Risky Behaviours among young people particularly young people's Internet problematic behaviour and psychology, and Rehab of traumatic brain injury among children and young people. While serving at the School of Medicine Sydney as a faculty member, he also provided consultations to and collaborated with clinicians of the St Vincent's and Mater Hospitals Sydney, the Cunningham Centre for Palliative Care, as well as a member of the advisory committee of the ImPaCCT (Improving Palliative Care through

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*Chapter 6*

**A REFLECTIVE STUDY OF THE  
DILEMMAS IN THE DIGITAL ADDICTION  
POLICY OF KOREA**

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**ABSTRACT**

South Korea has rapidly developed the infrastructure for a digital information society. The rapid development of its infrastructure, however, has caused social problems such as internet addiction, for which countermeasures were implemented at the national level early on. Such response measures include the 3-year master plans, annual nationwide surveys on the current conditions, training of professional counselors, counseling programs tailored to different age groups, and regional counseling centers. However, as is the case with all other policies, there are dilemmas in the Internet addiction policy in regard to the cause and true nature of digital addiction, the inter-departmental implementation systems of the central government, and the division of roles and cooperation among the central and local governments and citizens. This chapter is a reflective study about the future policies to be improved with the previous successful Internet addiction policies in S. Korea. S. Korea's experience in responding the Internet addiction problems may offer good case studies for other countries that have recently experienced it.

## 1. INTRODUCTION

There are distinct channels through which the issue of Internet addiction emerges as a social issue or becomes designated as a subject of a national policy. For instance, it may occur as a result of case discovery and in-depth research by academics in related fields such as psychology, counseling, and neuropsychiatry. In this case, academic research raises awareness of the seriousness of the issue, and the problem becomes designated as a national policy issue. On the other hand, it may be selected as a policy issue by the national government, after which the budget allocated is used toward finding the basis for the policy and program implementation. While the situation in the U.S.A. and Germany is illustrated by the former case, S. Korea and China have been following the path of the latter.

The unique factor in S. Korea's case, with respect to dealing with Internet addiction, which is regarded as a mental health issue, is that it was initiated by a government department that oversees the information technology (IT) and gaming industries, rather than the one in charge of healthcare. More recently, the department in charge of healthcare has also been implementing response measures in relation to this issue. However, the fact of the matter is that the department in charge IT and gaming industry policies allocates a more substantial amount of budget to countering this issue, and those who are not familiar with the background of this story may be surprised by this phenomenon.

S. Korea has been working to stop Internet addiction for a relatively longer time than any other countries in the world. Nevertheless, this does not mean S. Korea's national response measures are the most rational or successful. All policies are formulated based on the background unique to that particular society, and this is also the case for S. Korea's Internet addiction policy. Since 2002, the South Korean government has been conducting a nationwide Internet addiction survey every year, and readjusting the direction of its policy. It has been actively dealing with the issue, developing a scale for collective screening of addiction tendencies, developing and providing standard counseling programs tailored to different life cycle stages, training professional counselors, and providing free counseling services.

More recently, however, an environment rendering people more vulnerable to Internet addiction has been created. To be more specific, smartphones have become an integral part of the daily life for nearly all citizens of S. Korea, and it is highly likely that people will become more dependent on digital technologies such as wearable computers, virtual reality (VR) and augmented reality (AR). In addition, due to the economic slowdown, the national government has been allocating more budget to utilize IT to drive forth economic development, rather than to mitigate the side effects of IT. Amid the changing environment, it has become important to consider how a more efficient preventive and resolution policy could be implemented.

This is a reflective study regarding the successes of the Internet addiction policy of Korea as well as the matters for improvement. Of particular note, the issue will be examined from the viewpoint of the dilemma theory. As many are already aware, the Internet addiction policy of Korea, with a long history, is accompanied by an excellent system. Nevertheless, this does not mean there is no need to seek better countermeasures.

## **2. POLICY DILEMMA THEORY**

Today, the government is in a very complex environment. From the spatial perspective, for instance, the emergence of a “global community” has resulted in policy issues that are discussed and disputed across national borders, instead of strictly affecting one nation. Even within the country, there exist numerous interest parties to policy issues. For this reason, there may be several government departments handling a single issue, and there are issues that give rise to conflicts among multiple local governments. Conflict between the government and the citizens occurs frequently. There are times when the interest parties in conflict have differing views that make it impossible for them to yield. In such cases, it becomes a huge challenge to reach a conclusion that satisfies all of the interested parties.

When there are issues causing conflict, the government must determine the importance of the situation, the values claimed by the interested parties, and the degree of benefits and losses before seeking a measure to resolve the situation. However, there are cases when the government cannot make a decision and merely wish to avoid a situation where the problem is further exacerbated.

The phenomenon in which contradicting demands exist simultaneously when implementing a policy is referred to as a “policy paradox (Stone, D. A., 1988).” A paradox is a logical structure regarding a situation, and when an issue falling into this type of logical structure causes a conflict between two parties to surface and intensify, without a resolution, rendering it difficult for the decision-maker to make a choice, it is called a “policy dilemma (Young-Jin, Soh 2003: 33).” In other words, policy dilemmas arise when logical conditions composing a dilemma are accompanied by corresponding social conditions.

The logical conditions composing a dilemma are as follows (Young-Jin, Soh, 2003: 33): (a) discreteness: the two choices are completely different in nature and reaching a compromise is impossible; (b) trade-off: the two choices contradict each other and only one of the choices must be selected; (c) equality: the results expected from the two choices are nearly equal in value, thus making it difficult to make a choice; (d) unavailability: making a choice is unavoidable and at least one of the choices must be selected. The social conditions corresponding to the said logical conditions are summarized in Table 1 (Young-Jin, Soh, 1999:200).

In this chapter, the dilemmas in the national policy regarding Internet addiction in S. Korea were summarized into three types: the cause and true nature of digital addiction, the inter-departmental implementation systems of the central government, and the division of roles and cooperation among the central and local governments and citizens. The history and current situation of the Internet addiction policy in S. Korea will be examined first for a better understanding.

**Table 1. Social conditions of a policy dilemma**

Logical condition	Social condition
Discreteness	Lack of adjustment function, distinction between benefits and costs, lack of trust in the policy-makers, concreteness of the choices
Trade-off	Shortage of resources (difficult to satisfy both), redundancy
Equality	Balance of power, extent of demands (size of the stake), extent of organizational power, strategic actions
Unavailability	Likelihood of a backlash in case of a delay in decision-making

### 3. THE DIGITAL ADDICTION POLICY AND ADDICTION SITUATION IN S. KOREA

#### 3.1. History of the Digital Addiction Countermeasure Policy

S. Korea initiated a national policy regarding Internet addiction in 2002. This was extremely early, considering that the American Psychiatric Association announced only “Internet gaming” may be referred to as an Internet addiction in 2013 (<http://www.dsm5.org/Pages/Default.aspx>).

In order to understand the reason behind selecting Internet addiction as a policy issue in 2002, one must first understand the economic situation of S. Korea at the time. As it is generally known, the Korean War occurred in the 1950s. The war devastated the country, destroying nearly all of the manufacturing factories and driving the people into extreme poverty. With hard work, dedication and fervor for education, however, the people of S. Korea restored their nation at a rapid pace. Following the dramatic economic growth after the 1960s, S. Korea became one of the world’s top 10 countries, in terms of trade volume, in the early 1990s, but was soon faced with a stagnant economy. While the advanced nations strove to build a knowledge-based economy, S. Korea remained dependent on the traditional manufacturing industry. Then, Korea faced a foreign exchange reserve crisis in 1997, and had to be managed by the International Monetary Fund.<sup>1</sup>

The new President of S. Korea who took office in the following year made “revival of the national economy” as the ultimate objective, which was to be achieved through “informatization.”<sup>2</sup> In other words, successful informatization was expected to revive the national economy. The problem is that amidst the relentless implementation of a state-led informatization policy, problematic behavioral patterns were observed among those who continually

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<sup>1</sup> The 1997 Asian financial crisis was a period of financial crisis that affected much of East Asia, including Korea. As a means to stabilize the currencies, the Korean government received a loan from the International Monetary Fund (IMF), under the condition that it tighten its financial and fiscal policies, implement a policy for opening to foreign investment, restructure its financial sector and companies, and improve corporate transparency (Young-Sam, Koh, 2015: 220).

<sup>2</sup> Informatization involves establishing communication infrastructure, introducing information technology in the manufacturing sector to enhance productivity, and industrializing games and computer software as a means to become an information-based society (Young-Sam, Koh, 2015: 220).

played Internet games.<sup>3</sup> At the time, the informatization policy experts voiced concerns that the rapid progression of informatization for economic revival would not only lead to positive impacts, but also produce unintended adverse effects. Thus, in the late 1990s, they began to advise the government officials that it was important to minimize the adverse impacts of informatization such as Internet addiction, even for ensuring “successful” informatization. Ultimately, in 2002, the Internet Addiction Prevention and Counseling Center (IAPC) was established under the National Information Society Agency, which was in charge of national informatization planning.<sup>4</sup>

IAPC, launched in 2002, undertook projects to develop a scale for determining Internet addicts, develop and run counseling programs, train professional counselors, and conduct surveys to examine the current situation pertaining to Internet addicts. Meanwhile, the issue of Internet addiction began garnering more attention from the public after the turn of the new millennium, as Internet use became more widespread. For this reason, other government departments including the Ministry of Culture, Sports and Tourism and the Ministry of Gender Equality and Family began attempting to address this issue in a competitive manner. This is how S. Korea formulated an Internet addiction policy far earlier than any other country. Furthermore, the circumstances stated above served as the background for those responsible for the informatization policy, rather than those in charge of healthcare, to initiate the policy, even though Internet addiction is a mental health issue.

### **3.2. Current Situation of Digital Addiction**

In S. Korea, a nationwide survey is conducted to examine the Internet addiction situation.<sup>5</sup> In 2015, 6.8% of the population was found to be in the

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<sup>3</sup> For example, there were cases in which individuals were fired from their jobs or ruined their marriages due to their online gaming addictions, or committed heinous crimes because they confused virtual reality with actual reality. <http://news.naver.com/main/read.nhn?mode=LSD&mid=sec&sid1=102&oid=015&aid=0000358434>

<sup>4</sup> The said institution received funding for its operations from the Ministry of Information and Communication, which was implementing informatization programs at the time.

<sup>5</sup> K-scale, used to measure over-dependency on the Internet and smartphones in S. Korea, has been supplemented and utilized since its development in 2002. Although the Young Scale (1996) was initially used, there were significant discrepancies in the number of subordinate factors, which were found to range from one to four in the follow-up studies, and a validation study was not conducted in regard to the calculation of the cutoff scores. Due to these limitations, the Young Scale was not adapted into a Korean version, and the K-scale was developed instead. The results of follow-up factorial analyses of the Young Scale: 6

risk group for being overly dependent on the Internet (High risk group – 1.2%; Potential risk group - 5.6%).<sup>6</sup> In terms of age groups, the risk group was mostly comprised of people in their twenties (13.3%) and teens (13.1%), who especially spend a lot of time playing online games and using social networking services (SNS). Nonetheless, the rate of over-dependency on the Internet has been declining over the years, recording 9.2% in 2006, 8.5% in 2009 and 7.2% in 2012, so there has been a gradual improvement (Ministry of Science, ICT and Future Planning (Ministry of Science, ICT and Future Planning and National Information Society Agency, 2016).

The survey also examines the over-dependency on smartphones. The results show that while the over-dependency on the Internet has been declining over the years, the over-dependency on smartphones has been on a continuous rise. To be more specific, the at-risk population to total population ratio for over-dependency increased from 8.4% in 2011 to 11.1% in 2012, 11.8% in 2013 and 14.2% in 2014, and it markedly rose to 16.2% in 2012 (High risk group: 2.4%; Potential risk group: 13.8%). Dependence on smartphones has become intensified as they have become an essential item in people's daily lives, and this is causing concerns that the number of people who are overdependent on smartphones will grow even further. In terms of age groups, a vast percentage of those in the over-dependency risk group were in their teens (31.6%), prompting the need for special countermeasures. The second largest age group was 20s (24.2%) followed by 30s (16.1%). The age group that is drawing especially a lot of attention is infants and children(3~9 years old).

They comprise 12.4% of the risk group, which is higher than the percentage of those in their 40s (10.7%) and 50% (5.3%). This is a cause for concern as children under the age of 10 are in an important stage of cognitive and emotional development.

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factors (Widyanto et al., 2004; Ferraro et al., 2007), single factor (Khazaal et al., 2008; Korkeila et al., 2010), 3 factors (Chang & Man Law, 2008; Widyanto, Griffiths, & Brunsten, 2011), etc. Citation: Psychometric Properties of the Internet Addiction Test in Hong Kong Secondary Students. <http://netaddiction.com/wp-content/uploads/2014/05/IADQ.HongKong.Validation.pdf> (Narae, Um, 2015: 59).

<sup>6</sup> The K-scale is a screening scale that was standardized and developed in S. Korea based on the norm-reference method. T-scores of 70 or higher are classified as "high risk group," and T-scores of 67 to 69 are classified as "potential risk group." In the national survey conducted by the government, the results of these two scores are combined and announced as the "risk group." Although the K-scale is relatively valid for counseling intervention, but it has limitations as a diagnostic tool for treatment intervention. One should understand that the K-scale was developed for policy purposes to prepare a national response system, which was urgently needed to prevent Internet addiction (Narae, Um, 2015: 62-67).



## 4. DIGITAL ADDICTION POLICY EXAMINED FROM THE PERSPECTIVE OF POLICY DILEMMAS

### 4.1. Dilemma in the Cause and True Nature of Digital Addiction

The causes of Internet addiction are extremely multi-dimensional. One of the key aspects of all types of addiction including Internet addiction is probably the failure to exert self-regulation (Kyoheon, Kim, 2006; Kyoheon, Kim and Hun-seok, Choi, 2008). The process through which an individual gets addicted to the Internet can be divided into three stages: experimental contact, impulsive pursuit, and compulsive obsession. In each of these stages, the individual must practice adequate self-control, but instead, acting upon his or her impulsivity can lead to addiction (Kyoheon, Kim, 2015: 9-11).<sup>7</sup>

However, when it comes to the causes of Internet addiction, they cannot be explained simply based on individual factors because there are a multiple of other factors involved. Davis (2001) divided the causes of Internet addiction into proximal contributory causes and distal contributory causes by incorporating the cognitive behavioral theory with the concept of pathological Internet use (PIU), and explained the importance of situational factors.<sup>8</sup> Orford (2001), on the other hand, referred to the cases in which something that generally provides satisfaction to humans actually deteriorates the quality of life when in excess as “excessive appetites,” while explaining the excessive use of the Internet. He also stressed that there are no cases in which addiction exists irrespective of history, culture and social status by arranging social and moral contexts around individual psychological characteristics in his social behavioral cognitive-moral model. Meanwhile, the public health approach provided a comprehensive explanation, proposing that sociocultural

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<sup>7</sup> What becomes heavily involved in causing impulsivity and determining success or failure of self-regulation in each of these stages are mechanisms of reward learning and memory. All types of addiction behaviors reward the affected individual by allowing them to experience joy or avoid the pain and affliction they are under. Such rewards leave distinct traces in the brain. The affected individual may realize that the impulsive behavior is wrong and try to break away, but if he or she continues failing to break the addiction and relies on impulsivity, he or she will fall into serious addiction.

<sup>8</sup> Examples of distal contributory causes include the individual psychopathological factors, the incident through which the individual first encountered the Internet or the time period thereof, and the advancement of Internet technology. Proximal contributory causes include maladaptive cognition, low self-efficacy, and poor social support.

environmental factors are just as important as individual and biological factors when it comes to illnesses.

When these models, the theories of which can be easily comprehended, are implemented in reality, it gives a rise to a policy dilemma as follows: (a) The biggest cause of Internet addiction may be the government allowing easy access to online games and smartphones, but the government is being accusatory, suggesting that it is caused by bad parenting or poor impulsivity regulation of the individual. (Argument made by a parent of school-aged children; (b) Internet addiction problem is caused by problems at home, but the public is accusing games as the main culprit. This will prevent advancement of the gaming industry, which is the future growth engine for the economy. (Argument made by the gaming industry); (c) The stress caused by the competitive education environment centering on the college scholastic ability test (CSAT) and social survival in our society is the main cause of Internet addiction, yet the government is remaining silent about the fundamental structural problems of society and is only paying attention to the secondary and trivial causes. (Argument made by a non-governmental organization (NGO)); (d) The pathological use of the Internet is described by the various government departments using different terms such as “addiction,” “over-flow,” and “over-dependency,” and this is confusing. (Argument made by an NGO)

The Internet addiction policy of Korea was not formulated based on sufficient research results that provided its implications. In the beginning, the government took a micro-approach of helping the affected individuals regain their mental health and providing social skills development training, as a means to prevent social incidents caused by addicts. However, when there was an uproar among the parents of school-aged children, heavily criticizing online games, a direct regulation of service activities of relevant enterprises such as the shut-down system was implemented. This could be described as an intermediate-level approach. As a result, there were frequent conflicts between the gaming industry advocating for the micro-approach and parents supporting the intermediate-level approach, which in turn led to a policy dilemma.

More recently, however, civic organizations have opined that this issue will not be resolved, unless the social structural conditions are restructured. They are arguing that it is the CSAT-centered education system and the performance-prioritizing corporate environment that are the fundamental reasons the public are becoming immersed in online games. The notion that the early micro-approach, while it is not unimportant in a broader sense,

cannot be the sole solution to this problem is being raised by people, one after another.

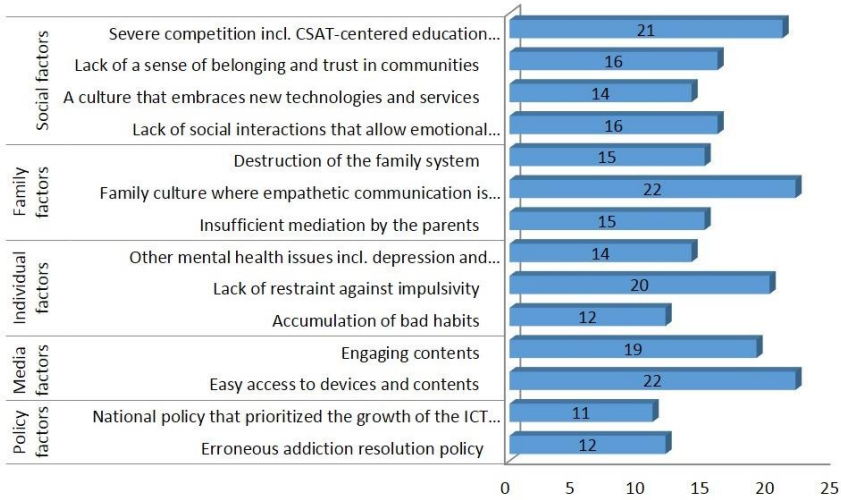


Figure 1. Top causes of Internet addiction suggested by experts.

In this study, a survey was conducted with 19 experts in the Internet addiction field to examine the causes of Internet addiction in S. Korea using the Delphi method (Figure 1). The responses given by the experts in the questionnaire, which allowed for multiple responses, were classified into three levels depending on the frequency. The experts responded that the biggest causes were “easy access to devices and contents (22 respondents),” “family culture where empathetic communication is lacking (22 respondents),” “severe competition incl. CSAT-centered education and job promotion (21 respondents),” “lack of restraint against impulsivity (20 respondents),” and “engaging contents (19 respondents).”

The second-level group included “lack of social interactions that allow emotional empathy (16 respondents),” “lack of a sense of belonging and trust in communities (16 respondents),” “insufficient mediation by the parents (15 respondents),” “destruction of the family system (15 respondents),” “other mental health issues incl. depression and anxiety (14 respondents),” and “a culture that embraces new technologies and services (14 respondents).”

The dilemma in the Internet addiction resolution policy of Korea is that countermeasures are implemented only for the peripheral causes, without addressing the underlying or biggest causes of Internet addiction. For example,

in the aforementioned survey, the experts noted that “easy access to devices and contents,” “family culture where empathetic communication is lacking,” and “severe competition incl. CSAT-centered education and job promotion” were the first-level factors contributing to Internet addiction. However, under the premises of the national Internet policy for “S. Korea to become a country where anyone can access the Internet anywhere, anytime,” the necessary measures to mitigate the issue of “easy access to devices and contents” cannot be taken. Also, because “S. Korea must become a highly competitive nation,” even though “severe competition incl. CSAT-centered education and job promotion” is indeed one of the biggest causes of Internet addiction, nothing can be done about it. While resolving the issue of Internet addiction is important, the Internet addiction policy is pushed to the back burner in order to pursue a greater vision of national development and operation. This issue associated with the paradigm of national operation is clearly a policy dilemma.

There is a dilemma even in the terminology used in relation to the pathological use of the Internet. For example, the Ministry of Health and Welfare and the Ministry of Gender Equality and Family opt to use the term, “addiction,” as it is more advantageous for them. In contrast, the Ministry of Culture, Sports and Tourism, which must promote the gaming industry, uses the term, “over-flow,” rather than “addiction.” On the other hand, the Ministry of Science, ICT and Future Planning, which must cultivate the information and communications technology (ICT) industry, officially use the term, “over-dependency.” While the latter two ministries partially acknowledge the pathological aspect of Internet use, they wish to avoid the stigma that typically arise from the term, “addiction.” Resolving this terminology dilemma will be most difficult.

The concept of “over-dependency,” the term used by Ministry of Science, ICT and Future Planning, has a different perspective of the pathological use of the Internet compared to that of “addiction.” Ministry of Science, ICT and Future Planning views “addiction” as a term conforming to a disease model, with the supposition of diagnosis, treatment and recovery of patient.<sup>9</sup> In contrast, “over-dependency” is viewed as a term conforming to the choice theory or the competence build-up model, which focuses on the growth-oriented nature of humans.<sup>10</sup> In other words, from this perspective, misuse of

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<sup>9</sup> In the disease model, addiction is viewed as a chronic and incurable disease that renders the affected individuals powerless (White, W. L. 1998).

<sup>10</sup> Gene. M. Heyman’s choice theory (2009) is based on the view that all human behaviors arise from intrinsic motivations. From this viewpoint, addiction is not deterministic and can be overcome ([http://www.corwin.com/sites/default/files/upm-binaries/2983\\_11tcp01.pdf](http://www.corwin.com/sites/default/files/upm-binaries/2983_11tcp01.pdf)). The

the Internet is not a disease that clearly requires medical treatment, even though it may be pathological, and it is a characteristic that can be fully overcome by the affected individuals if they improve their self-regulation ability and gain a balance in their daily lives. It is also believed that a thorough analysis of one's own symptoms and dispositions related to becoming immersed in online chatting, searching and gaming may even become an impetus for growth. This perspective is completely different from the view of alcohol addiction, where it is believed that addicts will never fully recover from their addictions and instead always be in the middle of recovery. In the case of alcohol addiction treatment, Alcoholics Anonymous (A.A.) is regarded as a major self-help-group of alcohol addicts who are expected to never fully recover from their addictions (Lloyd, E. R. and David, L. A., 1992). In contrast, Ministry of Science, ICT and Future Planning actually has reported a number of cases in which most of the individuals determined to be at risk for Internet addiction were treated effectively through counseling. The individuals who finished the counseling program are not "in the middle of recovery," but are actually practicing their self-regulation skills from day to day and leading healthy lives.<sup>11</sup> This will need to be supported by more research results, but the term, "Internet over-dependency," focuses on the positive aspect in that it differs from substance addiction. As such, this situation in which multiple terms such as "addiction," "over-flow" and "over-dependency" are used by different government departments of the same nation to describe the same phenomenon is clearly a case of policy dilemma.

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term, "over-dependency," used by Ministry of Science, ICT and Future Planning was inspired by "dependency" used in DSM; however, strictly speaking, it was conceptualized at a policy level rather than based on an academic basis. In order to understand the discourse on Internet addiction in S. Korea, it is important to first understand this term.

<sup>11</sup> For example, 8 adolescents at risk of Internet addiction were provided with solution-focused counseling therapy, and the results of the quantitative study showed that depression and stress in the family relationship was significantly reduced. Also, in a qualitative study using Colaizzi's phenomenological research method, changes in learning attitude and achievement, effective time management, practice of alternative activities, changes in spending habit, becoming physically healthier, some psychological changes, positive changes in relationship with friends, positive changes in family relationship, and positive changes in relationship with school teachers were observed (Hyou-Sil, Moon, 2010).

## **4.2. Dilemma of Business-Centered Entities among the Government Departments**

The Korean response to Internet addiction is unusual in that the government stands very much at the frontline. Even more unique, it is not just one specific bureau or office providing this response; rather, a variety of federal bureaus help to fight Internet addiction (Young-Sam, Koh, 2015: 222). This type of implementation system is probably difficult to understand for the nationals of countries where national responses are rarely made. At present, in S. Korea, the Internet addiction issue is dealt with by a total of 8 government departments: Ministry of Science, ICT and Future Planning, Ministry of Culture, Sports and Tourism, Ministry of Gender Equality and Family, Ministry of Health and Welfare, Ministry of Education, the Ministry of National Defense, Ministry of Justice, and Korea Communications Commission. The 8 government departments are handling this problem, based on their own identities, but there have been discussions in regard to operating an Internet addiction policy implementation council, as a consultative body for inter-departmental work, to enable mutual exchange of information and minimize service redundancies.

Despite this, however, there is a dilemma in this implementation system. First, some experts and citizens are not content with this implementation system for the following reasons: (a) The involvement of multiple departments has not lead to satisfying services; rather, it has resulted in redundant services that waste government funds, and create a blind spot among the beneficiaries. (Argument made by an NGO); (b) Although there are diverse departments involved, the policies are not effective due to the absence of a control tower. We should consider the prime minister playing the role of controlling, adjusting and coordinating the related policies. (Argument made by Ministry of Health and Welfare); (c) Because Internet addiction is an issue related to mental health, the Ministry of Health and Welfare should be placed in charge of the policy, thereby eliminating the dilemma involving the Ministry of Science, ICT and Future Planning in charge of promoting the ICT industry and the Ministry of Culture, Sports and Tourism in charge of promoting the gaming industry. (Argument made by Ministry of Health and Welfare)

In order to accede to the above opinions, the current system must be reformed in a revolutionary manner. However, these opinions are advocated strongly, without any agreements among the interested parties and experts, and thus the dilemma remains. For instance, a former psychiatrist and current National Assemblyman of the ruling party proposed the enactment of a law

that would designate Internet games, together with illicit drugs, alcohol and gambling as the “Top 4 Addictions,” to be dealt with in a comprehensive manner at a center called the Addiction Management Center that would be newly established in every region across the country. Also, efficient execution of this program would require an addiction management committee to be established under the Prime Minister’s Office, and to be operated by Ministry of Health and Welfare. This was an attempt made by Ministry of Health and Welfare, which had not taken an active stance in regard to the Internet addiction issue prior to 2013, to change the then-circumstances and play a leading role in the addiction policy.

The legislative bill was met with a strong opposition, as expected. There were especially strong objections against categorizing gaming addiction along with addiction to illicit drugs, viewed with abhorrence. Heavy criticisms especially came from professional gamers, game content developers and producers, workers in the cultural sector, and gaming industry associations, who pointed out the problems at offline public hearings and in online spaces, and engaged in protests in front of the National Assembly Building in Seoul. Even the Ministry of Culture, Sports and Tourism advocated against the legislation because, as a government department that is responsible for promoting the gaming industry as a new growth engine, they knew they would find themselves in a conundrum if the legislative bill, placing games in the same category as drugs, were to pass.

Then, organizations formed by parents of school-aged children who believed that children do not study solely because of “games” and Protestant organizations that believed gaming took time and attention away from religious activities proceeded to sign petitions showing their support for the bill. At one point, the members of the ruling party, conscious of the voting power of parents of school-aged children, attempted to pass the bill. However, due to the objections against the bill, the importance of fostering the gaming industry as the future growth engine of S. Korea, and the convincing argument that functional games can be used in education, a deadlock was reached.

Finally in May 2016, the bill was rescinded, but the awareness of the issue still remains. At present, there are those in S. Korea that believe Internet games have been recognized as an independent disease, i.e., “addiction,” in DSM-5.<sup>12</sup> When more research results accumulate and the negotiating power

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<sup>12</sup> “Internet addiction (Internet Gaming Disorder)” is identified in Section III of DSM-5, based on the argument that there is a need for more research in order to find adequate grounds for designating the pathological online gaming as a disease. However, some individuals,

of doctors become more effective, it may be claimed by Ministry of Health and Welfare that it should be the sole and principal entity dealing with the Internet addiction issue, while the argument for classifying the “Top 4 Addictions” may be eliminated. In summary, this issue is in an unstable position, amidst the arguments made by numerous interested parties.

As this issue concerns the interests of not only Ministry of Culture, Sports and Tourism and Ministry of Health and Welfare, but also other government departments, the policy dilemma is expected to remain, especially since their interests are predicated on their roles in the government organization. For instance, because the proportion of young people experiencing Internet Addiction is high, the Ministry of Gender Equality and Family is one of the organizations involved in developing the response. The Ministry of Culture, Sports and Tourism which oversees the video game industry, has also been involved in developing this response, because online games are a significant facet of Internet addiction. The Ministry of Education is involved in educating elementary, middle and high school students, who display relatively higher Internet addiction rates. The Ministry of Health and Welfare is also involved, as Internet addiction is associated with psychological mechanisms. The reason for the involvement of the Ministry of National Defense is reflected by the number of soldiers experiencing Internet addiction, while the involvement of the Ministry of Justice is reflected in the volume of crimes committed by Internet addicts. It is the Ministry of Science, ICT and Future Planning, which currently plays the key role in this work. Overseeing the ICT promotion policy, the Ministry considers the Internet addiction policy a specialized field of ICT promotion policy (Young-Sam, Koh, 2015: 222).

In order to resolve this dilemma, the government is currently operating an organization called the Internet Addiction Policy Council, in which the representatives of the 8 relevant government departments participate. However, the fact of the matter is that the council is too weak to coordinate the interests of the departments involved. The law concerned may be amended to reinforce its coordination and adjustment functions, but it will be faced with resistance from the government departments that are wary of granting more power to another government department.

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depending on their interests, are interpreting this as the recognition of Internet addiction as an independent disease.



### **4.3. Dilemma in the Division of Roles and Cooperation among the Central and Local Governments and the Citizens**

Will the dilemma in relation to policy implementing entities be resolved if the roles of multiple government departments were to be readjusted? It probably will not be easy, as there is another related problem. It is the dilemma concerning the authority and responsibility of the central and local governments, which is as follows: The Internet addiction resolution policy determined by the central government is passed on to the local governments after budget allocation. The local governments then implement the policy in their regional spheres with the allocated budget. In other words, the local governments directly execute the policy conceptualized by the central government. Are there any problems in this method? Following criticisms have been voiced in regard to the government roles: (a) The issue of Internet addiction arises in the living spheres of the public, and thus must be dealt with by the local governments, instead of the central government. (Argument made by some experts); (b) In order to resolve the issue of Internet addiction, the government must form a governance system together with the private sector such as the media, enterprises and NGOs. (Argument made by the central government, NGOs and some experts); (c) The government must endeavor to create a healthy culture, rather than responding to this issue with a policy that leans to one side. (Argument made by some experts)

These valid points that were raised began to persuade the public, and gradually caused a policy dilemma. Recently, there have been new discourses among S. Koreans regarding the authority, role and responsibility of the government. Until now, in Korea, the State has been authoritarian in nature, with a substantive authority and role in conceptualizing and executing policies as well as strong implementation power. Nowadays, citizens are arguing that such centralized governance system, in which the central government exerts excessive regulation power and monopolizes the duties that should be undertaken by the local governments, must be done away with, especially since it is not in line with the current trends of the time.

Let us now examine the policy dilemma pertaining to the legal restrictions set forth by the State in regard to Internet addiction. The most representative regulation is the compulsory shut-down system, which prevents children and adolescents under the age of 16 from accessing online games from midnight until 6 a.m. the next morning (Enforced in Nov. 2011). There is also a selective shut-down system, which requires children and adolescents under the age of 18 to obtain parental consent to access games and cybercafes and

restricts the gaming hours of children if such is requested by their parents (Enforced on July 1, 2012) (Jong-Moon, Cho, 2015: 259-262).

The enforcement of these systems gave rise to a serious policy dilemma. Civic organizations filed petitions to the Constitutional Court, insisting that these systems infringe the adolescents' rights to freedom of action, the parents' right to educate their children, and the Internet game providers' freedom to perform work. Also, children and adolescents under the age of 16 resorted to using their parents' residential residence numbers and IDs, and this problem became rampant. Moreover, the gaming hours of adolescents did not decrease. Based on these reasons, a study reported that the systems were ineffective (Ug-Jun, Sung, 2013). Furthermore, there were criticisms that these systems caused the domestic gaming industry to shrink (Cultural Action Alliance, 2014). Adolescents voiced severe criticisms online against the Ministry of Gender Equality and Family, which was the administrator behind the law in question.

However, the Constitutional Court ruled that the law was constitutional in April 2004. This court decision was wholly welcomed by the parents, who wanted to control their children's gaming behavior, but the negative public opinion of the shut-down system remained and there were still those arguing for its discontinuance. Criticisms that parents, who were responsible for educating their own children, were abandoning their duties and being reliant solely on government regulations also continued. As a result, the Ministry of Gender Equality and Family, the principal entity behind the law, announced that they will change the compulsory shutdown system to allow adolescents to play online games even at night, if such is requested by the parents (Jong-Moon, Cho, 2015: 259-262).

What caused such confusions and policy dilemmas? It was probably due to the presence of conflicting views in society in regard to the role of the State. In the past, under the authoritarian regime, the State ran the country with iron-handed leadership to strive toward its goals, but now, there are a growing number of people insisting that such method should be obsolete in this day and age and that the State must share the role in planning, executing and evaluating policies with the citizens. They are demanding a shift from a "government paradigm" to a "governance paradigm," which is driven based on the values of openness, sharing and participation.<sup>13</sup>

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<sup>13</sup> Governance means that a cooperative and participatory government, rather than a government that exerts its power in a unilateral, top-down manner. This concept arose from the recognition that the government cannot solve all problems in today's society where there are a complexity of interests of different individuals and entities. (Sae-Eok, Han & Young-

However, in order for governance to be established as an administrative culture, there needs to be a groundbreaking change. Citizens demand that some of the authorities of the central government be passed down to the local governments and then to the people. However, it is unlikely for the central government to give up their present authority and budget, and it will try to retain the authorities, even if they could and should be transferred to the local governments for decentralization purposes.

The prevention and resolution of Internet addiction corresponds to the office work performed by the local governments. From the theoretical perspective, local governments must handle the office work related to resident welfare promotion, regional development and residential living environment, and promotion of education, sports, culture and the arts. Resolving the issue of Internet addiction is associated with promoting resident welfare and improving living standards, and thus should be undertaken by the local governments. If Internet addiction among adolescents is mainly caused by online games or communications policies, then it should be handled solely by the central government. However, in actuality, Internet addiction is a complex issue that occurs or is resolved due to a wide range of intricate factors related to the communities in which children and their families live as well as family issues concerning the affected children.

In these cases, the central government should not be the sole entity endeavoring to prevent and resolve the Internet addiction issue. Based on this, regulation-centered policies led by the central government will inevitably have limitations. The government must innovate their operating methods on its own. In other words, the government must “enable” people to take action rather than simply “provide” something, and to “steer” people into the right direction instead of “rowing” on its own. Because this complex issue cannot be resolved by the central government on its own, it should stop commanding and being controlling, and instead make the necessary changes so that the parties concerned help and cooperate with one another (Leach and Percy-Smith, 2001: 5-7).

From this perspective, in regard to the Internet addiction issue, the local governments should play a central role, analyzing the causes of addiction in their respective communities and using the diverse resources that are present such as schools, enterprises, religious institutions, specialized hospitals and clinics, natural recuperation centers, training centers, NGOs, libraries and

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Sam, Koh, 2012: 464).. In other words, it refers to a method in which the government, enterprises and citizens participate in all of the policy processes from conceptualization, execution and evaluation

music halls, to create resilient communities. The problem is that, despite the ongoing demand for a system that suits the time period, the central government will not likely make such changes. The local governments do not wish to fight for leadership in this issue due to their low budgets. Amid this ironic situation, creating highly resilient communities is being delayed.

## 5. CONCLUSION

The current situation pertaining to the Internet addiction policy of S. Korea was examined above. Just as is the case with the majority of national policies, the Internet addiction resolution policy has been formed on the boundaries where the demands of the interested parties are in conflict. The competition between the government departments to claim leadership in the issue, opposition and cooperation between the government and civic organizations, and conflicts among the gaming industry, parents, and organizations with different aims and interests all combine together and exert complex impacts to create a new type of terrain. For this reason, there cannot exist a national policy that can satisfy everyone.

In this paper, three policy dilemmas were brought to attention in order to reflect on the national policy implemented for Internet addiction, an issue where there are numerous interested parties. Such policy dilemmas were the cause and true nature of digital addiction, the inter-departmental implementation systems of the central government, and the division of roles and cooperation among the central and local governments and citizens. Of the issues causing policy dilemmas, the shutdown system and the Top 4 Addictions classification system resulted in severe conflicts, so much so that these issues were frequently reported by the media. What is of a greater concern though are the recent advancements of digital technology that will lead to new environmental changes, with the use of wearable computers, and VR and AR systems. At this point, we have not yet clearly identified the true nature of Internet addiction, yet we must prepare for addiction to new technologies. Consequently, there will be more affected age groups than the pathological use of the Internet, and it will require more diverse services to prevent and resolve the new addictions. This will inevitably result in a new dilemma.

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*Personal name* Fralin, Jessica.  
*Main title* #Stolen: is social media stealing your identity? / Jessica Fralin.  
*Published/Produced* Nashville: Abingdon Press, [2015]  
*ISBN* 9781426789069 (binding: soft back)  
*LC classification* BV4596.I57 F73 2015  
*Subjects* Social media--Religious aspects--Christianity. Social media addiction. Self-esteem in women--Religious aspects--Christianity. Identity (Psychology)--Religious aspects--Christianity. Internet and women--Psychological aspects. Internet and youth--Psychological aspects. Internet addiction--Religious aspects--Christianity.  
*Notes* Includes bibliographical references.  
*Additional formats* Online version: Fralin, Jessica. #Stolen Nashville: Abingdon Press, [2015] 9781501800542 (DLC) 2015016559

**A review of research on problematic internet use and well-being: with recommendations for the U.S. Air Force**

*LCCN* 2015935310  
*Type of material* Book  
*Personal name* Breslau, Joshua, author.  
*Main title* A review of research on problematic internet use and well-being: with recommendations for the U.S. Air Force / Joshua Breslau, Eyal Aharoni, Eric R. Pedersen, Laura L. Miller.  
*Published/Produced* Santa Monica, Calif.: RAND Corporation, [2015]  
*Description* xiv, 43 pages; 28 cm  
*Links* Publisher description <https://www.loc.gov/catdir/enhancements/fy1611/2015935310-d.html>  
*ISBN* 9780833088246  
 0833088246  
*LC classification* RC569.5.I54 B74 2015  
*Related names* Aharoni, Eyal, author.

- Subjects* Pedersen, Eric R., author.  
Miller, Laura L., 1967- author.  
Project Air Force (U.S.)  
United States. Air Force--Airmen--Mental health.  
United States. Air Force.  
Internet addiction.  
Internet addiction--Treatment.  
Behavior, Addictive--Review.  
Internet--Review.
- Notes* "RAND Project Air Force."  
"RR-849-AF."--Cover page 4.  
Includes bibliographical references (pages 30-43).
- Series* Research report; RR-849-AF  
Research report (Rand Corporation); RR-849-AF.

**Behavioral addictions: criteria, evidence, and treatment**

- LCCN* 2012278133
- Type of material* Book
- Main title* Behavioral addictions: criteria, evidence, and treatment  
/ edited by Kenneth Paul Rosenberg, Laura Curtiss  
Feder.
- Published/Created* London; Waltham, MA: Academic Press, c2014.
- Description* xxxi, 381 p.; 24 cm.
- ISBN* 9780124077249 (hbk.)  
0124077242 (hbk.)
- LC classification* RC533 .B447 2014
- Related names* Rosenberg, Kenneth Paul. ed  
Feder, Laura Curtiss ed
- Contents* An introduction to behavioral addictions / Kenneth  
Paul Rosenberg, Laura Curtiss Feder -- Behavioral  
addiction: the nexus of impulsivity and compulsivity /  
Natalie L. Cuzen, Dan J. Stein -- Diagnosis and  
treatment of bambling disorder / Jon E. Grant, Brian L.  
Odlaug -- Problematic online gaming / Orsolya Király,  
Katalin Nagygyörgy, Mark D. Griffiths, Zsolt  
Demetrovics -- Internet addiction disorder: overview  
and controversies / Aviv Weinstein, Laura Curtiss  
Feder, Kenneth Paul Rosenberg, Pinhas Dannon --  
Social networking addiction: an overview of

preliminary findings / Mark D. Griffiths, Daria J. Kuss, Zsolt Demetrovics -- Food addiction: evidence, evaluation, and treatment / Yvonne H.C. Yau, Carrie D. Gottlieb, Lindsay C. Krasna, Marc N. Potenza -- New directions in the pharmacological treatment of food addiction, overeating, and obesity / Amelia A. Davis, Paula J. Edge, Mark S. Gold -- Sex addiction: an overview / Kenneth Paul Rosenberg, Suzanne O'Connor, Patrick Carnes -- The tyranny of love: love addiction - an anthropologist's view / Helen E. Fisher - - Picking up the pieces: helping partners and family members survive the impact of sex addiction / Stefanie Carnes, Mari A. Lee -- Compulsive buying disorder / Emma Racine, Tara Kahn, Eric Hollander -- Exercise addiction / Krisztina Berczik, Mark D. Griffiths, Attila Szabó, Tamás Kurimay, Róbert Urban, Zsolt Demetrovics -- Meditation and spirituality-based approaches for addiction / Sri Sri Ravi Shankar, Kenneth Paul Rosenberg, Anju Dhawan, Achar Vedamurthachar -- Behavioral addiction in American law: the future and the expert's role / Daniel H. Willick.

*Subjects* Compulsive behavior.  
Psychology, Pathological.

*Notes* Includes bibliographical references and index.

**Behavioral addictions: DSM-5® and beyond**

*LCCN* 2014047897

*Type of material* Book

*Uniform title* Behavioral addictions (Petry)

*Main title* Behavioral addictions: DSM-5® and beyond / edited by Nancy M. Petry.

*Published/Produced* Oxford; New York: Oxford University Press, [2016]

*ISBN* 9780199391547 (alk. paper)

*LC classification* RC533

*Related names* Petry, Nancy M., editor.

*Contents* Gambling disorder: the first officially recognized behavioral addiction / Nancy M. Petry -- Internet gaming disorder: a new behavioral addiction / Florian

	Rehbein, Simone Kühn, Hans-Jürgen Rumpf and Nancy M. Petry -- Internet addiction: a future addictive disorder? / Hans-Jürgen Rumpf, Ran Tao, Florian Rehbein and Nancy M. Petry -- Hypersexual disorder / Megan M. Campbell and Dan J. Stein -- Compulsive shopping as a behavioral addiction / Donald W. Black -- Exercise addiction: diagnosis, psycho-biological mechanisms and treatment / Aviv Weinstein and Yitzhak Weinstein -- Food addiction / Susan Murray, Mark S. Gold and Nicole M. Avena -- Addicted to UV: evidence for tanning addiction / Jerod L. Stapleton, Joel Hillhouse and Elliot J. Coups.
<i>Subjects</i>	Diagnostic and statistical manual of mental disorders. 5th ed. Behavior, Addictive--diagnosis. Impulse Control Disorders--diagnosis.
<i>Notes</i>	Includes bibliographical references.

### **Cell phone distraction, human factors, and litigation**

<i>LCCN</i>	2016011900
<i>Type of material</i>	Book
<i>Main title</i>	Cell phone distraction, human factors, and litigation / edited by T. Scott Smith; contributors, Grant Chaisson, Patrick L. Dunn, Chelsea Schaeffer, Mary Sciaraffa, Elizabeth R. Smith, RN, MSN, Mary Sciaraffa.
<i>Published/Produced</i>	Tucson, Arizona: Lawyers and Judges Publishing Company, Inc., 2016.
<i>ISBN</i>	9781936360390 (hardcover: alk. paper) 193636039X (hardcover: alk. paper)
<i>LC classification</i>	HE9713 .C43 2016
<i>Related names</i>	Smith, T. Scott (Theodore Scott) editor.
<i>Contents</i>	Introduction -- Introduction -- Main questions -- History -- Cell phone use in contemporary society -- Interpreting research -- Locating relevant research -- Selecting expert witnesses -- Cognition -- Foundations of cognitive science -- Original research: false memory -- Original student research: effects of cell phone distraction on geometric planning with applications to collegiate classroom -- Driving -- Hands-free debate --

- Federal initiatives -- State-by-state restrictions on cell phone use while driving in the United States -- Failures of visual awareness -- Change blindness -- Visual masking -- Human factors and social interactions -- Cell phone addiction -- Developmental aspects of cell phone distraction -- Mobile media and young children -- Childhood cognition and eyewitness testimony -- Emerging adulthood (college students) and collegiate performance -- Distracted walking -- Distracted walking -- Nursing performance -- Nursing and critical thinking skills -- Nursing and social media -- Patient safety: health care distraction study in Pennsylvania -- Litigating an impaired employee performance case -- Driver characteristics -- Phone-related distracted behaviors -- Perceptions of distracted driver safety -- Future directions -- Future directions -- References -- About the author -- About the contributors -- Index.
- Subjects* Cell phones--Social aspects.  
Cell phones and traffic accidents.  
Cell phones--Law and legislation.  
Internet addiction.  
Compulsive behavior.
- Notes* Includes bibliographical references and index.

**Evolving psychological and educational perspectives on cyber behavior**

- LCCN* 2012005386
- Type of material* Book
- Main title* Evolving psychological and educational perspectives on cyber behavior / Robert Zheng, editor.
- Published/Created* Hershey, PA: Information Science Reference, c2013.
- Description* xxvi, 309 p.: ill.; 30 cm.
- ISBN* 9781466618589 (hbk.)  
9781466618596 (ebook)  
9781466618602 (print and perpetual access)
- LC classification* BF637.C45 .E86 2013
- Related names* Zheng, Robert.
- Summary* "This book identifies learners' online behavior based on the theories in human psychology, defines online education phenomena as explained by the social and

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	cognitive learning theories and principles, and interprets the complexity of cyber learning"--Provided by publisher.
<i>Subjects</i>	Internet--Psychological aspects. Internet users--Psychology. Internet addiction.
<i>Notes</i>	Web-based instruction--Psychological aspects. Includes bibliographical references and index.

**Facebook nation: total information awareness**

<i>LCCN</i>	2014951523
<i>Type of material</i>	Book
<i>Personal name</i>	Lee, Newton.
<i>Main title</i>	Facebook nation: total information awareness / Newton Lee.
<i>Edition</i>	Second edition.
<i>Published/Produced</i>	New York: Springer, [2014] ©2014
<i>Description</i>	xv, 412 pages: illustrations; 24 cm
<i>ISBN</i>	1493902091 9781493902095 1493917390 9781493917396
<i>LC classification</i>	QA76.575 .L44 2014
<i>Contents</i>	Part I. Prologue: From 1984 to Total Information Awareness: President Ronald Reagan in 1984; Total Information Awareness; Edward Snowden's NSA leaks and PRISM; Social networks' responses to NSA leaks and PRISM; Reform government surveillance and reset the net -- Part II. Privacy in the age of big data: Social networks and privacy: Zero privacy and the Central Intelligence Agency; The archer, carrier pigeons, and President Jimmy Carter; The pervasiveness of Facebook; Chairs are like Facebook; Facebook and personal privacy; Facebook friends and personal privacy; Facebook, children, and COPPA; Facebook, peer pressure, and social issues; Reality TV and social media; YouTube and Facebook videos: Am I pretty or ugly?; Netflix and social apps on Facebook;

Facebook timeline and Open Graph; Ambient social apps; Stalking apps and Facebook for sex; Facial recognition apps; Facial recognition on Facebook, Google+, and iPhone; Virtual passports: from privacy to data use; Social search: Google, plus Your World and Microsoft's Bing; Self-destructing messages; Facebook anonymous login; Anonymous social apps; Responses to zero privacy -- Smartphones and privacy: Smartphones; Location tracking on iPhone and iPad; Carrier IQ; Smartphone data collection transparency; Always on; Mobile apps privacy invasion; Mobile apps for children; Android market and Google Play; Apple's app store; Facebook app center -- Privacy breaches: Google street view; Google Easter eggs in disguise; Apple software bugs; Facebook user tracking bug and online behavioral tracking; Carrier IQ and other privacy blunders -- Part III. Business intelligence in social media: Business intelligence: Intelligent digital billboards; Data mining, Amazon.com, Lowe's and Target, True and Co.; Tumblr and Gmail: yes to advertisements; Social ads on Facebook; News Feed, Sponsored Stories, Custom Stories, and Facebook Exchange; Mobile market 2011-present: Facebook for every phone; Mobile market 2012-present: Instagram and mobile app install ads; Mobile market 2013-present: Facebook home and parse; Mobile market 2014-present: WhatsApp and Facebook Audience Network; Location-based mobile advertisements; Business communication on Facebook; B2B, B2C, H2H on social media -- Facebook analytics, advertising, and marketing / Dennis Yu and Alex Hong; The viral cycle; Metrics analysis action (MAA); Everything you need to know about Website Custom Audiences (WCA); Ten questions any Facebook marketing consultant should be able to answer; The insider's guide to Facebook traffic; Using exclusion targeting to filter out unwanted targets; Guess where users are spending more time: TV or mobile/Web?; The mechanics of Facebook ad budgeting; How

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spending a few dollars on Facebook can turn you into an influencer; The danger of buying Facebook fans; How to tell if your ad is working and diagnose newsfeed burnout -- Part IV. The rise of Facebook nation: Twitter: a world of immediacy: The pen is mightier than the sword; Citizen journalists; A world of immediacy; Prevalence of Twitter; Advertisements and campaigns on Twitter; Cuban Twitter: ZunZunco; Creative uses of Twitter; The downside of Twitter -- Misinformation and disinformation: The war of the worlds; Misinformation and disinformation on Twitter and Facebook; Ramifications and repercussions of misinformation and disinformation; Trustworthiness of Wikipedia; Google search sabotage; Advertising misinformation and disinformation; Authenticity of Facebook Profiles, Twitter accounts, and YouTube videos; Facebook account verification; Twitter verified accounts; Abuse of power -- Wikipedia and the new Web / Emily Temple-Wood: History of Wikipedia; Standard of quality; Learning curve; Wikipedia as major news source; Wikipedians; Acceptance of Wikipedia; Wikipedia educational program; Systemic bias and WikiProject women scientists; Native language Wikipedia; Wikipedia Zero -- E-government and E-activism: President Barack Obama and Web 2.0; Gov 2.0 apps; The Kony 2012 phenomenon; Reactions to Kony 2012; SOPA/PIPA blackout day; Reactions to SOPA/PIPA blackout; Battles over Internet legislations: OPEN, ACTA, CISPA; Peace on Facebook and Facebook Donate; Internet activism and Occupy Democracy; Transnational (Arab-Israeli) Facebook nation; Internet censorship in western democracies; Internet censorship in China; Arab spring uprisings. Egypt. Syria, Saudi Arabia, and Turkey; The rise of Facebook nation; Electoral College, social network constitution, cyber civil rights. Part V. Total Information Awareness in Facebook nation: Generation C in the age of big data: Digital omnivores and Generation C; Big data research and development



initiative; Big data in public health and economics; Big data in Facebook and Google -- Living in Facebook nation: Digital personalities and identities; Intertwining lives, online and offline; Digital footprint and exhaust data; Social media regrets; Facebook social plug-in: Like; Facebook knows who, when, where; Online births and deaths in Facebook nation; Memorialization on Facebook and life after death on social networks; The Facebook cleanse or face-to-Facebook; Connected cars: in-vehicle social networks and eXpressive Internet Architecture -- Connected home, Internet of Things, and Internet of me; Internet addiction and digital detox -- Personal privacy and information management: Personal information for sale; Personal information at risk Identity theft prevention; Privacy protection; Privacy on Facebook; Privacy on Google; Privacy on Smartphones; Data vault: data is the new oil; Personal analytics and social networks; Community analytics and social networks -- Personal Total Information Awareness: Humanity's dashboard; Ambient awareness and suicide prevention; Parental awareness, school bullying and cyberbullying; Student awareness and school safety; Crime awareness and video surveillance; Community awareness and neighborhood watch; Situational awareness and traffic safety; Location awareness and personal safety; Information awareness and law enforcement; Self-awareness and online dating; Pandora's box of Total Information Awareness -- Part VI. Epilogue: From Total Information Awareness to 1984: Brave new world of Total Information Awareness; George Orwell's 1984; Aldous Huxley's Brave New World; Point of no return: and Internet.org: "Every one of us, everywhere connected"; Privacy and e-activism: mesh networks and peer-to-peer social networks; Facebook questions: Two-way street of Total Information Awareness -- Appendix A. Facebook timeline (October 2003 -- August 2014 -- Appendix B. Facebook's two-year historical stock prices (May

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<i>Subjects</i>	18,2012-May 18, 2013). Facebook (Firm) Facebook (Electronic resource) Multimedia systems. Data protection. Online social networks. Internet--Security measures. Online social networks--Social aspects. Big data--Social aspects. Privacy, Right of.
<i>Notes</i>	Includes bibliographical references and index.

**Human developmental research: experience from research in Hong Kong**

<i>LCCN</i>	2013020303
<i>Type of material</i>	Book
<i>Main title</i>	Human developmental research: experience from research in Hong Kong / Daniel T.L. Shek, PhD., Cecilia M.S., Ma, PhD., Yu Lu, PhD. and Joav Merrick, M.D., editors.
<i>Published/Produced</i>	New York: Nova Science Publishers, [2014]
<i>Description</i>	xiv, 295 pages: illustrations; 26 cm.
<i>ISBN</i>	9781628081664 (hardcover)
<i>LC classification</i>	H62.5.H6 H86 2014
<i>Related names</i>	Shek, Daniel T. L .
<i>Contents</i>	Introduction -- Human developmental research -- Human development research -- Use of structural equation modeling in human development research / Daniel T.L. Shek and Lu Yu -- Application of SPSS linear mixed methods to adolescent development research: basic concepts and steps / Daniel T.L. Shek and Cecilia M.S. Ma -- How to plot growth curves based on SPSS output?: illustrations based on a study on adolescent development / Cecilia M.S. Ma and Daniel T.L. Shek -- Confirmatory factor analysis using AMOS: a demonstration / Daniel T.L. Shek and Lu Yu -- Testing factorial invariance across groups: an illustration using AMOS / Lu Yu and Daniel T.L. Shek -- The use of confirmatory factor analyses in adolescent research: project P.A.T.H.S. in Hong Kong

/ Daniel T.L. Shek and Cecilia M.S. Ma -- Family functioning, positive youth development and internet addiction in junior secondary school students: structural equation models using AMOS / Lu Yu and Daniel T.L. Shek -- Application -- Using structural equation modeling to examine consumption of pornographic materials in Chinese adolescents in Hong Kong / Daniel T.L. Shek and Cecilia M.S. Ma -- Intention to engage in sexual behavior: influence of family functioning and positive youth development over time / Cecilia M.S. Ma and Daniel T.L. Shek -- Objective outcome evaluation of a positive youth development program in China / Daniel T.L. Shek, Lu Yu, Rachel C.F. Sun, Tak Yan Lee, Xiao Yan Han, Xi Xi Li and Xin Zhao -- Subjective outcome evaluation of the training program of the project P.A.T.H.S.: findings based on the revised training program / Daniel T.L. Shek and Hildie Leung -- Subjective outcome evaluation of a positive youth development program in China / Daniel T.L. Shek, Xiao Yan Han, Tak Yan Lee and Lu Yu -- The Chinese adolescent materialism scale: psychometric properties and normative profiles / Daniel T.L. Shek, Cecilia M.S. Ma and Li Lin -- The Chinese adolescent egocentrism scale: psychometric properties and normative profiles / Daniel T.L. Shek, Lu Yu and Andrew M.H. Siu -- Acknowledgement -- About the editors -- About the department of applied social sciences, the Hong Kong Polytechnic University, hong Kong, PRC -- About the national institute of child health and human development in Israel -- About the book series "Pediatrics, child and adolescent health" -- Index.

*Subjects*

Social sciences--Research--China--Hong Kong.  
Social sciences--Research--Methodology.

*Notes*

Includes bibliographical references and index.

*Series*

Pediatrics, Child and Adolescent Health

**iDisorder: understanding our obsession with technology and overcoming its hold on us**

<i>LCCN</i>	2011037963
<i>Type of material</i>	Book
<i>Personal name</i>	Rosen, Larry D.
<i>Main title</i>	iDisorder: understanding our obsession with technology and overcoming its hold on us / Larry D. Rosen, Ph.D.
<i>Published/Created</i>	New York: Palgrave Macmillan, c2012.
<i>Description</i>	x, 246 p.: ill.; 25 cm.
<i>ISBN</i>	9780230117570 (hardback)
<i>LC classification</i>	T58.5 .R667 2012
<i>Summary</i>	"iDisorder: changes to your brain's ability to process information and your ability to relate to the world due to your daily use of media and technology resulting in signs and symptoms of psychological disorders--such as stress, sleeplessness, and a compulsive need to check in with all of your technology. Based on decades of research and expertise in the "psychology of technology," Dr. Larry Rosen offers clear, down-to-earth explanations for why many of us are suffering from an "iDisorder." Rosen offers solid, proven strategies to help us overcome the iDisorder we all feel in our lives while still making use of all that technology offers. Our world is not going to change, and technology will continue to penetrate society even deeper leaving us little chance to react to the seemingly daily additions to our lives. Rosen teaches us how to stay human in an increasingly technological world"-- Provided by publisher.
<i>Contents</i>	Machine generated contents note: -- 1. We Didn't Start the Fire * 2. Mini Generations 3. Internet of the Future * 4. Our Social Selves * 5. Who Am I Anyway? Am I My Online Persona or My Real Self? * 6. Is Anything Private Anymore? * 7. Information Overload * 8. The Myth of ADHD/OCD * 9. Taking an Emotional Toll * 10. How Does the Brain Work and What Are We Doing to Drive it to its Limits * 11. Distracting Ourselves to Death * 12. It's Not About Managing Your Time. It is About Managing Your Technology.

*Subjects* Information technology--Psychological aspects.  
 Internet addiction.  
 Psychology / Cognitive Psychology  
 Psychology / General  
 Psychology / Neuropsychology  
 Psychology / Social Psychology

**Internet addiction: a public health concern in adolescence**

*LCCN* 2013017748  
*Type of material* Book  
*Main title* Internet addiction: a public health concern in adolescence / Artemis Tsitsika, Mari Janikian, Donald E. Greydanus, Hatim A. Omar and Joav Merrick, editors.  
*Published/Produced* New York: Nova Publishers, [2013]  
 ©2013  
*Description* xviii, 227 pages; 23 cm  
*ISBN* 9781626189256 (hardcover)  
 1626189250 (hardcover)  
*LC classification* RC569.5.I54 I55 2013  
*Related names* Tsitsika, Artemis, editor of compilation.  
*Subjects* Internet addiction.  
 Internet and teenagers--Health aspects.  
 Teenagers--Health and hygiene.  
*Notes* Includes index.  
*Series* Pediatrics child and adolescent health

**Internet addiction in psychotherapy**

*LCCN* 2014451979  
*Type of material* Book  
*Personal name* Kuss, Daria J.  
*Main title* Internet addiction in psychotherapy / Daria J. Kuss, Nottingham Trent University, UK, and Mark D. Griffiths, Nottingham Trent University, UK.  
*Published/Created* Houndmills, Basingstoke, Hampshire: Palgrave Macmillan, 2015.  
*Description* viii, 128 pages; 23 cm.  
*ISBN* 9781137465061 (hardcover)  
 1137465069 (hardcover)

- LC classification* RC569.5.I54 K87 2015
- Related names* Griffiths, Mark, 1966-
- Subjects* Internet addiction--Treatment.  
Psychotherapy.  
Behavior, Addictive--therapy.  
Internet.  
Attitude to Computers.  
Psychotherapy--methods.
- Notes* Includes bibliographical references (pages 115-124) and index.
- Series* Palgrave studies in cyberpsychology  
Palgrave pivot  
Palgrave studies in cyberpsychology.  
Palgrave pivot.

**Internet addiction.**

- LCCN* 2014960140
- Type of material* Book
- Main title* Internet addiction.
- Published/Produced* New York, NY: Springer Berlin Heidelberg, 2015.
- Links* Table of contents only <http://www.loc.gov/catdir/enhancements/fy1508/2014960140-t.html>  
Publisher description <http://www.loc.gov/catdir/enhancements/fy1508/2014960140-d.html>
- ISBN* 9783319072418

**Internet addiction**

- LCCN* 2014932573
- Type of material* Book
- Personal name* Perdew, Laura, author.
- Main title* Internet addiction / by Laura Perdew; content consultant, Dr. Keith W. Beard, Marshall University, Department of Psychology.
- Published/Produced* Minneapolis, Minnesota: Essential Library, an imprint of Abdo Publishing, [2015]
- Description* 112 pages: color illustrations; 24 cm.
- ISBN* 9781624034213 (lib. bdg.)  
1624034217 (lib. bdg.)
- LC classification* RC569.5.I54 P47 2015

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<i>Summary</i>	Discusses the issues surrounding Internet addiction, including the history of the Internet, why Internet addiction is hard to diagnose, and how people can recover from this addiction.
<i>Contents</i>	Lost in the digital world -- Origins of the Internet -- Internet addiction emerges -- Gaming -- Communicating -- Social networking -- Shopping and gambling -- Media multitasking -- Seeking help.
<i>Subjects</i>	Internet addiction--Juvenile literature. Compulsive behavior--Juvenile literature. Internet addiction. Compulsive behavior. Compulsive behavior. Internet addiction.
<i>Form/Genre</i>	Juvenile works.
<i>Notes</i>	Includes bibliographical references (pages 104-109) and index.
<i>Series</i>	Essential issues Essential issues.

### **Internet and social media addiction**

<i>LCCN</i>	2014026932
<i>Type of material</i>	Book
<i>Personal name</i>	Nakaya, Andrea C., 1976-
<i>Main title</i>	Internet and social media addiction / by Andrea C. Nakaya.
<i>Published/Produced</i>	San Diego, CA: ReferencePoint Press, Inc. ®, 2015.
<i>ISBN</i>	9781601527608 (hardback) 1601527608 (hardback)
<i>LC classification</i>	RC569.5.I54 N35 2015
<i>Contents</i>	Is internet and social media addiction a serious problem? -- What causes online addiction? -- How do online addictions affect health and well-being? -- How can people overcome internet and social media addictions?
<i>Subjects</i>	Internet addiction. Social media addiction.
<i>Notes</i>	Includes bibliographical references and index. Grade 9 to 12

*Series* Compact research series

**Is online addiction a serious problem?**

*LCCN* 2013029018  
*Type of material* Book  
*Personal name* Netzley, Patricia D.  
*Main title* Is online addiction a serious problem? / Patricia D. Netzley.  
*Published/Produced* San Diego, CA: ReferencePoint Press, [2014]  
*Description* 96 pages: color illustrations; 24 cm.  
*ISBN* 9781601526205 (hardback)  
 1601526202 (hardback)  
*LC classification* RC569.5.I54 N48 2014  
*Subjects* Internet addiction--Popular works.  
*Notes* Includes bibliographical references and index.  
 Grade 9 to 12.  
*Series* In controversy

**Making sense of social problems: new images, new issues**

*LCCN* 2012017855  
*Type of material* Book  
*Personal name* Best, Joel.  
*Main title* Making sense of social problems: new images, new issues / edited by Joel Best, Scott R. Harris.  
*Published/Created* Boulder, Colo.: Lynne Rienner Publishers, 2012.  
*Description* 335 p.; 23 cm.  
*ISBN* 9781588268556 (hc: alk. paper)  
 9781588268808 (pb: alk. paper)  
*LC classification* HN18.3 .B47 2012  
*Related names* Harris, Scott R., 1969 September 16-  
*Contents* Preface -- Introduction -- Studying the construction of social problems / Scott R. Harris -- The nature of claims -- Teen suicide: a tale of two communities / Marguerite L. O'Leary and Joel Best -- Cell phone use while driving: claimsmaking in the media / Peter F. Parilla -- Claimsmakers -- The pet grief industry: framing the problem of pet death / Nancy Berns -- The movement linking vaccines to autism: parents and the internet / Victor W. Perez -- Old skeletons, pagans, and



museums: why ancient human remains are a bone of contention / Tiffany Jenkins -- Questioning experts -- Wankers, inverters, and addicts: the scientific construction of sexuality as a social problem / Liahna E. Gordon -- Murdered mothers: the social construction of troubling statistics / Keith Roberts Johnson -- Predicting financial collapse: when claimsmaking activities fail / John Barnshaw -- The role of the media -- "Choosing life": abortion, adoption, and the problem of regret / Jennifer L. Dunn -- The evolution of internet addiction / David Schweingruber and Michelle Horstmeier -- Breaking news on Nancy Grace: violent crime in the media / Brian A. Monahan and R.J. Maratea -- Policy outcomes -- In the shadow of saturated fat: the struggle to get trans fats noticed / Rachel J. Bacon -- Casinos and smoke-free legislation: claimsmaking about policy outcomes / Jenine K. Harris -- Global policy outcomes: comparing reactions to post-tsunami aid / Lynn Letukas -- Afterword -- Three questions for constructionism / Scott R. Harris and Joel Best -- References -- Contributors -- Index.

*Subjects*

Social problems.  
Social perception.

*Notes*

Includes bibliographical references (p. 295-329) and index.

*Series*

Social problems, social constructions

**New media in the information society***LCCN*

2011478781

*Type of material*

Book

*Main title*

New media in the information society / Ntombizandile Carol (Zandi) Lesame, Blessing Mbatha, Sibongile Sindane, editors.

*Edition*

1st ed.

*Published/Created*

Pretoria: Van Schaik, c2012.

*Description*

xii, 229 p.: ill., maps, ports.; 25 cm.

*ISBN*

9780627029974

0627029973

- LC classification* HM851 .N865 2012  
*Related names* Lesame, N. C.  
 Mbatha, B. (Blessing)  
 Sindane, S. (Sibongile)  
*Subjects* Information society.  
 Internet addiction.  
 Internet.  
 Mass media--Information technology.  
*Notes* Includes bibliographical references and index.

**Online addiction: The Internet**

- LCCN* 2012014191  
*Type of material* Book  
*Personal name* Parks, Peggy J., 1951-  
*Main title* Online addiction: The Internet / by Peggy J. Parks.  
*Published/Created* San Diego, CA: ReferencePoint Press, 2013.  
*Description* 96 pages: illustrations (chiefly color): 24 cm.  
*ISBN* 9781601522702 (hardback)  
 1601522703 (hardback)  
*LC classification* RC569.5.I54 P37 2013  
*Contents* Is online addiction real? -- Can people get addicted to social networking? -- How serious a problem Is compulsive online gaming and gambling? -- Can people recover from online addiction?  
*Subjects* Internet addiction--Popular works.  
*Notes* Includes bibliographical references (pages 88-90) and index.  
*Series* Compact research series

**Online health and safety: from cyberbullying to internet addiction**

- LCCN* 2015032650  
*Type of material* Book  
*Personal name* Schell, Bernadette H. (Bernadette Hlubik), 1952-  
*Main title* Online health and safety: from cyberbullying to internet addiction / Bernadette H. Schell.  
*Published/Produced* Santa Barbara, California: Greenwood, ©2016.  
*Description* x, 345 pages; 27 cm  
*ISBN* 9781440838965 (hardback: alk. paper)  
*LC classification* HV6773.15.C92 S36 2016

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<i>Subjects</i>	Cyberbullying. Internet addiction.
<i>Notes</i>	Includes bibliographical references and index.

**Positive youth development: a new school curriculum to tackle adolescent developmental issues**

<i>LCCN</i>	2012008885
<i>Type of material</i>	Book
<i>Main title</i>	Positive youth development: a new school curriculum to tackle adolescent developmental issues / Editors: Hing Keung Ma (Hong Kong Baptist University, Hong Kong, PRC), Daniel TL Shek (The Hong Kong Polytechnic University, Hungghom, Hong Kong, PRC), Joav Merrick (Health Services, Division for Intellectual and Developmental Disabilities, Ministry of Social Affa).
<i>Published/Produced</i>	Hauppauge, New York: Nova Science Publisher's, Inc., [2012]
<i>Description</i>	xii, 190 pages: illustrations; 27 cm
<i>ISBN</i>	9781620813843 (hardcover)
<i>LC classification</i>	HQ799.C552 H677 2012
<i>Related names</i>	Ma, Hing Keung. Shek, Daniel T. L. Merrick, Joav, 1950-
<i>Contents</i>	A brief overview of adolescent developmental problems in Hong Kong / Daniel TL Shek, Hing Keung Ma and Rachel CF Sun -- Development of a new curriculum in a positive youth development program / Daniel TL Shek, Hing Keung and Rachel CF Sun -- Construction of an integrated positive youth development conceptual framework for the prevention of the use of psychotropic drugs among adolescents / Tak Y Lee -- Importance of emotional competence in designing an anti-drug education curriculum for junior secondary school students in Hong Kong / Ben MF Law and Tak Yan Lee -- Parent engagement in youth drug prevention in Chinese families: advancement in program development and evaluation / Sandra KM Tsang -- Using positive youth development constructs

to design a drug education curriculum for junior secondary students in Hong Kong / Ching Man Lam, Patrick SY Lau, Ben MF Law and Yu H Poon -- Teaching money literacy in a positive youth development program / Tak Yan Lee and Ben MF Law -- Using positive youth development constructs to design a money management curriculum for junior secondary school students in Hong Kong / Patrick SY Lau, Ching-Man Lam, Ben MF Law and Yu H Poon -- Bystander position-taking in school bullying: the role of positive identity, self-efficacy and self-determination / Sandra KM Tsang, Eadaoin KP Hui and Bella CM Law -- Combating school bullying through developmental guidance for positive youth development and promoting harmonious school culture / Eadaoin KP Hui, Sandra KM Tsang and Bella CM Law -- Internet addiction and antisocial internet behavior of adolescents / Hing Keung Ma -- Construction of a teaching package on promoting prosocial internet use and preventing antisocial internet use / Hing Keung Ma, Miranda KY Chu and Winnie WY Chan.

*Subjects*

Youth development--China--Hong Kong.  
Problem youth--Behavior modification--China--Hong Kong.

*Notes*

Juvenile delinquency--China--Hong Kong--Prevention.  
Includes bibliographical references and index.

**Psychological and social implications surrounding internet and gaming addiction**

*LCCN*

2015012041

*Type of material*

Book

*Main title*

Psychological and social implications surrounding internet and gaming addiction / Jonathan Bishop, Centre for Research into Online Communities and E-Learning Systems, [editor].

*Published/Produced*

Hershey, PA, USA: Information Science Reference, an imprint of IGI Global, [2015]

*Description*

xx, 335 pages: illustrations; 29 cm.

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<i>ISBN</i>	9781466685956 (hardcover) 1466685956 (hardcover)
<i>LC classification</i>	RC569.5.I54 P76 2015
<i>Related names</i>	Bishop, Jonathan, 1979-
<i>Summary</i>	"This book focuses on the dark side of technology and the ways in which individuals are falling victim to compulsive internet use as well as gaming and gambling addictions"-- Provided by publisher.
<i>Contents</i>	Internet gaming disorder: a deeper look into addiction vs. high engagement / Mario Lehenbauer-Baum, Martina Fohringer -- New concepts, old known issues: The DSM-5 and internet gaming disorder and its assessment / Halley M Pontes, Mark D. Griffiths -- Determining the risk of digital addiction to adolescent targets of internet trolling: implications for the UK legal system / Jonathan Bishop -- Dangers of playing with the virtual other in mind: a psychoanalytical view on digital role-playing games and the edge between facilitating personality development and endangering the player's psyche / Katharina Mittlböck -- Avoiding adverse consequences from digital addiction and retaliatory feedback: the role of the participation continuum / Ashu M. G. Solo, Jonathan Bishop -- "I can't do it by myself": an IPA of clients seeking psychotherapy for their MMORPG addiction / Daria Joanna Kuss -- Cyber-stalking or just plain talking?: investigating the linguistic properties of rape-threat messages as compulsive behaviours / Mark Beech, Jonathan Bishop -- A theoretical model, including user-experience, aesthetics, and psychology, in the 3D design process / Thomas Photiadis, Nicos Souleles -- Using "on-the-fly corpus linguistics" to systematically derive word definitions using inductive abstraction and reductionist correlation analysis: considering seductive and gratifying properties of computer jargon / Jonathan Bishop -- The association between internet addiction and psychosocial variables / Bahadır Bozoglan, Veysel Demirer -- The impacts of alcohol on e-dating activity: increases in flame trolling corresponds with higher

	alcohol consumption / Jason Barratt, Jonathan Bishop - Consulting the British public in the digital age: technological innovation and internet addiction in the Web 2.0 era / Shefali Virkar -- Responsible gambling laws' contributions to behaviour change in problem gamblers in online poker / Wynford Compton, Dino M. Minoli, Mark M. H. Goode -- The games people play: exploring digital addiction within the context of the gamification of ICT project design for public sector administration reform / Shefali Virkar.
<i>Subjects</i>	Internet addiction. Internet--Psychology. Internet--Social aspects. Compulsive gambling.
<i>Notes</i>	"Premier reference source"--Cover. Includes bibliographical references (pages 291-328) and index.
<i>Series</i>	Advances in psychology, mental health, and behavioral studies (APMHBS) book series

**Reclaiming conversation: the power of talk in a digital age**

<i>LCCN</i>	2016297278
<i>Type of material</i>	Book
<i>Personal name</i>	Turkle, Sherry, author.
<i>Main title</i>	Reclaiming conversation: the power of talk in a digital age / Sherry Turkle.
<i>Published/Produced</i>	New York: Penguin Press, 2015. ©2015
<i>Description</i>	436 pages; 25 cm
<i>Links</i>	Contributor biographical information <a href="http://www.loc.gov/catdir/enhancements/fy1606/2016297278-b.html">http://www.loc.gov/catdir/enhancements/fy1606/2016297278-b.html</a> Publisher description <a href="http://www.loc.gov/catdir/enhancements/fy1606/2016297278-d.html">http://www.loc.gov/catdir/enhancements/fy1606/2016297278-d.html</a>
<i>ISBN</i>	9781594205552 (cloth) 1594205558 (cloth) 9781101980460 (paperback: international edition) 110198046X (paperback: international edition)
<i>LC classification</i>	P95.A5 .T86 2015
<i>Summary</i>	"Preeminent author and researcher Sherry Turkle has

been studying digital culture for over thirty years. Long an enthusiast for its possibilities, here she investigates a troubling consequence: at work, at home, in politics, and in love, we find ways around conversation, tempted by the possibilities of a text or an email in which we don't have to look, listen, or reveal ourselves. We develop a taste for what mere connection offers. The dinner table falls silent as children compete with phones for their parents' attention. Friends learn strategies to keep conversations going when only a few people are looking up from their phones. At work, we retreat to our screens although it is conversation at the water cooler that increases not only productivity but commitment to work. Online, we only want to share opinions that our followers will agree with - a politics that shies away from the real conflicts and solutions of the public square. The case for conversation begins with the necessary conversations of solitude and self-reflection. They are endangered: these days, always connected, we see loneliness as a problem that technology should solve. Afraid of being alone, we rely on other people to give us a sense of ourselves, and our capacity for empathy and relationship suffers. We see the costs of the flight from conversation everywhere: conversation is the cornerstone for democracy and in business it is good for the bottom line. In the private sphere, it builds empathy, friendship, love, learning, and productivity. But there is good news: we are resilient. Conversation cures. Based on five years of research and interviews in homes, schools, and the workplace, Turkle argues that we have come to a better understanding of where our technology can and cannot take us and that the time is right to reclaim conversation. The most human--and humanizing--thing that we do. The virtues of person-to-person conversation are timeless, and our most basic technology, talk, responds to our modern challenges. We have everything we need to start, we have each

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<i>Contents</i>	other"-- Source other than Library of Congress. The case for conversation. The empathy diaries; The flight from conversation -- One chair. Solitude; Self-reflection -- Two chairs. Family; Friendship; Romance -- Three chairs. Education; Work -- The path forward. The public square; The nick of time -- A fourth chair?. The end of forgetting.
<i>Subjects</i>	Conversation. Communication--Technological innovations. Online social networks. Social interaction. Internet and teenagers. Cell phones and teenagers. Internet addiction. Digital media--Social aspects. Cell phones and teenagers. Communication--Technological innovations. Conversation. Digital media--Social aspects. Internet addiction. Internet and teenagers. Online social networks. Social interaction. Neue Medien. Interpersonale Kommunikation. Zwischenmenschliche Beziehung.
<i>Notes</i>	Includes bibliographical references (pages 367-416) and index.

**The behavioral addictions**

<i>LCCN</i>	2014035470
<i>Type of material</i>	Book
<i>Uniform title</i>	Behavioral addictions (Ascher)
<i>Main title</i>	The behavioral addictions / edited by Michael S. Ascher, M.D., Petros Levounis, M.D., M.A.
<i>Edition</i>	First edition.
<i>Published/Produced</i>	Washington, DC: American Psychiatric Publishing, a division of American Psychiatric Association, [2015] ©2015



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- Description* xvii, 217 pages; 23 cm
- ISBN* 9781585624850 (pbk.: alk. paper)  
1585624853 (pbk.: alk. paper)
- LC classification* RC552.R44 B44 2015
- Related names* Ascher, Michael S., 1980- , editor.  
Levounis, Petros, editor.
- Contents* American Psychiatric Association, issuing body.  
Helping people behave themselves: identifying and  
treating behavioral addictions / Marc N. Potenza --  
Forensic implications of behavioral addictions / Robert  
L. Sadoff, Eric Y. Drogin, Samson Gurmu --  
Problematic exercise: a case of alien feet / Elias  
Dakwar -- Food addiction: sugar high / Jessica A.  
Gold, Kimberly A. Teitelbaum, Mark S. Gold --  
Gambling: Lord, I was born a gambling man / Carla J.  
Rash, Nancy M. Petry -- Internet gaming disorder:  
virtual or real? / Tolga Taneli, Yu-Heng Guo, Sabina  
Mushtaq -- Internet addiction: the case of Henry, the  
"reluctant hermit" / Sean X. Luo, Timothy K. Brennan,  
Justine Wittenauer -- Texting and e-mail problem use /  
Tauheed Zaman, Daniel Lache -- Kleptomania: to steal  
or not to steal: that is the question / Erin Zerbo, Emily  
Deringer -- Sex addiction: the fire down below / Lisa J.  
Cohen -- Love addiction: what's love got to do with it?  
/ Alexis Briggie, Clifford Briggie -- Shopping  
addiction: if the shoe fits, buy it in every color! /  
Najeeb Hussain, Nicole Guanci, Mahreen Raza,  
Dmitry Ostrovsky -- Tanning addiction: when orange  
is the new bronze / Petros Levounis, Omar Mohamed -  
- Work addiction: taking care of business / Michael  
Ascher, Jonathan Avery, Yael Holoshitz.
- Subjects* Compulsive behavior.  
Behavior therapy.
- Notes* Behavior, Addictive--therapy.  
Includes bibliographical references and index.

**The distraction addiction: getting the information you need and the communication you want without enraging your family, annoying your colleagues, and destroying your soul**

<i>LCCN</i>	2013935729
<i>Type of material</i>	Book
<i>Personal name</i>	Pang, Alex Soojung-Kim.
<i>Main title</i>	The distraction addiction: getting the information you need and the communication you want without enraging your family, annoying your colleagues, and destroying your soul / Alex Soojung-Kim Pang.
<i>Edition</i>	1st ed.
<i>Published/Created</i>	New York: Little, Brown, [2013].
<i>Description</i>	290 p.: ill.; 25 cm.
<i>ISBN</i>	0316208264 (hardcover) 9780316208260 (hardcover) 9780316247528 (pbk.) 0316247529 (pbk.)
<i>LC classification</i>	HM851 .P345 2013
<i>Summary</i>	The question of our time: can we reclaim our lives in an age that feels busier and more distracting by the day? We have all found ourselves checking email at the dinner table, holding our breath while waiting for Outlook to load, or sitting hunched in front of a screen for an hour longer than we intended. Mobile devices and the web have invaded our lives, and this is a big idea book that addresses one of the biggest questions of our age: can we stay connected without diminishing our intelligence, attention spans, and ability to really live? Can we have it all? Here the author, a Stanford University technology guru, says yes. His book is packed with fascinating studies, compelling research, and crucial takeaways. Whether it is breathing while Facebook refreshes, or finding creative ways to take a few hours away from the digital crush, this book is about the ways to tune in without tuning out. - Publisher.
<i>Contents</i>	Introduction: Two monkeys -- Breathe -- Simplify -- Meditate -- Deprogram -- Experiment -- Refocus -- Rest -- Eight steps to contemplative computing --

	Appendix 1: Keeping a tech diary -- Appendix 2: Rules for mindful social media -- Appendix 3: DIY digital sabbath.
<i>Subjects</i>	Information technology--Social aspects. Communication and technology. Technology--Social aspects. Technology--Psychological aspects. Internet addiction.
<i>Notes</i>	Includes bibliographical references (p. 245-280) and index.

**The Internet in China 1980s-2000s: cultural, political, and social dimensions**

<i>LCCN</i>	2013030328
<i>Type of material</i>	Book
<i>Main title</i>	The Internet in China 1980s-2000s: cultural, political, and social dimensions / editors, Ashley Esarey, Randolph Kluver.
<i>Published/Produced</i>	Great Barrington, Massachusetts: Berkshire Publishing Group, [2014]
<i>Description</i>	iv, 266 pages; 26 cm
<i>ISBN</i>	9781933782607 (hardcover: alkaline paper) 9781614729358 (paperback: alkaline paper)
<i>LC classification</i>	TK5105.875.I57 I55625 2014
<i>Related names</i>	Esarey, Ashley. Kluver, Randy.
<i>Contents</i>	Introduction / by Randolph Kluver -- Part 1. Business and economics -- Internet service providers (ISPs) -- Internet and political development -- Advertising online -- Shopping online -- Consumers online -- Telecommunications industry -- User generated content -- Part 2. Governance, law, and politics -- E-government -- Great firewall -- Internet content filtering -- Monitoring -- Internet governance -- Internet regulation -- Part 3. Entertainment and education -- Blogging -- Chinese language and computing -- Digital divides -- Distance education -- Email -- Online game industry -- Microblogging -- Parody -- Text messaging -- Virtual reality -- Part 4.

- Society and social welfare -- Children online -- Chinese diaspora online -- Community online -- Social and political impacts -- Internet cafes -- Internet events -- Internet in everyday life -- Internet addiction -- Dating online -- Cybersex -- Conclusion / by Ashley Esarey.
- Subjects* Internet--China.  
Internet--Social aspects--China.  
Social change--China.  
China--Social conditions--1976-2000.  
China--Social conditions--2000-
- Notes* Includes bibliographical references and index.

### **Threat talk: the comparative politics of internet addiction**

- LCCN* 2011030410
- Type of material* Book
- Personal name* Manjikian, Mary.
- Main title* Threat talk: the comparative politics of internet addiction / Mary Manjikian.
- Published/Created* Farnham Surrey, England; Burlington, VT: Ashgate, c2012.
- Description* x, 187 p.; 25 cm.
- ISBN* 9781409433941 (hardback: alk. paper)  
9781409433958 (ebook)
- LC classification* RC569.5.I54 M36 2012
- Subjects* Internet addiction--Social aspects.  
Internet addiction--United States.  
Internet addiction--China.
- Notes* Includes bibliographical references (p. [165]-179) and index.

### **Treatment strategies for substance and process addictions**

- LCCN* 2015002551
- Type of material* Book
- Main title* Treatment strategies for substance and process addictions / [edited by] Robert L. Smith.
- Published/Produced* Alexandria, VA: American Counseling Association, [2015]  
©2015

- Description* xv, 347 pages: illustrations; 25 cm.  
*ISBN* 9781556203534 (pbk.: alk. paper)  
 1556203535 (pbk.: alk. paper)  
*LC classification* RC564 .T754 2015  
*Related names* Smith, Robert L. (Robert Leonard), 1943- , editor.  
 American Counseling Association, issuing body.  
*Contents* Addictions: an overview / Robert L. Smith -- Alcohol  
 addiction / Todd F. Lewis -- Tobacco (nicotine)  
 addiction / Robert L. Smith -- Marijuana addiction /  
 Richard S. Balkin -- Methamphetamine addiction /  
 Helena G. Rindone -- Prescription drug addiction /  
 Todd F. Lewis -- Pathological gambling / Stephen  
 Southern -- Sex addiction / Stephen Southern, Dawn  
 Ellison, and Mark Hagwood -- Disordered eating /  
 Tamara Duarte and Fredericka DeLee -- Work  
 addiction / Summer M. Reiner -- Exercise addiction /  
 Michele Kerulis -- Compulsive buying/shopping  
 addiction / Kimberly Frazier -- Internet addiction /  
 Joshua C. Watson -- Addictions: status, research, and  
 future / Robert L. Smith.  
*Subjects* Substance abuse--Treatment.  
 Compulsive behavior--Treatment.  
 Substance-Related Disorders--therapy.  
 Behavior, Addictive--therapy.  
 Evidence-Based Practice--methods.  
*Notes* Includes bibliographical references and index.

### **Youth and internet addiction in China**

- LCCN* 2013004276  
*Type of material* Book  
*Personal name* Bax, Trent.  
*Main title* Youth and internet addiction in China / Trent Bax.  
*Published/Produced* New York: Routledge, 2014.  
*Description* 228 pages; 25 cm.  
*ISBN* 9780415656917 (hbk)  
*LC classification* HQ799.9.I58 B39 2014  
*Contents* Introduction: turn on -- Log in -- The internet addiction  
 disorder -- Critiques of the internet addiction disorder  
 model -- The humanistic intensive internet use model -

- 
- Subjects* - The family war-machine and the search for freedom -  
- Push and pull factors -- DSM-IV: internet addiction  
disorder -- Conclusion: log off.  
Internet and youth--China.  
Internet addiction--China.  
Families--China.
- Notes* Includes bibliographical references and index.
- Series* Routledge culture, society, business in East Asia  
series; 1

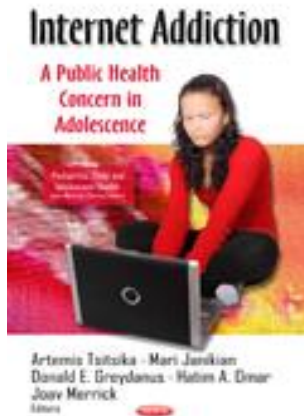


## RELATED NOVA PUBLICATIONS

### INTERNET ADDICTION: A PUBLIC HEALTH CONCERN IN ADOLESCENCE

*Editors: Artemis Tsitsika, Mari Janikian,  
Donald E. Greydanus, Hatim A. Omar and Joav Merrick*

Division for Intellectual and Developmental Disabilities, Ministry of  
Social Affairs and Social Services Jerusalem, Israel



ISBN: 978-1-62618-925-6

Publication Date: 2013



The Internet has become an important channel for communication, source of information, education tool, entertainment hub and social network in the contemporary world. With the popular use of smart phones, people can connect to the internet at any place, at any time. However, easy accessibility, anonymity, rich entertainment programs, and information explosion in the internet also attract young people to an extent that may adversely affect their physical health, psychological well-being, family life and academic performance. Although there is no agreed upon definition and assessment of “internet addiction”, there are research findings showing that problems or pathological use of the internet can lead to a wide range of personal, interpersonal, family and social problems. Hence, internet addiction is an emerging public health concern in different places in the world.

Overall speaking, this is a valuable piece of work which is very useful to pediatricians, health professionals and researchers in the field of Internet addiction.

## **BONDING AND INTERNET ADDICTION IN HONG KONG\***

***Daniel TL Shek, PhD, FHKPS, BBS, SBS, JP<sup>1-5,†</sup>,  
Moon YM Law, BSW, MSW, RSW<sup>1,2</sup>  
and Jianqiang Liang<sup>1,2</sup>***

<sup>1</sup>Department of Applied Social Sciences,

The Hong Kong Polytechnic University, Hong Kong, PRC

<sup>2</sup>Centre for Innovative Programmes for Adolescents and Families,

The Hong Kong Polytechnic University, Hong Kong, PRC

<sup>3</sup>Kiang Wu Nursing College of Macau, Macau, PRC

<sup>4</sup>Dept. of Social Work, East China Normal University, Shanghai, PRC

<sup>5</sup>Division of Adolescent Medicine, Department of Pediatrics, Kentucky Children’s Hospital, University of Kentucky College of Medicine, Lexington, Kentucky, USA

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\* The full version of this chapter can be found in *Adolescence and Health: Some International Perspectives*, edited by Joav Merrick, published by Nova Science Publishers, Inc, New York, 2015.

† Correspondence: Professor Daniel TL Shek, PhD, FHKPS, BBS, SBS, JP, Chair Professor of Applied Social Sciences, Department of Applied Social Sciences, Faculty of Health and Social Sciences, The Hong Kong Polytechnic University, Room HJ407, Core H, Hungghom, Hong Kong. E-mail: daniel.shek@polyu.edu.hk

This chapter examines the role of gender and bonding in Internet addiction in Hong Kong junior secondary school students. A total of 3,328 Secondary 1 (Grade 7) students responded to validated measures of positive youth development and Internet addiction. Consistent with the predictions, results showed gender differences in bonding, with adolescent girls showing a higher level of perceived bonding than did adolescent boys; adolescent boys also showed a higher level of Internet addiction symptoms than did girls. The findings provided support for the literature on the prediction of the positive youth development that bonding was related to risk behavior indexed by Internet addiction. The theoretical and practical implications of the findings are discussed.

## **BONDING AND INTERNET ADDICTION IN ADOLESCENT BOYS AND GIRLS IN HONG KONG\***

***Daniel TL Shek, PhD, FHKPS, BBS, SBS, JP<sup>1-5,†</sup>,***

***Tracy Wong, BSSc<sup>1</sup>***

***and Moon YM Law, BSW, MSW, RSW<sup>1</sup>***

<sup>1</sup> Department of Applied Social Sciences, The Hong Kong Polytechnic University, Hong Kong, PRC

<sup>2</sup> Centre for Innovative Programmes for Adolescents and Families, The Hong Kong Polytechnic University, Hong Kong, PRC

<sup>3</sup> Kiang Wu Nursing College of Macau, Macau, PRC

<sup>4</sup> Department of Social Work, East China Normal University, PRC

<sup>5</sup> Division of Adolescent Medicine, Department of Pediatrics, Kentucky Children's Hospital, University of Kentucky College of Medicine, Lexington, Kentucky, United States of America

This study examined the role of gender and bonding in Internet addiction in Hong Kong junior secondary school students. A total of 3,328 Secondary 1

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\* The full version of this chapter can be found in *Child and Adolescent Health Yearbook 2014*, edited by Joav Merrick, published by Nova Science Publishers, Inc, New York, 2015.

† *Correspondence*: Professor Daniel TL Shek, PhD, FHKPS, BBS, SBS, JP, Chair Professor of Applied Social Sciences, Faculty of Health and Social Sciences, Department of Applied Social Sciences, The Hong Kong Polytechnic University, Room HJ407, Core H, Hunghom, Hong Kong. E-mail: daniel.shek@polyu.edu.hk.

(Grade 7) students responded to validated measures of positive youth development and Internet addiction. Consistent with the predictions, results showed gender differences in bonding, with adolescent girls showing a higher level of perceived bonding than did adolescent boys; adolescent boys also showed a higher level of Internet addiction symptoms than did girls. The findings provided support for the prediction of the positive youth development literature that bonding was related to risk behavior indexed by Internet addiction. The theoretical and practical implications of the findings are discussed.

## **INTERNET ADDICTION PHENOMENON IN EARLY ADOLESCENTS IN HONG KONG\***

***Daniel TL Shek, PhD, FHKPS, BBS, SBS, JP<sup>†,1,2,3,4</sup>  
and Lu Yu, PhD<sup>1</sup>***

<sup>1</sup>Department of Applied Social Sciences, The Hong Kong Polytechnic University, Hong Kong, PRC

<sup>2</sup>Centre for Innovative Programmes for Adolescents and Families,  
The Hong Kong Polytechnic University, Hong Kong, PRC

<sup>3</sup>Department of Social Work, East China Normal University,  
Shanghai, PRC

<sup>4</sup>Kiang Wu Nursing College of Macau, Macau, PRC

The present study investigated the prevalence and demographic correlates of Internet addiction in Hong Kong adolescents as well as the change in related behavior at two time points over a one-year interval. Two waves of data were collected from a large sample of students (Wave 1: 3,328 students, age = 12.59 ± 0.74 years; Wave 2: 3,580 students, age = 13.50 ± 0.75 years) at 28 secondary schools in Hong Kong. Comparable to findings at Wave 1

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\* The full version of this chapter can be found in *Child Health and Human Development Yearbook 2013*, edited by Joav Merrick, published by Nova Science Publishers, Inc, New York, 2014.

† Correspondence: Professor Daniel TL Shek, PhD, FHKPS, BBS, SBS, JP, Associate Vice President (Undergraduate Programme), Chair Professor of Applied Social Sciences, Department of Applied Social Sciences, Faculty of Health and Social Sciences, The Hong Kong Polytechnic University, Room HJ407, Core H, Hunghom, Hong Kong, PRC. E-mail: daniel.shek@polyu.edu.hk

(26.4%), 26.7% of the participants met the criterion of Internet addiction at Wave 2 as measured by Young's 10-item Internet Addiction Test. The behavioral pattern of Internet addiction was basically stable over time. While the predictive effects of demographic variables including age, gender, family economic status, and immigration status were not significant, Internet addictive behaviors at Wave 1 significantly predicted similar behaviors at Wave 2. Students who met the criterion of Internet addiction at Wave 1 were 7.55 times more likely than other students to be classified as Internet addicts at Wave 2. These results suggest that early detection and intervention for Internet addiction should be carried out.

## **DEVELOPMENT OF AN INTEGRATED INTERVENTION MODEL FOR INTERNET ADDICTION IN HONG KONG\***

***Daniel TL Shek, PhD, FHKPS, BBS, JP<sup>†,1,2,3,4,5</sup>  
and Hildie Leung<sup>1</sup>***

<sup>1</sup>Department of Applied Social Sciences,

The Hong Kong Polytechnic University, Hong Kong, PRC,

<sup>2</sup>Centre for Innovative Programmes for Adolescents and Families,

The Hong Kong Polytechnic University, Hong Kong, PRC,

<sup>3</sup>Kiang Wu Nursing College of Macau, Macau, PRC,

<sup>4</sup>Department of Social Work, East China Normal University,  
Shanghai, PRC

<sup>5</sup>Division of Adolescent Medicine, Department of Pediatrics, Kentucky  
Children's Hospital, University of Kentucky College of Medicine,  
Lexington, KY, USA

In response to the severe lack of indigenously developed preventive and counseling services for young people displaying Internet addiction problem, the Community Chest of Hong Kong funded a pioneering project entitled "Youngster Internet addiction prevention and counseling service". Besides

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\* The full version of this chapter can be found in *Child and Adolescent Health Yearbook 2013*, edited by Joav Merrick, published by Nova Science Publishers, Inc, New York, 2014.

† Correspondence: Professor Daniel TL Shek, PhD, FHKPS, BBS, JP, Chair Professor of Applied Social Sciences, Faculty of Health and Social Sciences, Department of Applied Social Sciences, The Hong Kong Polytechnic University, Room HJ407, Core H, Hunghom, Hong Kong. E-mail: daniel.shek@polyu.edu.hk

provision of preventive services at the community, school, family and individual levels, individual-based and family-based counseling services were developed for young people displaying Internet addiction problem. In this paper, the major features of the counseling model are outlined, including emphases on controlled and healthy use of the Internet, understanding the change process in adolescents with Internet addiction problem, use of motivational interview methods, adoption of a family perspective, multi-level counseling at the individual, peer and family levels, and the use of both case and group approaches. The process of intervention in this counseling model is also described. Evaluation findings provide support for this integrated intervention model.

## **INTERNET ADDICTION, MEDIA USE, AND DIFFICULTIES ASSOCIATED WITH SLEEPING IN ADOLESCENTS\***

***Stephanie J Stockburger, MD, FAAP  
and Hatim A Omar, MD, FAAP†***

Division of Adolescent Medicine, Department of Pediatrics,  
University of Kentucky, Lexington, Kentucky, United States

The objective of this review article is to summarize the current literature regarding internet addiction; media use, and sleep disruption in adolescents. Design: Systematic review of current literature. Methods: The data was obtained through literature review of articles published in the last 10 years. Conclusion: Internet addiction and media use have the power to have great influence over the sleep of children and adolescents and it is important to take advantage of the positive effects of media while minimizing the potentially negative, but severe, consequence of sleep disruption.

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\* The full version of this chapter can be found in *Child and Adolescent Health Yearbook 2013*, edited by Joav Merrick, published by Nova Science Publishers, Inc, New York, 2014.

† Correspondence: Professor Hatim A Omar, MD, Division of Adolescent Medicine, UK Healthcare, Department of Pediatrics, KY Clinic Room J422, Lexington, KY 40536-0284, United States. E-mail: haomar2@uky.edu

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## INTERNET ADDICTION AND PSYCHIATRIC COMORBIDITIES\*

***Ahsan Nazeer, MD, Donald Greydanus<sup>†</sup>, MD, DR HC  
(Athens) and Joseph Calles, MD***

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Internet addictive disorder is a term used to encompass numerous behaviors associated with Internet overuse. In academia, IAD continues to be a controversial concept and is currently not a part of Diagnostic and Statistical Manual-IV-TR. Recent research, mostly from Asian countries has played an increasingly important role in delineating the prevalence, diagnostic structure and associated medical and psychiatric comorbidities of this disorder. The following is a brief review of the current literature regarding IAD and psychiatric comorbidities.

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**FAMILY FUNCTIONING, POSITIVE YOUTH  
DEVELOPMENT AND INTERNET ADDICTION IN JUNIOR  
SECONDARY SCHOOL STUDENTS: STRUCTURAL  
EQUATION MODELS USING AMOS\***

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This chapter illustrates the procedure of testing full latent variable models using AMOS. Based on a sample of 4,106 secondary school students in Hong Kong, the relationships among family functioning, positive youth development, and Internet addiction were tested with AMOS 17.0 program. Several competing models were examined and compared. The results revealed that both positive youth development and family functioning predicted Internet addition among adolescents negatively. Higher level of family functioning also had indirect effects on students' Internet addictive behaviors through partial mediation of positive youth development. This study highlights the importance of promoting positive youth development and strengthening family functioning in reducing Internet addiction in Hong Kong secondary school students.

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\* The full version of this chapter can be found in *Human Developmental Research: Experience from Research in Hong Kong*, edited by Daniel T.L. Shek, Cecilia M.S. Ma, Lu Yu and Joav Merrick, published by Nova Science Publishers, Inc, New York, 2013.

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## INTERNET ADDICTION IN CHINESE ADOLESCENTS IN HONG KONG: ASSESSMENT, PROFILES AND PSYCHOSOCIAL CORRELATES \*

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Internet addiction behavior was examined in 6,121 Chinese primary and secondary school students in Hong Kong based on the assessment frameworks of Ivan Goldberg and Kimberly Young. Result showed that scales derived from both frameworks (CIA-Young Scale and CIA-Goldberg Scale) were internally consistent and evidence supporting their validity was found. Descriptive statistical analyses revealed that roughly one-fifth of the respondents could be classified as Internet addicted based on either scale. Further analyses showed that Internet addicted and non-addicted respondents differed in the Internet use and related behavior. Logistic regression analyses showed that engagement in certain on-line activities (such as playing on-line

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games and downloading software) and replacement of pastimes activities (such as watching TV and going out with friends) by Internet activities predicted higher probability of Internet addiction.

## **INTERNET ADDICTION IN HONG KONG ADOLESCENTS: PROFILES AND PSYCHOSOCIAL CORRELATES\***

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This chapter examines the prevalence of Internet addiction among Hong Kong adolescents and its psychosocial correlates in a large sample of early adolescents in Hong Kong. A total of 3,328 students (age = 12.59 ± 0.74 years) were recruited from 28 secondary schools in Hong Kong. Using Young's 10-item Internet Addiction Test, 26.4% of the participants were classified as having Internet addiction. Age and having divorced parents were positively correlated with pathological use of Internet, while higher academic competence, general positive youth development, and positive and clear identity predicted a lower probability of Internet addiction. These results demonstrate that Internet addiction has become an emergent youth problem in

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Hong Kong, which deserves more attention from researchers and professionals. Preventive strategies aiming at risk and protective factors identified in the present study should be developed and implemented.

## **INTERNET ADDICTION PHENOMENON IN EARLY ADOLESCENTS IN HONG KONG\***

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The present study investigated the prevalence and demographic correlates of Internet addiction in Hong Kong adolescents as well as the change in related behavior at two time points over a one-year interval. Two waves of data were collected from a large sample of students (Wave 1: 3,328 students, age = 12.59 ± 0.74 years; Wave 2: 3,580 students, age = 13.50 ± 0.75 years) at 28 secondary schools in Hong Kong. Comparable to findings at Wave 1 (26.4%), 26.7% of the participants met the criterion of Internet addiction at Wave 2 as measured by Young's 10-item Internet Addiction Test. The behavioral pattern of Internet addiction was basically stable over time. While the predictive effects of demographic variables including age, gender, family economic status, and immigration status were not significant, Internet addictive behaviors at Wave 1 significantly predicted similar behaviors at

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Wave 2. Students who met the criterion of Internet addiction at Wave 1 were 7.55 times more likely than other students to be classified as Internet addicts at Wave 2. These results suggest that early detection and intervention for Internet addiction should be carried out.

## **INTERNET ADDICTION AND ANTISOCIAL INTERNET BEHAVIOR OF ADOLESCENTS\***

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Internet addiction and the moral implication of antisocial Internet behavior will be investigated in this paper. More and more people use the Internet in their daily life. Unfortunately the percentage of people who use the internet excessively also increases. The concept of Internet addiction or pathological use of Internet is discussed in detail, and the characteristics of Internet addicts are also delineated. The social, (especially the antisocial), use of Internet is discussed. It is argued that the behavior of Internet use is similar to daily life social behavior. In other words, Internet behavior is a kind of social behavior. Kohlberg's theory of moral development is employed to delineate the moral reasoning of the antisocial Internet behavior. The following behaviors are regarded as antisocial Internet behavior: 1) the use of Internet to carry out illegal activities such as selling faked products or offensive pornographic materials, 2) the use of Internet to bully others (i.e., cyberbullying) such as distributing libelous statements against a certain person, 3) the use of Internet to cheat others and 4) to use Internet to do illegal gambling. The characteristics of the moral stages that are associated with these antisocial Internet behaviors are investigated in detail.

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